

CHAPTER 167 ENVIRONMENTAL REGULATIONS**167.01 WETLANDS****(A) Purpose and Intent.**

- (1) Whereas, pursuant to Chapter 373, Florida Statutes (F.S.), wetlands and surface waters are protected because they often serve as spawning, nursery and feeding habitats for many species such as fish and wildlife; and because they often provide important flood storage, detrital production, nutrient cycling, navigation and recreation and water quality functions;
- (2) Whereas, a wide array of biological, physical and chemical factors affect the functions of wetlands and surface water systems such as streams, rivers and estuaries, the State of Florida has declared the maintenance of water quality standards in wetlands and other surface water systems to be critical in sustaining their many functions;
- (3) Whereas, the State of Florida has declared the Indian River Lagoon as a priority water body in need of restoration and special protection, and has established a goal to attain and maintain the water and sediment quality needed to support a macrophyte-based (seagrass) system, endangered and threatened species, fisheries and recreation in the lagoon;
- (4) Whereas, protection of littoral and wetland vegetation along the Indian River Lagoon shoreline prevents soil erosion, reduces turbidity levels detrimental to water quality and protects life and property from potential flood waters; and
- (5) Whereas, protection and maintenance of wetlands in Indian River Shores supports Federal and State goals to achieve no net loss of wetlands as well as to create and restore wetlands to increase the quantity and quality of the wetland resource base.
- (6) Therefore, the Town shall work in concert with State and Federal regulatory agencies having jurisdiction to implement protection standards that preserve wetlands and associated adjacent uplands; and when a State agency having jurisdiction deems mitigation appropriate for compensating a project impact, the Town shall coordinate with the State agency to assure that the overall mitigation complies with the "no net loss" State policy.

(B) Definitions and Abbreviations

DEP. The Florida Department of Environmental Protection.

Development. The construction, installation, demolition or removal of a structure, impervious surface or drainage facility; clearing, scraping, grubbing, killing or otherwise removing vegetation; adding, removing, exposing, excavating, leveling, grading, digging, furrowing, dumping, piling, filling, dredging or otherwise significantly disturbing or altering soil, mud, sand or rock; or the modification or redevelopment of a site. Development may include, but is not limited to, carrying out of any building or mining activity, the making of any material change in the use or appearance of any structure or land or the dividing of land into two (2) or more parcels. The following activities shall be construed to involve development:

- (1) Reconstruction, alteration of the size or material change in the external appearance of a structure;
- (2) Change in land use intensity, such as an increase in the number of units in a structure or on the land;
- (3) Alteration of a shore or bank of a seacoast, river, stream, lake, pond or canal;
- (4) Alteration of the land or vegetation in a floodplain or flood prone area;
- (5) Dredging, drilling, except to obtain soil samples, mining or excavation on land;
- (6) Demolition of a structure;
- (7) Clearing of land; and
- (8) Deposit of refuse, solid or liquid waste or fill on land.

The term "development" includes all other development customarily associated with it, unless otherwise specified. When appropriate to the context, development refers to the act of developing or to the result of development. Reference to particular activities is not intended to limit the generality of the term "development."

District. The St. Johns River Water Management District.

Dredging. Excavation by any means in surface waters or wetlands, as delineated in subsection 373.421(1), F.S. Excavation also means the excavation or creation of a water body which is, or is to be, connected to surface waters or wetlands as delineated in subsection 373.421(1), F.S. directly or via an excavated water body or series of water bodies (subsection 373.403(13), F.S.).

Ecological Value. The value of functions performed by uplands, wetlands and other surface waters to the abundance, diversity, and habitats of fish, wildlife and listed species. These functions include, but are not limited to, providing cover and refuge; breeding, nesting, denning and nursery areas; corridors for wildlife movement; food chain support; and natural water storage, natural flow attenuation, and water quality improvement, which enhances fish, wildlife and listed species utilization. (subsection 373.403(18), F.S.)

Endangered Species. Those animal species which are listed in section 39-27.003, F.A.C., and those plant species which are listed as endangered in 50 Code of Federal Regulations 17.12.

Enhancement. Improving the ecological value of wetlands, other surface waters or uplands that have been degraded in comparison to their historic condition.

Estuary. A semi-enclosed, naturally existing coastal body of water which has a free connection with the open sea and within which seawater is measurably diluted with fresh water derived from riverine systems (subsection 373.403(15), F.S.).

