INTEGRATED PEST MANAGEMENT SUB-COMMITTEE

MEETING AGENDA
MONDAY, FEBRUARY 22nd, 2021 – 2:00 P.M.
COUNCIL CHAMBERS
1225 MAIN STREET, SEBASTIAN, FL

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

IV. APPROVAL OF MINUTES **–ACTION ITEM**
January 11th, 2020 Meeting

V. ANNOUNCEMENTS

VI. PUBLIC INPUT

VII. NEW BUSINESS

VIII. OLD BUSINESS
Item A. Recent Projects Presentation
i. PPT from November 2nd meeting, updated with final numbers
Item B. Non-Chemical Methods Table
i. Review of previously approved table
ii. Discussion of any new items to be added
Item C. Section II. Structures
i. Review and Discussion
Item D. Section III. Canals
i. Review and Discussion

VIII. SUB-COMMITTEE MEMBER MATTERS

IX. STAFF MATTERS

X. ITEMS FOR NEXT AGENDA
Item A. IV. Ponds and V. Ditches
Item B. VI. Further Non-Chemical Recommendations

XI. ADJOURNMENT

ANY PERSON WHO DECIDES TO APPEAL ANY DECISION MADE ON THE ABOVE MATTERS, WILL NEED A RECORD OF THE PROCEEDINGS AND MAY NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH APPEAL IS TO BE HEARD. SAID APPEAL MUST BE FILED WITH THE CITY CLERK'S OFFICE WITHIN TEN DAYS OF THE DATE OF ACTION. (286.0105 F.S).

IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), ANYONE WHO NEEDS SPECIAL ACCOMMODATIONS FOR THIS MEETING SHOULD CONTACT THE CITY'S ADA COORDINATOR AT (407)-589-5330 AT LEAST 48 HOURS PRIOR TO THIS MEETING.TWO OR MORE ELECTED OFFICIALS MAY BE IN ATTENDANCE.

IPM SUB-COMMITTEE
AGENDA TRANSMITTAL FORM

Board Meeting Date: February 22nd, 2021

Agenda Item Title: IV. APPROVAL OF MINUTES –**ACTION ITEM**
January 11th, 2020 Meeting

Recommendation: Submitted for Committee Member Approval

Background:

If Agenda Item Requires Expenditure of Funds:
Total Cost: n/a

Attachments: January 11th, 2021 Meeting Minutes

INTEGRATED PEST MANAGEMENT SUB-COMMITTEE
MINUTES OF REGULAR MEETING
COUNCIL CHAMBERS
1225 MAIN STREET, SEBASTIAN, FL
JANUARY 11, 2021

I. Call to Order -- The meeting was called to order by Mr. Benton at 2:00 p.m.

II. Pledge of Allegiance was recited by all.

III. Roll call

Present
Dr. Cox
Mr. Carrano
Mr. Stadelman
Ms. Callaghan (Zoom)
Ms. Munroe (Zoom)
Ms. Lovell (Zoom)

Also Present:
Ken Griffin, Stormwater Manager (Zoom)
Brian Benton, Leisure Services Director
Kim Haigler, Environmental Planner
Barbara Brooke-Reese, MIS Manager
Janet Graham, Technical Writer (Zoom)

IV. Approval of Minutes -- December 8, 2020

Chairman Benton asked if everyone had a chance to review the Minutes as presented. All indicated they had. Hearing no changes/corrections, Mr. Benton called for a motion. A motion approving the December 8, 2020 Minutes as presented was made by Mr. Carrano, seconded by Dr. Cox, and approved unanimously via voice vote.

V. Announcements -- None

VI. Public Input

Bob Stephen, Concha Drive, Sebastian. Thanked the Sub-Committee for including public input.

VII. New Business

A. Chemical Spreadsheet

i. Review key features and organization
ii. Discuss selection of chemicals listed

Ms. Haigler stated the spreadsheet has been included in the agenda packets for this meeting. As were discussed at the last meeting, there are 17 classifications of chemicals that are approved for aquatic use in Florida. Any chemical used falls under one of those classifications. She reviewed each column on the spreadsheet and explained what that column contains. She pointed out that many of the chemicals listed are not even used presently.

