Conserve Nassau

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Tree Protection Considerations for Site Development

Challenges we are all facing:

- Overdevelopment of Amelia Island is threatening our sustainability (economic, environmental and social) and resilience. And there is a high level of pressure to increase density. In some parts of the island, we have entirely too much impervious surface and a dramatically reduced canopy. This contributes to heat island effect, flooding, erosion, saltwater intrusion and lack of protection from storm winds. Based on the storm experiences of other coastal areas in Florida, we should understand the implications of not managing this effectively and the urgency to do so.
- At this point in time, we should be well aware of predictions for sea level rise, warming and changes in climatic conditions. We need to prepare to maximize our sustainability and resilience. Both the City and County have made some progress on this in CRS participation, vulnerability studies, storm water management, departmental restructuring/communication, etc. Maintaining a good pace on these efforts is important because delay will be extraordinarily costly, for individuals as well as for cities and counties (there has been considerable research on this).
- Recent state laws elevating property rights protection seem to have slowed progress on addressing the challenges above. These laws seem to protect only those who are developing property, while they fail to protect others impacted by the development or even the welfare or future of the community at large. We need effective approaches to managing these issues.

Recommended tree protection considerations in site development:

- Avoid clearing parcels in preliminary stage; clear only the minimum understory. Maintaining understory is critical for long-term tree survival and soil quality.
- Avoid grade changes wherever possible. LID techniques and other alternatives should be considered and utilized to avoid or minimize grading in order to maintain mature trees and understory.
- Conservation site design can be a helpful strategy for maintaining functional canopy:
    - Determine what ecological services are provided by the site.
    - Preserve those services to the extent possible.
    - Study water flows so that they can be maintained and utilized when feasible.
    - Replace the services that cannot be preserved.

    - Services include but are not limited to windbreak, groundwater storage and infiltration, carbon storage, flood routing, air quality, barrier to aerosolized salt and energy dissipation.
- Environmental assessment should be the first phase in the process:
    - Identify wildlife habitat & corridors
    - Identify the nature of the ecological niche(s) & flora & fauna observed. Look around to see what is living on this site successfully.
    - Test soil types and composition, water table depths and composition, and saltwater intrusion. We need to study and clearly understand the relationship between our development, sea level rise and changes in climate if we are to plan effectively.
    - Conduct the currently required tree inventory.
- We need representatives on the Development Review Committee and the Technical Review Committee who have expertise on trees, ecology and storm water management.
- We also need sufficient departmental staffing with expertise on trees, ecology and storm water management to ensure sustainability and resilience.
- To the extent possible, we must minimize impervious surface. It matters to the sustainability and resilience of the island, as well as quality of life issues.
- Maintain buffers between any construction and wetland/potential wetland (ideally 50') and between any construction and bodies of water (creeks, rivers, ocean) (ideally 100').
- We must disallow construction in floodplains, in or near wetlands and near bodies of water.
- Make all efforts to retain mature trees. We need to **maximize** retention rates. Planting replacements is not the same. It requires a newly planted tree well over 60 years to provide any of the significant benefits of a mature tree.
- When possible, plant trees in clusters with native understory to strengthen them. This does not mean on top of each other, but planning for them to be able to work together when mature (so their canopies can work together to usher storm winds above our homes and manage storm water and so that their root structures can work together, which they naturally do).
- Sources of new trees matter. Trees from further south tend not to survive well here. Trees from other regions do not necessarily have resistance to the environmental context here or appropriate genetic makeup for our context.
- The Tree Protection Zone requirements we currently have should be maintained. Roots must be protected from compaction (the most common cause of tree death in our country) and other damage.
- Root protection should consider the non-symmetrical shape of the root system caused by constraints such as adjacent pavement, buildings, and soil compaction.
- Dewatering should be disallowed. It can easily damage roots by drying out the soil and kill trees. It may also elicit saltwater intrusion; we don't know enough about this.

- Any developer or builder developing a property in the Holocene dunes must document that they have sufficient expertise to operate in that environment. The impact of damage may extend beyond the property to the broader community.
- Handling of trees and understory in the maritime hammock requires specialized tree expertise. Because of the impact of the intense salt aerosol and winds in their environment, these trees develop closed canopies to prevent salt aerosol from reaching the undersides of their leaves. Once salt aerosol is allowed in, these trees will gradually die.
- Inspection and enforcement are critical. We have found that many contractors here consider City and County regulations to be irrelevant and unimportant.