Existing Nesting or Denning. An upland site which is currently being used for nesting or denning, or is expected, based on reasonable scientific judgment, to be used for such purposes based on past nesting or denning at the site.

FFWCC. The Florida Fish and Wildlife Conservation Commission.

Filling. The deposition, by any means, of materials in surface waters or wetlands, as delineated in F.S. §373.421(1), [as defined in F.S. §373.403(14)].

Hydrologically Sensitive Area. Wetlands and those geographical areas which are specifically designated as hydrologically sensitive areas by the agency having jurisdiction because of the importance of the hydrology and hydraulics of the area in meeting the Legislative policy contained in F.S. §373.016.

Hydroperiod. The period of inundation of a wetland. Communities with long hydroperiods are most viable and wetlands with this characteristic may receive wastes and runoff from urban lands since they have greater potential for year-round nutrient uptake.

Impervious. Land surfaces which do not allow, or minimally allow, the penetration of water; included as examples are building roofs, normal concrete and asphalt pavements and some fine grained soils such as clays.

Lagoon. A naturally existing coastal zone depression which is below mean highwater and which has permanent or ephemeral communications with the sea, but which is protected from the sea by some type of naturally existing barrier as defined in F.S. §373.403(16).

Listed Species. Those animal species which are endangered, threatened or of special concern as designated pursuant to F.A.C. 68A-27.0001, et seq., and those plant species listed in 50 Code of Federal Regulation 17.12 when such plants are found to be located in a wetland or other surface water.

Mitigation. An action or series of actions to offset the adverse impacts that would otherwise cause a development to fail to meet the SJRWMD criteria. Mitigation usually consists of restoration, enhancement, creation, preservation or a combination thereof.

Preservation. The protection of wetlands, other surface waters or uplands from adverse impacts by placing a conservation easement or other comparable land use restriction over the property, or by donation of fee simple interest in the property.

SJRWMD. The St. Johns River Water Management District.

State Agency. For purposes of this Section 167.01, means the St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection (DEP) or other successor agency of the State of Florida delegated authority to administer, enforce or implement State environmental regulations, administrative code or laws.

Stormwater Management System. A system which is designed and constructed or implemented to control discharges which

are necessitated by rainfall events, incorporating methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, overdrainage, environmental degradation and water pollution or otherwise affect the quantity and quality of discharges from the system as defined in F.S. §373.403(10).

Submerged Lands. For purposes of this Section 167.01, means lands beneath tidally-influenced waters associated with the Indian River Lagoon including but not limited to tidal lands, shallow banks and lands waterward of the mean high water line of the Indian River Lagoon.

Surface Water Management System or System. A stormwater management system, dam, impoundment, reservoir, appurtenant work, or works, or any combination thereof. The terms "surface water management system" or "system" include areas of dredging or filling, as those terms are defined in F.S. §373.403(13) and 373.403(14).

Threatened Species. Those animal species which are listed as threatened as designated pursuant to F.A.C. 68A-27.0001, et seq., and those plant species which are listed as threatened in 50 Code of Federal Regulations 17.12.

Tidal Wetlands. Wetlands hydrologically connected to the Indian River Lagoon.

Uplands. Land that is not "submerged land" and is not a "wetland" as defined herein.

USFWS. The US Fish and Wildlife Service.

Wetlands. Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto, as defined in F.S. §373.019(17). The landward extent of wetlands is delineated pursuant to Chapter 17-340, F.A.C., as ratified by F.S. §373.4211.

Wetland Delineation. The line demarcating a wetland/upland interface.

Wetland Impact. Any removal, destruction or alteration of vegetation or the excavation of wetland soils.

(C) **Unified Statewide Methodology for Wetland Delineation.** The methodology used to delineate the landward extent of regulated wetlands and surface waters shall follow the unified statewide methodology set forth in the Florida Administrative Code and Florida Statutes. The applicant shall file a wetlands assessment report responsive to the State's unified methodology for wetland delineation, impact assessment and possible mitigation strategy. The report shall also address the impacts of the proposed development based on criteria identified in sub-sections 167.01(G-I) of this Ordinance.

(1) **Wetland Delineation Determination.** At any time in which the Town suspects that wetlands may be present on a site based on soil or vegetation, the applicant must obtain formal wetland delineation or a letter in which the State agency determines that wetlands are not present. An applicant for development potentially impacting wetlands shall submit a site plan and conditional use approval application to the Town and the applicant shall concurrently commence coordination with the St. Johns River Water Management District (SJRWMD) and any other public agency having jurisdiction over the potentially impacted wetlands. The applicant shall ensure that the Town Manager receives a copy of all formal communications with such agencies in an expeditious manner.