Mr. Benton called for questions or comments from the Sub-Committee members. He reminded everyone that this list is not finalized, and today the action item is for approval of how the chart is set up.

Dr Cox:

- Regarding the December progress reports, there is listed only three or four different ingredients. He inquired if there are more that are going to be added and, if so, should those products that will be used going forward be also included in the list. Ms. Haigler stated the December treatment sheets will be discussed under the next agenda item.

Mr. Griffin stated he likes the way the spreadsheet is set up.

Mr. Benton called for public input.

Diana Bolton, Sebastian. She stated that when the chemicals are approved for this list, she understands that some of these chemicals are to be used only under certain circumstances and in certain areas. She is concerned that, if a chemical is approved for use in another area of Florida, it might not be good for this area. She is also concerned that the solution to the pollution is spraying more chemicals, and if those chemicals no longer work, the solution to that is spraying extra chemicals because those plants are becoming chemical resistant. When chemicals are mixed, and if those chemicals are approved for the mixing, is that okay? There is something called the triage effect which is known in the medical profession where a doctor can prescribe a certain pharmaceutical drug and another specialist may prescribe another pharmaceutical drug, both of which are so-called safe, but when the two are mixed they become lethal. When chemicals are being mixed, is that a prescribed method? Does that kill another species of plant or animal that we do not want to kill? Does it stay in the environment longer when those are mixed?

The other question she has is regarding weather restrictions. During certain times of the year spraying should not be done. She does not believe in spraying at all. She thinks it is the most expensive, unhealthy option possible. If spraying is going to be done, are the weather restrictions taken into consideration? A lot of chemicals have a label that states that they should not be sprayed under certain weather conditions.

Bob Stephen, Concha Drive, Sebastian. He questioned whether this spreadsheet is going to be available to the public. He also suggested adding the toxicity of the chemicals on there so that the public understands that some of these are somewhat dangerous. He stated there should be some way of alerting the public to the use of these chemicals. He would like to see Hazmat symbols contained on the spreadsheet.

Mr. Benton reminded the Sub-Committee that the action item is only to approve the chart, the organization and features of the chart. This Sub-Committee will get more into detail as it moves forward on the actual chemicals that are on the chart.

Ms. Haigler stated that the label signal word is included on the spreadsheet. Also, the EIQ number incorporates environmental and human health effects when that number is calculated. Regarding the information on the chemical table, limitations for uses and weather limitations are on the labels. So the licensed applicators consider those things when they apply the products. She explained that combining chemicals is actually a best management practice (BMP) for aquatic vegetation treatment because it increases the selectivity and reduces the amount of chemicals used, which is ideal.

Mr. Benton called for comments/questions from the Sub-Committee members relating to the chemical spreadsheet.

Dr. Cox:

- Regarding the column labeled Field Use EIQ, he asked if that would answer Mr. Stephen's question about notifying folks about how potent or less potent these chemicals are. Ms. Haigler stated the labeled signal word is what is on the label, and the EIQ considers all of the environmental and health risks, and the Field Use EIQ is going to show its effects over time. There are a number of things that are going to show the toxicity that he is looking for that are already in the table. Dr. Cox suggested that there be something in a column on the spreadsheet with some type of a rating of how serious these products are and how less serious they are. This would save people from having to go somewhere else for that information. Mr. Benton stated as an example that, if a product is applied on an athletic field and the reentry period is 24 hours, the field has to remain closed, and there has to

be signage posted so that people do not enter that field. Ms. Haigler stated these products are only being sprayed in the stormwater features on the inside of the shoreline. They are not being sprayed on the outside of the shoreline where people would be walking. Also, she said the only reentry consideration that is on these labels, because they are for aquatic use, is about swimming reentry. None of the City's stormwater is safe for swimming. Dr. Cox stated he is trying to come up with a way to inform people, without their having to go to the library, etc., that whatever chemical is being used is safe or unsafe. Dr. Cox stated there is nothing in the Field Use EIQ column. Mr. Benton reminded everyone that what is being discussed at this meeting pertains to the organization of the chart and what is included in the chart. This meeting is not to discuss the specific chemicals and the specific numbers. This is more about the layout of this chart.

