Pertaining to stormwater and water quality:

- The first element in the water quality treatment train for the offsite flows would ideally be located offsite in the public right of way (hydrodynamic separators and/or baffle boxes). This would require public/private cooperation and coordination relative to easements and construction permits, as well as potential maintenance obligations.

- Public/private cooperation will be required to facilitate the abandonment of the currently existing onsite reclaimed water pipe and pond.

- Public/private cooperation and coordination will be required to modify the currently existing onsite public drainage easements to reflect and capture the appropriate post-project drainage and conveyance configuration.

- All onsite stormwater BMPs and conveyance systems, including those dedicated to the treatment and conveyance of offsite flows, will be operated and maintained by the HOA as required by the associated ERP permits.

- Water quality treatment will be provided for onsite flows using a holistic stormwater management and site planning approach which meets or exceeds the demanding requirements of the Aquatic Preserve to which it discharges.

- Water quality treatment will be provided for the largely untreated stormwater runoff from the surrounding residential neighborhoods which currently flows to/through the site, comingling with onsite runoff, and discharges to Boca Ciega Bay. A treatment train approach will commence with hydrodynamic separators and/or baffles boxes, localized rain gardens or bioswales, and progress through a wet detention pond with deep pool(s) and littoral zone(s) and potential up-filter system. These ponds, located along the northern and eastern perimeter of the site, will then discharge to a constructed surface conveyance feature which incorporates cascades, shallow pools, and plantings before entering a large sediment sump (which may also serve as a stormwater harvesting pond) before discharging to Boca Ciega Bay.

- The stormwater treatment ponds within the linear stormwater park will incorporate native wetland vegetation – consisting of emergent, submergent and floating aquatic species - in appropriate hydrozones, and native shrubs and trees established on slopes and on bank to the extent possible.

- The BMPs dedicated to the offsite flows will provide greater attenuation, treatment, and conveyance capacity than the currently existing onsite ditches and eutrophic ponds.

- The BMPs dedicated to the offsite flows will slow velocities, keep offsite flows separated from onsite flows, remove sediments and solids, moderate the temperature of the water discharged, and greatly reduce the nutrient and pollutant loads conveyed to Boca Ciega Bay and Millennium Park. Full quantification of the water quality benefits to be achieved will be dependent on final configuration and site constraints but will greatly exceed the “net improvement” standard and may approach ERP requirements.

- The stormwater treatment and conveyance systems will be integrated into the landscape, mimic natural processes, and be both highly functional and aesthetically

pleasing. This will provide educational opportunities to showcase the benefit of holistic site planning and LID/GI methodologies.

- The stormwater treatment systems will greatly enhance/improve the water quality of discharges to Boca Ciega Bay from the site and to/through Millennium Park.

Pertaining to natural habitat, wetlands and wildlife:

- Landscaping: Florida Friendly Landscaping principles, as outlined in The Florida Yards & Neighborhoods Handbook, will be employed on residential lots and within common areas. Only native indigenous trees and shrubs will be utilized in the landscaping and, to the extent possible, native forbs and grasses will be used. Exemptions may include non-native food plants grown in residential areas and turfgrasses used on ponds or in landscapes or on public ROWs (roads). Irrigated turfgrass areas shall be consolidated and limited to residential lawns and those areas on the property that receive pedestrian traffic, provide for recreation use, or provide soil erosion control such as on slopes or in swales, and where turfgrass is used as a design unifier, or other similar practical use. Mulch used in both private and public landscaping should be of sustainable materials such as pine mulch or bark or derived from Eucalyptus or Melaleuca.

- Upland Buffer Adjacent to Wetlands: The site plan will include an upland buffer along the landward edge of the natural mangrove wetlands, as defined by the jurisdictional wetland limits. The buffer will be enhanced to replace existing turf grasses with native vegetation and will include a "bio-swale" to be vegetated with appropriate native plant species. Native vegetation to be planted within the buffer will consist of groundcover, grasses and herbs, and will also include shrubs and trees. A planting plan for the proposed buffer enhancement areas will be prepared by the owner and reviewed by Pinellas County during the site plan approval process. Minimum maintenance standards for the upland buffer (and any proposed wetland enhancement areas) will be developed by the owner and reviewed by Pinellas County during the site plan approval process. The total width of the enhanced buffer, inclusive of the vegetated bio treatment swale, will be 50 feet. The buffer will be designated as a common area owned by the to-be-formed homeowner's association and shall not be owned by individual lot owners.

