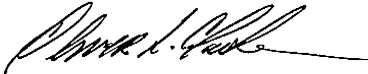


CITY OF CAPE CORAL  
PUBLIC WORKS DEPARTMENT

TO: NSEMA stakeholders and participants  
FROM: Oliver Clarke, Engineer IV   
DATE: December 18, 2009  
SUBJECT: NSEMA Section 4 – Cape Coral Considerations Since October Meeting

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To assist with your review, the following is provided to summarize the outcome of the work assignments given to Cape Coral following our last meeting on October 8.

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**Cape Coral Fertilizer Ordinance**

At the last stakeholders meeting the Cape Coral assignment was to work with FDEP to determine how the existing studies could be used to justify an ordinance based on the Lee County ordinance so we could finalize the NSEMA language. The existing studies were not adequate, relative to the new state law, to justify the ordinance provisions desired. Janicki Environmental then (very quickly) completed a report for us that did provide adequate justification, so we are able to now propose an ordinance based on the state model plus the added provisions desired.

We've deleted the 'defend the ordinance' sentence. This is not necessary as it is our overriding responsibility to defend any ordinance adopted by council. We've also deleted parts about others helping with scientific justification as we now have the justification.

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**Revise the Cape Coral Seawall Engineering Design Standard to provide structure which is beneficial to marine habitat**

Following our last stakeholder meeting on 10/8 we assembled a work group (Hans, Connie, John Honc (Honc Marine), David Scott, and myself) to develop specific concept(s) for the revised salt water canals design standard. Our objectives were to:

- Achieve environmental benefits
- Provide a design that is constructible at a reasonable cost
- Provide a design that will be stable for decades.

We looked at the details of the basic designs discussed at the last 2 meetings providing habitat for fish, oysters, other creatures, marsh grass and red mangrove.

In this process I sent the design concepts to Dr. Volety at FGCU, who is a noted local expert in oysters' habitat. In our subsequent discussion he offered the following comments regarding oyster habitat needs (which agree with our prior discussions):

- A broad range of salinity is OK, but must the salinity must not vary a lot for several weeks. A week or so of lower salinity is survivable.
- Structure, any kind of hard substrate
- Dissolved oxygen not too low
- Phytoplankton, which will be more available closer to the surface. Oysters WILL colonize below the MLW. The limitation on depth is reduced phytoplankton at lower depths.

For the marsh grass design, we anticipated a problem with retaining soil above the riprap. At the seawall the riprap will be submerged in at least a couple of feet of water (at MLW). Any attempt

to retain soil above the riprap, by geo web or whatever, would be damaged by wave action washing away the soil which would then settle in between the rip rap, reducing the space between riprap for marine habitat and not providing a lasting soil area for the marsh grass. We did not see a way to solve this problem, so the design we developed doesn't include the marsh grass idea.

Established mangrove in the riprap shelf could not be removed later without FDEP approval. This could preclude the homeowner's ability to later add dock area along their seawall. We believe this is an unfair restriction on the homeowner, for which there is no precedence. Hence, the design provides for mangrove plantings as an option, at the homeowner's discretion. Over the past few months I've spoken with several Cape residents about mangrove at the seawalls. Those who seemed to be knowledgeable of the mangrove's influence on the ecosystem were interested; those who weren't knowledgeable were not. This supports the value of the public education.

We ended up with a single design concept that we believe will work well for fish, oysters, other creatures, and mangrove. This is provided as the basis of design defining this project (Exhibit 4-6). The estimated cost for an 80 foot seawall based on this revised design is \$15,790, a \$4,440 (39%) increase over the current design.

The language was changed to revise the design standard to require the beneficial habitat, not as an option to the existing design; and to clarify that this applies to new construction north of Pine Island Road.

Previously this effort encompassed the canals subject to Cape Coral permitting and the Cape Coral Engineering Design Standard, which does not include the spreader itself which is subject to FDEP permitting and a different design standard. Working with Jon, this has been changed to include the spreader, and move the pilot demonstration to the spreader.

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### **Storm Water Treatment Improvement**

The extent of construction re-work necessary if the improved catch basins are installed before UEP was evaluated. This re-work is not significant. The number and dimension of the bleeder holes was deleted as design of individual catch basins may need to differ. No other changes were requested or made.

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### **Condition Based Timing for Development of Public Sewer Systems**

The Septic Systems per Acre trigger for area west of Burnt Store Road and South of Kismet Parkway was reduced from 1.96 (~45% development) to 1.53 (~35% development).

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### **Maintain the Cape Coral Canal Dredging Profile**

A statement was added that the City will not seek to increase the permitted depths.

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### **Implement Boating Related Enhancements**

No changes were requested or made.

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### **Coordination to Improve Flows, Timing and Distribution of Water to the State Park and Aquatic Preserve**

This program was moved into this ERP related projects section with some minor wording clarifications.

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### **City of Cape Coral Designated Point of Contact**

This new item was added as requested.

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Also, throughout all items above the timing related statement "Within \_\_ months following the approval of the North Spreader Ecosystem Management Agreement by the Florida Department of Environmental Protection the City shall..." was changed to "Within \_\_ months following Florida Department of Environmental Protection issuance of an Environmental Resources Permit authorizing this program the City shall...". The issuance of the ERP permit is the City's authorization and obligation to proceed.

OC: (NSEMA Section 4 – Cape Coral Considerations Since October Meeting)

C:      Chuck Pavlos, Public Works Director  
          Mark Ridenour, (acting) Project Planning and Construction Manager  
          Mark Lupe, Assistant City Attorney  
          Connie Jarvis, Environmental Resources Manager

Attachments:

1. (none)