Ms. Munroe stated that she understands the concerns. She suggested that maybe what might be considered is putting a symbol of what the level of the label warning is, such as crossbones, etc. Just adding a symbol to the word might help. That way, even if people do not know what the word itself means, they will recognize the symbol. She added that the incidents of children or dogs running along the slope to the waterway is probably low. Ms. Haigler stated the spraying is primarily along the seawalls of the canals and the interiors of the ponds.

Mr. Benton said staff will look at the symbols that are also on the labels, and they will be put in where the labeled signal words appear, and that will come back for discussion at the next meeting. The words and the symbols will both be on the chart. This being an action item, and there being no further comments from members of the Sub-Committee, Mr. Benton called for a motion. A motion to approve the spreadsheet with the additions as discussed above was made by Mr. Stadelman, seconded by Mr. Carrano, and passed unanimously via voice vote.

B. Aquatic Vegetation Control 1st Month Summary

i. Sites and species treated

Ms. Haigler stated there are treatment sheets for December, the first month of the Aquatic Vegetation Control spraying contract. She stated the treatment was done along nine miles of the canal, including Hardee Park canal, Collier canal, the South Collier canal, and five of the main ponds, including the Garden Club Park pond, County pond, Schumann Lake pond, Tulip pond, and the Schumann Historic Park pond. She explained how she arrived at the figures on the PowerPoint presentation (SEE ATTACHED). Over time, that gives staff a good idea of what plants are the biggest problems.

ii. Chemical use summary

Ms. Haigler reviewed that there were 2.2 gallons of the adjuvants (additives) applied. Of the herbicides that were applied, there were 4.8 gallons, for a total of 7 gallons of total chemicals applied across the whole stormwater system. The cost was $1,438.00, which includes all of the costs involved, including manhours, equipment used, applicators, and the chemicals used. Mr. Benton emphasized that the figure that is shown includes everything for the operation; it is not the cost for herbicides and adjuvants. Ms. Haigler called for questions/comments from the Sub-Committee members.

Dr. Cox:

- Appreciated the clarification of the amounts used. He also inquired as to the Unit Code--the FL--what that means. Ms. Haigler stated that stands for fluid ounces. Mr. Benton explained that in the first column of the spreadsheet it shows what is directed on the label, and the second two columns at the end of the chart show what was actually applied. Ms. Haigler also stated that the main adjuvant used is basically just a vegetable oil.

There being no further comments/questions from the Sub-Committee members, Mr. Benton called for public input on this portion of the agenda.

Bob Stephen, Concha Drive, Sebastian. Questioned the amount of chemicals that were used and what the cost was. Ms. Haigler pointed out what was on the PowerPoint presentation, which showed that information. Regarding swimming, he asked if the City is going to post any of those areas. There is a swimming hole, and he related that some people would like to see the swimming hole posted. He also asked if anybody is studying the mixture of chemicals that is used. He is of the opinion that the City should be more transparent with what is going to be used.

Diana Bolton, Sebastian. Regarding the swimming, she is at the stormwater park often, and there are dogs being walked there and children walking along the shoreline. Mr. Benton emphasized that those people and pets are not supposed to be in the water. Ms. Bolton stated it is a popular place to walk dogs. Mr. Benton stated it is a stormwater treatment area first and foremost. Ms. Bolton stated City Council voted on having signage when spraying is done, and apparently that is not being done. Regarding the treatment sheets, she stated glyphosate is listed. She asked why it is on the approved list when other cities are banning this now. She also asked regarding the label signal word, which chemical is the worst.

Seeing no one else from the public who wished to speak, and hearing no one on Zoom who wished to speak, Mr. Benton clarified some of the questions that were posed during public input. On the chart that is on everyone's screen, under ponds and canals, he emphasized and explained that those are fluid ounces, which equaled seven gallons total. He then called for comments/questions from the Sub-Committee members.

Dr. Cox:

- To be clear, he referenced the 320 fluid ounces is mixed with water for spraying. Mr. Benton said that when seven gallons total is mentioned, that is seven gallons of concentrate. That does not include the water that has to be mixed with the chemicals.

Hearing nothing further from the Sub-Committee members, Mr. Benton moved to the next item on the agenda.