Similarly, the applicant shall provide the Town Manager a copy of all reports and information submitted to an agency having jurisdiction, especially the initial correspondence requesting such agency to initiate or conduct a formal review as well as determination and/or recommendations and conditions documented by the agencies having jurisdiction.

(2) **Town Review and Administration.** Development review of any plan potentially impacting wetlands shall direct highest priority to the continued preservation and enhancement of the physical and biological functions of wetlands. The Town shall be bound in such wetland preservation actions to preserving reasonable development rights as opposed to highest and best use or the most economically beneficial use of the land. This policy is predicated on the Town's adopted Comprehensive Plan, the State of Florida's coastal management legislation (F.S. Ch. 163, Part II) and State statutes, including, but not limited to the State of Florida's Water Resource Plan (F.S. Ch. 373) and administrative rules, including, but not limited to F.A.C. Ch. 62 and Ch. 40C, FAC, as may be amended.

- (a) **Investigation and Wetland Boundary Determinations:**
- (i) The Town Building Official shall forward all applications for rezoning and/or development potentially impacting a wetland to the Town Manager. Upon receipt of the applicant's technical data, the Town Manager or designee shall review the development pursuant to the Town's Land Development Code, including wetland boundaries and wetland impacts and coordinate the same with the applicant. The applicant shall ensure that SJRWMD communications regarding wetland delineation and impact assessment are delivered to the Town expeditiously in order to facilitate the resolution of issues impacting field investigations, wetland boundary delineations and wetland impacts, including wetland buffers and planned upland improvements. The intent is that the analysis of wetlands by the Town and the SJRWMD occur concurrently and that the Town review the findings of the St. Johns River Water Management District (SJRWMD) and any other agencies having jurisdiction and coordinate issues of mutual concern.
 - (ii) The Town Manager or designee shall coordinate resolution of wetland issues with other public agencies having jurisdiction in the impacted area in order to resolve issues surrounding disputed boundaries as well as any disputed results of wetland assessments, needed site plan or preliminary plat revisions, and potential mitigation strategies. The Town staff shall incorporate recommendations of the Town and the SJRWMD regarding any such issues into its technical development review and submit the same to the Planning, Zoning and Variance Board. The Town Council shall render final decisions on site plans, including wetland issues, based on recommendation of the Planning, Zoning and Variance Board and consideration of technical findings.
- (b) **Wetland Management Determinations and Development Stipulations:**
- (i) **Technical Report and Coordination with Agencies Having Jurisdiction.** The Town Manager or designee shall coordinate technical issues concerning wetland development petitions or requests for exceptions based on information provided by the applicant, public agencies having jurisdiction over the wetlands and findings and recommendations of the Town's consultant as appropriate. Where a proposed land use or development activity is deemed appropriate, the technical report shall stipulate recommended conditions necessary to preserve the function of wetlands. Such stipulated conditions shall be predicated on consideration of the developer's application and supportive technical analysis and shall reflect the consideration of performance standards and criteria cited in this Chapter.
 - (ii) **Conditions and Limitations.** The Town Council may place conditions on any exception or development approval as herein provided including, but not limited to, required mitigation and the dedication of a conservation easement to the Town in order to assure that wetlands are perpetually preserved and conserved. Wetlands shall be subject to all applicable land development regulations of the Federal and State permitting agencies as well as regulations contained in the Town of Indian River Shores Comprehensive Plan and Code of Ordinances.
 - (iii) **Disputes, Appeals and Reconciliation.** The applicant shall submit a copy of the SJRWMD Letter of Determination within ten (10) days of its issuance. Upon the Town's receipt of the State's formal wetland delineation and impact assessment, including any proposed mitigation strategy, the Town Council will accept or appeal the State agency's formal wetland delineation determination, site plan assessment and mitigation strategy, if any. If the Town Council appeals the State agency's formal determination, the basis for the appeal shall be based on the review and written comment submitted by the Town's environmental expert, who shall be a professional environmental engineer, limnologist, soil scientist or biologist with demonstrated experience in protecting the physical and biological functions of wetlands from potential adverse impacts of development.
- Upon the Town Council's decision to appeal a formal wetland delineation impact assessment, including any proposed mitigation strategy occurring pursuant to Section 167.01(I)(3) herein, the Town Manager shall submit a written appeal to the State agency in the time prescribed by law. Review of a development order or permit application for property containing or abutting wetlands shall not commence until conclusion of the appeal process.
- (D) **Wetlands Development Restricted and Buffer Required.** Development in or on wetlands is prohibited except for projects compliant with the provisions of this Section 167.01, including compliance with permitting requirements of State and Federal agencies having jurisdiction, which shall be demonstrated by duly issued permits from such agencies. The Town shall require that tidal wetlands be protected by requiring upland buffers with a minimum width of twenty-five (25) feet. The Town may