- Buffer from Boca Ciega Millennium Park: A fifty-foot buffer will be located on the western portion of the project site, adjacent to Boca Ciega Millennium Park. The existing wetlands along the western perimeter will be protected and incorporated into the buffer area, and a swale system will be constructed. The wetlands and swale system will make up the western portion of the buffer area and will also serve as a fire break. The remainder of the buffer area will be vegetated (trees and landscaping) consistent with County code and will include native/non-invasive plantings that both contribute to local wildlife habitat and reduce potential for onsite vegetation to become a nuisance to the Park environment. Minimum maintenance standards for the fifty-foot buffer will be developed by the owner and reviewed by Pinellas County during the site plan approval process. The fifty-foot buffer will be designated as a common area owned by the to-be-formed HOA and shall not be owned by individual lot owners. Guidance for desired plantings can be found in: Xeric Landscaping with Florida Native Plants, (Association of Florida Native

Nurseries). Exterior lighting will be designed to minimize light spillage onto adjacent park and preservation lands. This may be accomplished with directional lighting, hoods, or other accepted lighting design features.

- Onsite Habitat Enhancement: The owner will develop a plan for improvement and expansion of native habitats. The Plan will include elements of exotic/nuisance vegetation removal, natural buffer restoration and enhancement, and native mangrove habitat enhancement. These proposed enhancements will serve to improve the quality and function of existing habitats and will result in improved habitat value for wildlife.

- Mangrove and Tidal Habitat Enhancement: The owner has identified specific opportunities for wetland enhancement such as removal of an historic cart path crossing through a tidal wetland area along the shoreline. In its existing condition, the elevated (filled) cart path bisects a tidal backwater pool area that is surrounded by mangroves. The filled path has essentially interrupted the natural pattern of tidal flushing, resulting in stagnation and very low levels of dissolved oxygen in the isolated area. Removal of the filled path and restoration of pre-disturbance grade elevations will restore the natural tidal pattern, thereby allowing flushing of nutrients and increased levels off dissolved oxygen which will, in turn, provide improved habitat for small fishes, invertebrates and other wildlife.

- Exotic/Nuisance Vegetation Removal: The areas of proposed vegetative and habitat improvements have been estimated, based on preliminary field review and observation, as part of the conceptual site plan development process. Exotic/nuisance vegetative species currently present on the site, with particularly dense colonization along the mangrove shoreline, include Brazilian pepper, carrotwood and Australian pine. Groundcover vegetation up to the natural mangrove shoreline consists primarily of turfgrasses and colonizing weedy species. A more detailed, final plan for exotic vegetation treatment/removal, and enhancement of wetland and upland/buffer habitat will be prepared during the project design and permitting phase. At such time, more detailed and specific field location of exotic/nuisance species colonization (through use of field survey methods), along with development of plans and specifications for the actual habitat enhancements (e.g., specific methods of removal, precautionary measures, species composition, planting schedules, etc.) will be prepared, and will enable calculation of the actual acreages that will be subject to habitat enhancement and creation. Primary targets for enhancement of onsite wetland habitats will be in the vicinity of the southern shoreline and along the western property boundary. Enhancement of mangrove swamp wetlands would likely involve removal of exotic vegetation (e.g., Brazilian pepper, carrotwood, etc.) combined with selective planting of native saltmarsh species and/or mangrove trees. The exact type, location and extent of exotic/nuisance vegetation removal and habitat enhancement will be determined following more detailed site planning, identification of degraded habitats and completion of functional assessments, all of which would be accomplished during the design and permitting phase of the project. The proposed site plan will also provide enhancements to the wetland setback along the southern property boundary. In this area, maintained turfgrass (and more recently colonizing weedy species) that has existed for decades along the edges of mangroves and tidal wetlands will be replaced with native upland and transitional plant species and naturally vegetated

bio-swales. This will result in an improved physical buffer for the natural, tidal wetlands, and will add structural habitat for wildlife utilization, while serving to provide supplemental natural filtering of stormwater runoff into the bay.