VIII Old Business

A. Applied Aquatics 2-Year Summary

i. Sites and species treated
ii. Chemical use summary

Ms. Haigler stated there is only a month of data available, as Aquatic Vegetation Control (AVC) just began spraying. She explained the two-year data that is available from Applied Aquatics (SEE ATTACHED), which covers 2018-19. She reviewed that, as staff sees the problem areas grow, they can start looking at what is needed to address them. Besides spraying, maybe one of these is the next one that needs a project. The Twin Ditches is an example. There was a lot of work done there that will mitigate much of the need for spraying. She explained the amount of the different products that were applied over the two-year period. She pointed to the copper that was used. She spoke to Aquatic Vegetation Control regarding copper, and they said they absolutely do not use copper for the reason that it accumulates in the soil. For both years using Applied Aquatics, the average cost for both years was $25,000.00. It is projected that the cost will be approximately the same for the new contract. Mr. Benton called for comments/questions from the Sub-Committee members.

Dr. Cox:

- Regarding the copper question, he spoke to an employee of Applied Aquatics regarding copper. That employee told Dr. Cox that they use copper, and there is no problem with it.

Mr. Stadelman:

- Asked if the public is notified when spraying is to be done. He questioned if there could be a process instituted where certain people along the canals can be notified when spraying is to be done. Mr. Griffin stated the City currently does not notify the public when spraying is to be done along the canals. He stated that weather conditions dictate whether spraying is going to be done. He will look into a way to provide that notification, at the very least on the website. He will report back at the next meeting on what he finds. Mr. Benton stated that signage is a requirement in the City parks, and he suggested that is something that can be looked into in the Stormwater IPM Plan. He stated it will be more difficult regarding the stormwater plan because of the distance being covered. Dr. Cox suggested that the IT staff is able to generate the names and addresses of all the residents along the canals and around the ponds. Then the City can send out a postcard that says there will likely be spraying in a certain neighborhood, and then list the date(s). Ms. Haigler stated that the applicators do not know until they get out there what they are going to be spraying. Also, they do not know the weather conditions. Dr. Cox would like to see the postcards contain information on how to contact the City staff in order to get more information. He wants this information to come directly from the City telling the residents who live around these canals and ponds what is planned to be done and when.

Ms. Callaghan:

- Stated that from what she sees on the PowerPoint, she would like to see a little more detailed information that can be included about application rates and whether the products have been combined in some way, whether there has been greater success or less success in how the treatment was applied. Ms. Haigler stated the applicators do not have follow-up on their treatment sheets. These are professionals in the field, and they make their decisions on a number of factors, including the pH, water temperature, etc. Mr. Griffin added that the first report for December from the new contractor has the details that are being requested. What is being looked at right now is the work that Ms. Haigler has done to summarize two years of work by the previous contractor. She has been highlighting that work. The details that are being asked about will show up on the

individual reports that will be gotten from the new contractor. Ms. Callaghan stated that will be helpful.

Mr. Benton stated that the City just received the December information from Aquatic Vegetation Control this past Friday. That information will be going out to the Sub-Committee members later today or tomorrow so that they can see the actual sheets that come into the City with their report and their invoice. This information will also be posted on the City's website. There being no further comments/questions from the Sub-Committee members, Mr. Benton opened the meeting for public input on the Applied Aquatics two-year summary.

Bob Stephen, Concha Drive, Sebastian. He would like to know how many gallons have to be sprayed on the canals. The seven-gallon figure should be clarified. He inquired about the swimming hole and the parks--what is being sprayed at those places. Mr. Griffin stated that a total of 4.8 gallons of herbicide in the month of December for all stormwater facilities was used. That amount is tracked along with the number of gallons of adjuvants.

Diana Bolton, Sebastian. Regarding spraying, she asked what the City is being charged per month and how does that work out per year. She asked what the $1,438.50 per month represents. She asked if that is just for the gallons used. Mr. Benton stated that Ms. Haigler already explained what the cost was. The cost for the month of December included manhours, equipment, herbicides, adjuvants, gas/diesel. Everything that could possibly be needed is included in that $1,438.50 for December. Ms. Bolton asked if they are spraying on an as-need basis, do they have incentives to spray less or do they have incentives to spray more so they can charge more, and how do they know where it is needed.