require an increase in such specifications on a case by case basis if, after considering recommendations of the Town staff and/or biologist, hydrologist, soil scientist or other similar environmental expert knowledgeable in coastal wetland ecosystems and associated hydrology, the Town Council determines that an increased buffer is required to protect a particular habitat, wetland and/or water resources against potential adverse impacts.

- (1) **Wetland Density Transfers.** The Town Comprehensive Plan assigns a density of one (1) unit per five (5) acres to wetlands whose location and extent are determined and confirmed by a State agency. Density may be transferred from a wetland (“sending area”) to a contiguous upland under unity of title (“receiving area”). The upland “receiving area” shall not be separated from the wetland “sending area” by submerged land, public land (including rights-of-way) or any other land that is not under unity of title. No density credits shall be assigned to submerged land. The maximum density within the receiving upland shall not exceed one and a half (1 1/2) times the density delineated on the Future Land Use Map. A proposed plan involving any density transfer shall demonstrate compatibility with development within two hundred (200) feet of the perimeter of the subject site; shall be compliant with all applicable rules and regulations of the Federal government, State and the Town including, but not limited to, site plan review considerations, availability of infrastructure and preservation of adjacent environmentally sensitive areas; and shall require approval as a conditional use including compliance with conditional use criteria stated herein.
- (2) **Character of Wetland Buffer; Conservation Easement.** Buffers shall remain in an undisturbed condition, except for drainage features such as spreader swales and discharge structures, provided the construction or use of these features does not adversely impact wetlands. Existing vegetation within the upland buffer shall be preserved and no turf or ornamental grass species shall be allowed. Within required vegetative buffers any exotic species as specified in Section 163.04 (D) shall be removed and replaced with native ground and understory species and native trees species approved by the Town Council. A vegetated berm, swale or other approved run-off control device shall be installed on the upland side of the buffer. No impervious surface shall be permitted therein. Prior to issuance of a certificate of occupancy, a conservation easement shall be submitted to the Town and recorded with the Clerk of the Circuit Court for all remaining wetland areas within the subject lot.
- (3) **Exemptions.** The following are exempt from the provisions of Section 167.01:
 - (a) Any development, construction or use initiated according to any valid building permit or site plan development order issued or approved by the Town of Indian River Shores prior to the original effective date of this Ordinance;
 - (b) Any public works or utilities projects initiated by the Town to provide utility services or access to public property;
 - (c) Mosquito control conducted by the Town of Indian River Shores or the Indian River County Mosquito Control District;
 - (d) Construction of public nature trails or raised boardwalks on publicly-owned property;
 - (e) The reestablishment of native vegetation within publicly-owned property; and
 - (f) Maintenance and management of stormwater management facilities and mitigation projects duly permitted by the Town and State or Federal agencies having jurisdiction.

(E) Development Restrictions in Submerged Lands.

- (1) **Filling Prohibited.** Placement of fill material in or on submerged lands is prohibited except for the following circumstances:
 - (a) Improvements to existing public roads or rights-of-way.
 - (b) Shoreline protection infrastructure approved by the Town Council and the U.S. Corps of Engineers.
 - (c) Spoil islands associated with dredging activities within navigable waters of the Indian River Lagoon, as authorized by the US Corps of Engineers.
- (2) **Permitted Structures.** The following structures shall be permitted within or above submerged lands subject to compliance with applicable provisions of the Town’s Land Development Code and issuance of permits from applicable State agencies: boat docks, raised boardwalks or piers.