- Anticipated Wildlife Utilization: In consideration of the proposed establishment of a linear park and green space around the property perimeter, in combination with proposed additional ponds, filter marshes, native landscaped areas, exotic species removal and habitat enhancement, it is anticipated that the subject property will afford significant opportunities for utilization by various wildlife species. Expansion of stormwater ponds throughout the property will provide increased shorelines and shallow foraging habitat for waterfowl and wading birds, including those species listed as threatened or endangered species. Removal of exotic and invasive vegetation from onsite mangrove swamps and adjacent areas will serve to improve habitat for birds and other wildlife that utilize these habitats for cover and foraging. Similarly, replacement of maintained turfgrass and colonizing weedy species with naturally vegetated buffers along the mangrove shoreline will provide improved wildlife habitat and will aid in wildlife movement along the shoreline. With respect to the identified onsite Osprey nest, because this nest site is located on a dead tree within the proposed development footprint, it is anticipated that it will be necessary to relocate the nest site prior to commencement of site clearing and construction activities. A Migratory Bird Nest Removal Permit can be obtained, in accordance with guidelines published by the Florida Fish and Wildlife Conservation Commission. This permit would allow nest removal and relocation (outside the nesting season) prior to commencement of project clearing and construction. The replacement nest structure is expected to be located in the general vicinity of the original nest site in proximity to the linear park.

Misc. thoughts/items likely covered by others:

- Public access to the onsite trails and parks
- Boat and/or kayak docks
- Removal of invasive species and replacement with native vegetation
- Coastal/shoreline stabilization and/or restoration and preservation
- Creation and preservation of recreation and open space for public use (conservation easement?)
- Appearance from adjacent properties
- Integration of linear perimeter parks and trails with stormwater BMPs for educational and recreational opportunities
- Creation of multiple mini-ecosystems for wildlife (and subsequently wildlife viewing opportunities) via ponds with deep pools and littoral zones, raingardens/bioswales, and created surface conveyance features within park areas

Additional bullet thoughts (BKS):

Environmental Benefits

- Green Space/Linear Park
    - 100+ feet wide, along northern and eastern perimeter
    - Will provide a physical and visual buffer transition to surrounding homes

    - Opportunity for passive recreational use by residents and public
    - Potential pedestrian trail connectivity to Boca Ciega Millenium Park
    - Retain native trees and landscape with Florida friendly species
    - New ponds and wetlands to serve as natural features and wildlife habitat
    - Interpretive educational signage stations/kiosks along trail system

- Removal of Exotic and Invasive Vegetation
    - Enhancement of onsite uplands
    - Enhancement of mangrove swamp wetlands
    - Selective planting of native upland and wetland plant species
    - Improved wildlife habitat and aesthetic value

- Enhancement of Wetland Setbacks and Buffers
    - Replace maintained turf grass & weeds with native vegetation
    - Improve physical buffer for existing tidal wetlands and mangrove swamp
    - Add structural habitat for wildlife utilization
    - Supplemental natural filtering of stormwater runoff

<u>Water Quality Benefits – Help Improve Water Quality in Boca Ciega Bay</u>

- Removal of Pollutants from Offsite Stormwater Runoff (see details by Mike Peck)
    - Proposed new stormwater ponds will treat runoff from surrounding neighborhoods
    - Largely untreated in existing condition
    - Potential to remove approximately 350 lbs/year of Nitrogen (>7 tons over 40 years) Note: these #s based on previous calculations… need to verify or remove
    - Potential to remove approximately 115 lbs/year of Phosphorous
    - Treatment of other offsite areas also possible with proposed system

- Remove Existing onsite (golf course) Ponds
    - Get rid of pollutant-laden sediments accumulated over 40+ years
- New Stormwater Ponds to be Designed in Conformance with Current Regulations
    - Higher standards for treatment and pollutant removal
    - Subject to required regular maintenance and upkeep
    - Must provide 1.5 times typical level of treatment (Outstanding Florida Water)
    - Entire development area will be subject to treatment requirements

- Discontinue Unregulated Fertilizer Use
    - Re-developed community will comply with current County fertilizer code