Mr. Benton stated the City stormwater staff is in communication with the contractor, especially in regard to the December and January treatments on the areas that needed the most treatment. Regarding the comment that was made regarding the City's parks, any time the parks are treated now there is an IPM Plan that has to be followed in the City's parks and in the park property. What happens in the waterways is under the Stormwater Department's purview. It is Mr. Benton's responsibility to ensure that staff is following the parks IPM Plan. Notice is posted in the parks when spraying is done in the parks. Having been asked about Hardee Park not being posted, Mr. Benton stated that the stormwater canal is not considered in the Parks and Properties IPM Plan.

There being no further comments/discussion on this agenda item, Mr. Benton moved to the next item on the agenda.

IX. Sub-Committee Member Matters

Dr. Cox:

- Reviewed that at the last meeting he inquired whether there could be a representative from AVC come and answer questions about what they are doing. Instead of that, Mr. Griffin suggested Dr. Cox give him the questions that he has about the AVC contract. Dr. Cox put together a set of questions which he gave to Mr. Griffin, Mr. Benton, and Ms. Haigler. The one question that Dr. Cox deems most important is regarding the conversation he had with one of the contractor's applicators in December. He was told at that time that AVC's motto is "control and maintain." Dr. Cox is asking for a clear definition of what is meant by control and maintain when it comes to doing their work. He added that there is a mixture of invasive species growing on the banks behind his house. When that area is sprayed, the vegetation turns to a brown mush and then very quickly comes back. If the idea of control and maintain is to wipe out invasives and hope that the native plants will come back, he does not believe that will happen. He is of the opinion that there has got to be a better way to deal with this other than coming back and spraying with chemicals. Mr. Griffin replied that he will spend some more time responding to Dr. Cox regarding those three questions. He will copy Mr. Benton and Ms. Haigler on that.

X. Staff Matters -- None

XI. Items for Next Agenda

A. Review new sections of Plan for approval

Mr. Benton said staff will continue to make adjustments on the spreadsheet. He will ask Sub-Committee members to look at the chemical spreadsheet that was passed out at this meeting and to come back at the next meeting with comments/questions

XII. Adjournment

There being no further business, Mr. Benton adjourned the meeting at 3:15 p.m.

By:_____ Date:_____

jg

IPM SUB-COMMITTEE
AGENDA TRANSMITTAL FORM

Board Meeting Date: February 22nd, 2021

Agenda Item Title: VIII. OLD BUSINESS
Item B. Non-Chemical Methods Table
i. Review of previously approved table
ii. Discussion of any new items to be added

Recommendation: Submitted for Committee Member Review and Discussion

Background: Originally approved by sub-committee at the December 21st, 2020 Meeting