- (F) Town Review of Development Plans.** As part of the development review process during review of the preliminary plat or site plan as appropriate, the Town shall coordinate its review of development adjacent to the Indian River Lagoon and/or wetlands

with State and Federal agencies having jurisdiction over development impacts to wetlands, including the submerged land, habitat and surface waters, including the SJRWMD, DEP and the FFWCC. The common objective shall be to protect and conserve the beneficial functions of these resources. At the time an applicant submits an application for permit approval by a State or Federal agency having jurisdiction over a proposed development impacting wetlands, habitat, surface water management systems or submerged lands within the Town limits, the applicant shall concurrently file a copy of such application, including all supportive narrative and graphic information, with the Town Manager. The applicant shall submit to the Town Manager all subsequent updates and/or revisions to applications as well as documents pertaining to predispositions, conditions and actions of the agencies having jurisdiction.

- (G) **Procedure for Evaluating Permit Applications.** The procedure for evaluating development with potential wetland impacts commences with a determination of whether the proposed development yields no net adverse impacts to wetlands, habitat and water quality. Secondly, if the development is found to have adverse wetland impacts a determination shall be made regarding whether the adverse impacts to the wetland system, water quality, unique habitats and other factors surrounding the public interest can be eliminated or reduced by revisions to the applicant's plans. Thirdly, if any adverse impacts which remain after practicable design modifications have been made, the adverse impacts must be mitigated.
- (H) **Criteria Applied in Determining "No Net Adverse Impacts."** As part of the development review process, during review of the preliminary plat or site plan as appropriate, the applicant shall provide reasonable assurances that the proposed development will not impact the values of wetland and other surface water functions so as to cause adverse impacts to fish, wildlife and listed species, including their abundance, diversity and their habitat. Where habitats for listed species are present, the applicant may be required to provide a wildlife survey of listed species and provide information regarding site characteristics, the range and habitat needs of listed species potentially impacted, and whether the proposed development will adversely impact the listed species, including their habitat. Survey methodologies employed to inventory the site must provide reasonable assurances regarding the presence or absence of the subject listed species. When assessing the value of functions that any wetland or other surface water provides to fish, wildlife and listed species, the applicant shall consider the following factors:
- (1) **Condition.** Whether the wetland or other surface water is in a high quality state or has been the subject of past alterations in hydrology, water quality or vegetative composition;
 - (2) **Hydrologic Connection.** The nature and degree of offsite connection that may benefit off-site water resources through detrital export, base flow maintenance, water quality enhancement or the provision of nursery habitat;
 - (3) **Location and Uniqueness.** The location and relative rarity of the wetland or other surface water and its floral and faunal components in relation to the surrounding regional landscape;
 - (4) **Fish and Wildlife Utilization.** Use of the wetland for resting, feeding, breeding, nesting or denning by fish and wildlife, particularly those which are listed species; and
 - (5) **Water Quantity Impacts on Established Hydroperiod.** The applicant must provide reasonable assurance that the development will not change the hydroperiod of a wetland and water resources so as to adversely affect wetland functions or other surface water functions to include the following as applicable:
 - (a) Whenever portions of a system, such as constructed basins, structures, stormwater ponds, canals, and ditches, could have the effect of reducing the depth, duration or frequency of inundation or saturation in a wetland or other surface water, the applicant must perform an analysis of the drawdown in water levels or diversion of water flows resulting from such activities and provide reasonable assurance that these drawdowns or diversions will not adversely impact the functions that wetlands and other surface waters provide to fish and wildlife and listed species.
 - (b) Increasing the depth, duration or frequency of inundation through changing the rate or method of discharge of water to wetlands or other surface waters or by impounding water in wetlands or other surface waters must also be addressed to prevent adverse effects to functions that wetlands and other surface waters provide to fish and wildlife and listed species. Different types of wetlands respond differently to increased depth, duration or frequency of inundation. Therefore, the applicant must provide reasonable assurance that activities that have the potential to increase discharge or water levels will not adversely affect the functioning of the specific wetland or other surface water subject to the increased discharge or water level.
 - (c) Whenever portions of a system could have the effect of altering water levels in wetlands or other surface waters, applicants shall be required to monitor the wetland or other surface waters to demonstrate that such alteration has not resulted in adverse impacts; or calibrate the system to prevent adverse impacts. Monitoring parameters, methods, schedules and reporting requirements shall be specified in permit conditions.

