North Mala Compra Basin Drainage Improvements

PROJECT STATUS UPDATE

NOVEMBER 19, 2014
EXISTING CONDITIONS

- Comprehensive Computer Model of Entire Drainage System (ICPR)
- All Contributory Areas
  - Marineland Acres
  - Sea Colony
  - Armand Beach
  - Johnson Beach
  - Ocean Hammock
- Both Outfalls
  - A1A & Mosquito Ditch
  - Mala Compra & Bing’s Landing Ditches
- Three Storms
  - Mean Annual - 5.2”
  - 25-Year - 9.9 “
  - 100-Year - 13.0”
COMPARISON TO HISTORICAL FLOODING

- Rollins Drive
Traditional Approach - Summary

- New Outfall for Marineland Acres
- Improvements to Existing Backbone System
Traditional Approach
Bing’s Landing Ditch Impacts

- Currently = 25’± wide
- Proposed = 50’± wide
Traditional Approach
Mala Compra Ditch Impacts

- Currently = 30’ wide
- Proposed = 60’ wide
INNOVATIVE SOLUTION

- Larger New Marineland Acres Outfall
- Re-route Sea Colony & Armand Beach into New Outfall

≈ $2 M Less Cost
≈ Greatly Reduced Construction Impacts
Current Status

• County selected Innovative Solution as Preferred Alternative

• SJRWMD Permit Application submitted Oct 29, 2014
Two Questions:

• What is in it for me?

• What about the septic tank issue?
• There are no areas of chronic (ongoing) septic tank failures.

• Under normal conditions (which is most of the time) the septic tanks in the area function normally.

• It is only under the relatively rare high groundwater conditions caused by prolonged flooding that problems arise.

• These problems are simply a lack of flushing ability, not aboveground leakages or sewage overflows.

• The Armand Beach ditch drains relatively quickly, so the problems there are short duration.

• The Marineland Acres area has longer duration ponding and therefore longer duration problem.
SEPTIC TANK PERMITS
SINCE 1992

INUNDATION AT 36 HRS
EXISTING

ATLANTIC OCEAN
SPECIFICS:

- Armand Beach has a stormwater treatment system.

- Only 13± existing houses are directly adjacent to the ditch.

- Septic problems result from long term ponding.

- Backflow from Armand Beach into Sea Colony ceases 7± hours after end of storm.
RESULTS:

- The proposed improvements reduce both the depth and duration of flooding, and therefore are expected to reduce the septic tank problems.
## Sea Colony - What is in it for me?

### Flood Reduction

<table>
<thead>
<tr>
<th>Location</th>
<th>Peak Stage @ Hour 36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marineland Acres</td>
<td>avg 7”</td>
</tr>
<tr>
<td><strong>Sea Colony Lakes</strong></td>
<td>avg 7”</td>
</tr>
<tr>
<td>Armand Beach Ditch</td>
<td>avg 8”</td>
</tr>
<tr>
<td>Johnson Beach Ditch</td>
<td>avg 3”</td>
</tr>
<tr>
<td>Mala Compra Ditch</td>
<td>avg 1”</td>
</tr>
</tbody>
</table>

### Mean Annual Storm

- **LOWER FLOOD STAGES**
  - Marineland Acres: avg 7”, 11”
  - Sea Colony Lakes: avg 7”, 10”
  - Armand Beach Ditch: avg 8”, 7”
  - Johnson Beach Ditch: avg 3”, 6”
  - Mala Compra Ditch: avg 1”, 5”

- ALLOWS SYSTEM TO HANDLE LARGER STORMS

- INCREASED RELIABILITY OF OUTFALL
SUMMARY

- Eliminated construction Impacts to Bing’s Landing and Mala Compra ditches
- $2 Million Cost Savings over ditch widening
- Lower Flood Stages
- Reduced septic tank problems