If Agenda Item Requires Expenditure of Funds:
Total Cost: n/a

Attachments: Non- Chemical Methods Table

BIOLOGICAL, CULTURAL, AND MECHANICAL CONTROLS

	Control Method	Vegetation Type	Asset Classification	Description	How to Implement	Currently in Use?
	Allelopathy	Limited	Ponds, Canals	The presence of one plant diminishes the population of another.	adding or enhancing populations of the preferred native plant. example: spikerushes inhibit Eurasian Milfoil growth	No
	Pathogens	Limited	All	some plant pathogens, such as bacteria, enzymes, or fungi, can stress aquatic plants – commercially available pathogens(bioherbicides) are under research evaluation	Usually combined with herbicides to provide more effective long-term control. Requires areas of still water and is often paired with direct aeration	No
CULTURAL	**Always Mow with Sharp Blades**	Emergent	Ditches	Dull mower blades cause uneven cutting and weaken the grass blades. Vegetation along sloping shorelines is crucial to shoreline stabilization and the prevention of sediment and nutrient laden runoff entering the waters.	Ensure that staff sharpens all mower blades on a consistent schedule and when necessary. The City and the contractor has the tools and trained staff to accomplish this.	Yes
	Minimizing Nutrient Inputs	All	All	Reducing the amount of Nitrogen and Phosphorus entering the conveyance system to the maximum extent practicable.	Ferilizer Ordinance, NPDES Compliance, erosion control ordinance and inspections, BMAP participation, stormwater park ponds, resident outreach.	Yes
	Native Shoreline Plantings	Emergent	Ponds, Canals	Native shoreline plantings will attract natural predators, prevent the establishment of invasive aquatics, filter water entering the water, and support a healthy aquatic ecosystem.	As the budget allows or in working with local non-profit groups begin to introduce more plantings of florida freshwater shoreline natives to our accessible shorelines.	Yes
	Maintain Updated Chemical and Fertilizer Application Equipment	All	All	Maintaining updated chemical and fertilizer application equipment is necessary to adhere to the label requirements for applications to ensure equipment is calibrated. Updated motorized equipment cleans more efficiently, calibrates and hold calibration more accurately and deteriorated parts can be easily replaced.	Staff will stay up-to-date on the equipment and ensure that equipment is replaced as necessary to ensure the correct calibrations are applied per the label. Staff will also maintain servicing all parts necessary as recommended from the manufacturer.	Yes
	Direct Aeration	Algae	All	Bottom-up hypnolimnetic aeration provides oxygen for microorganisms to more efficiently break down muck and nutrients, effectively reducing algal growth. Also can prevent fish kills in small ponds. Aeration is especially helpful in water bodies with limited circulation	Would specifically be reccommended at structural choke points where muck accumulates and used in correlation with the addition of pathogens.	No
	Fountains	Algae	Ponds	Fountains help move the water from the pond's surface to the bottom. Aeration by the fountain oxygenates the water, keeping hydrogen sulfide gas from collecting at the bottom and ultimately, significantly reducing the amount of this gas in the pond. Effectively reduces algae, duckweed and watermeal.	Many ponds already have fountains installed. Future addition of fountains in other ponds is advisable where site conditions are favorable.	Yes
	Mow at Correct Height	All	Ditches	Mowing shoreline vegetation at the correct height will ensure that we promote healthy grass and maintain shoreline stabilization	Ensure that staff and contractors are not mowing the shoreline grasses so short that it poses a risk to the plant and root health	Yes
	Tool Sanitation	All	All	Pests can easily spread among sites on unsanitized equipment. Many aquatic pests multiply easily from small pieces of vegetation. Cleaning mowers, tractors, and equipment between areas minimizes pest transport.	Stormwater Staff and contractors must wash down and clean all equipment as frequently as possible, especially when leaving areas with pest problems.	Yes
MECHANICAL	**Dredging/ Excavation**	All	Canals, Ponds, Ditches	Plants and sediments are removed- increases water depth,restores storage capacity, and removes nutrient rich sediments. Ideal for highly impacted areas.	Heavy equipment requires broad access path to areas. This is not for natural areas as the turbidity is greatly incresed and nutrients are released into water column	Yes
	Manual Weed Pulling	Emergent	Structures	Where safe and applicable, manual weed eradication will involve staff manually pulling weeds.	Areas where it is safe and applicable can have manual weed eradication.	Yes
	Vacuum Removal	All	Structures	A vacuum truck is utilized by City staff to remove all accumulated sediments and vegetative debris from all catch basins	Staff cleans out these structures regularly and keeps record of how much debris is removed.	Yes
	Mechanical Removal	All, except duckweed, watermeal	Ponds, Canals, Some structures	Removal of vegetation by specially designed aquatic harvesters. Cut vegetation is removed and piled on shoreline for disposal. This process must be repeated throughout the growing season to maintain control. This process disturbs the sediments in the substrate and is non-selective, often removing fish and other fauna in the process. This method can be very costly.	Only about 50% of the City's canal system is accessible by this type of equipment and most of the shoreline is privately-owned with very limited access for piling and removing the cut vegetation. This method is reccommended when the location and cost are feasible,	Yes
	Manual Raking	Floating	Canals, Ponds	Utilizing a common yard tools to pull floating mats out of the water.	labor intensive, however, waterfront homeowners can be encouraged to rake vegetation for effective small scale control.	No

IPM SUB-COMMITTEE
AGENDA TRANSMITTAL FORM

Board Meeting Date: February 22nd, 2021

Agenda Item Title: VIII. OLD BUSINESS
Item C. Section II. Structures
i. Review and Discussion
Item D. Section III. Canals
i. Review and Discussion

Recommendation: Submitted for Committee Member Review and Discussion

Background: Originally submitted to sub-committee at February 8th, 2021 Meeting, in which it was decided by consensus that deeper review was needed

If Agenda Item Requires Expenditure of Funds:
Total Cost: n/a

Attachments: Draft Sections II &III of the IPM Plan

III. CANALS

Overview

Stormwater assets classified as "canals" include the entire interconnected system of wide, mostly sea walled waterways. Altogether, the City maintains over 9 miles of canals and seawalls. It is acknowledged that aquatic vegetation provides an important ecological function in the canals. However, the City must be careful that the storage and flow capacity of these important waterways is protected.

Do Nothing Option

The overgrowth of aquatic vegetation within the canal system can greatly impede the flow of water, crucial for flood control throughout the City. The canals are also frequently utilized for kayaking and fishing. These recreational opportunities are lost when dense vegetation blocks navigation and affects the habitat quality by altering the water's chemistry and decreasing light penetration.

Finally, and most importantly, the canal system has multiple direct outfalls to the St. Sebastian River (SSR). Any vegetation that is not properly maintained in the canal system is easily introduced into this State protected freshwater system. For this reason, Florida Statute 369.22 (Appendix X) requires that all public and private water owners enact a "maintenance program" for aquatic vegetation. Therefore, the tolerance threshold for vegetation growth, before action is taken is considered moderate for these assets.

Non-Chemical Methods

In order to control vegetation, the following cultural and mechanical methods will be conducted routinely as part of standard proactive maintenance procedures within the City's stormwater system:

- **Dredging.** When areas of the canal system are at their lowest storage, the City can access the canal bottoms with equipment to mechanically remove the vegetation and accumulated sediments.
- **Mechanical Removal by Contractor.** During periods where invasive vegetation has spread too extensively at a location to be brought back under control by routine methods, a contractor may be hired with the equipment to cut and remove the vegetation by boat.
- **Sediment and Erosion Control at Development Sites.** In compliance with City Ordinance No. 54-3-11.2. (Appendix X) and the City's NPDES Permit (Appendix X), proper erosion and sediment control at all sites of development is required to be established and maintained throughout the duration of the project and is inspected regularly for compliance. Sediments directly washing off a site, and into the canals created a mound of substrate for vegetation to establish and carry nutrients which many invasive species thrive on.

IV. PONDS

Overview

There are dozens of stormwater "ponds" throughout the City. These include all of the ponds and dry retention areas that are located within City parks and properties, as well as the interconnected ponds of the Stormwater Park. Pond vegetation provides an ecological as well as an aesthetic benefit. If left to grow uncontrolled, however, the flood control and safety of these properties can be impaired.

Do Nothing Option

Too much aquatic vegetation in the ponds can very quickly reduce their stormwater storage capacity. This accelerated **succession** causes localized flooding problems.
Also, many species of tall grasses growing around the pond edges can create dense thickets which are impossible for police and park visitors to see beyond; creating a serious safety concern. Many of the ponds also contain a fountain for aeration and algae control. Dense vegetation can damage the fountains by clogging the pump system or blocking the spray.
The tolerance threshold for pest activity, before action is taken is considered high for these assets.

Non-Chemical Methods

In order to control vegetation, the following cultural and mechanical methods will be conducted routinely as part of standard proactive maintenance procedures within the City's stormwater system:

- **Dredging.** When all or part of the ponds are at their lowest storage, the City can access the pond bottoms and edges with equipment to mechanically remove the vegetation and accumulated sediments.
- **Mechanical Removal by Contractor.** During periods where invasive vegetation has spread too extensively at a location to be brought back under control by routine methods, a contractor may be hired with the equipment to cut and remove the vegetation by boat.
- **Fountain Aeration.** A fountain installed in the center of the pond provides water circulation and increases the dissolved oxygen of the water. This inhibits vegetation growth and increases the habitat quality for aquatic animals as well.
- **Planting Native Emergent Vegetation.** Maintaining a healthy, natural shoreline of native vegetation will help prevent the pest vegetation from re-establishing and enhance the habitat and aesthetic quality of the pond.