- (6) **Public Interest Considerations.** If the development is anticipated to significantly degrade, the applicant must provide assurances that the activity is clearly in the public interest by demonstrating that the positive impacts significantly outweigh the negative impacts, including:
- (a) Whether the development will adversely affect the public health, safety or welfare or the property of others;
 - (b) Whether the development will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats;
 - (c) Whether the development will adversely affect navigation or flow of water or cause harmful erosion or shoaling;
 - (d) Whether the development will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity;
 - (e) Whether the development will be of a temporary or permanent nature;
 - (f) Whether the development will adversely affect or will enhance significant historical and archaeological resources; and
 - (g) The current condition and relative value of functions being performed by areas affected by the proposed development.
- (7) **Evaluate Impacts to Quality of Receiving Waters.** The applicant must provide assurances that the short and long term impacts of the proposed development will not adversely affect the quality of receiving waters and demonstrate compliance with applicable State water quality standards. Reasonable assurances regarding water quality must be provided both for the short term and the long term, addressing the proposed construction, alteration, operation, maintenance, removal and abandonment of the system.
- (8) **Assess Secondary Impacts to Water Resources.** The applicant must demonstrate that the proposed development will not cause adverse secondary impacts to the water resources. The Town may require above minimum standard buffers in order to ensure that secondary impacts to the habitat functions of wetlands are protected, especially habitat for listed species.
- (9) **Consider Cumulative Impacts.** A development shall not cause unacceptable cumulative impacts upon wetlands and other surface waters. Cumulative impacts are considered unacceptable when the proposed development, considered in conjunction with the past, present and future development activities, is anticipated to result in a violation of State water quality standards or cause significant adverse impacts to functions of wetlands and water resources.
- (I) **Uniform Mitigation Methodology.** If adverse wetland impacts cannot be eliminated by adjustments to the plan, the adverse wetland impacts must be appropriately mitigated. Standards to determine the amount of mitigation needed to offset adverse impacts to wetlands shall follow the uniform mitigation assessment method established in Florida Statutes and Florida Administrative Codes. Applicants are encouraged to consult with SJRWMD staff in pre-application conferences and involve the Town Manager or designee to identify appropriate mitigation options. The Town shall require that any off-site mitigation occurs within the Town's municipal limits unless the applicant in concert with the District demonstrates to the Town's satisfaction that no combination of sites meeting the State mitigation requirements exist within the Town. In the latter case, the Town's preference shall be that the mitigation occur on a site within Indian River County that lies within the Town's regional watershed and that such off-site mitigation would improve and/or protect water quality of the Indian River and meet District mitigation requirements.
- (1) **Wetland Mitigation Assessment.** Any property owner, developer or entity proposing to adversely impact a wetland (hereinafter "applicant") shall prepare a wetland mitigation assessment report. The report shall be prepared in written and illustrative form and shall comply with the State's uniform mitigation assessment methodology as set forth in Florida Statutes and Florida Administrative Codes. If the proposed mitigation site is not located within the Town, the applicant must provide written documentation demonstrating why a mitigation site located within the Town limits could not be obtained.
 - (2) **Use of Experts for Wetland Assessment.** Wetland mitigation assessments shall be performed by a professional specializing in biology, hydrology, soil science or related environmental expert knowledgeable in coastal wetland ecosystems and associated hydrology. A development applicant or property owner is responsible for retaining an environmental expert at the applicant's own expense to perform the required wetland mitigation assessment.

- (3) **Review of Wetland Mitigation Assessment.** The wetland mitigation assessment report shall be submitted to the Town Manager. The Town shall retain the services of a professional biologist, hydrologist, soil scientist or other similar environmental expert knowledgeable in coastal wetland ecosystems and associated hydrology (hereinafter “environmental expert”). Upon review of the wetland mitigation assessment report for consistency and compliance with the State’s uniform mitigation assessment methodology, the Town’s environmental expert shall prepare and submit written recommendations to the Town Manager recommending that the Town Council deny, accept or accept with conditions appropriate wetland mitigation. The cost to the Town for the services of its environmental expert shall be borne by the applicant. Prior to the hiring of the environmental expert, the Town Manager may require a deposit from the applicant to pay for the services of the environmental expert.
 - (4) **Reconciliation and Consistency with State Agency Wetland Mitigation Requirements.** If the State agency requires a greater amount of mitigation than that required by the Town of Indian River Shores, the amount required by State agency shall apply. If mitigation requirements imposed by the Town for wetland impacts of an activity regulated under this Section 167.01 cannot be reconciled with mitigation requirements approved under a permit for the same activity issued by the State agency, the State agency mitigation requirements shall be followed.
 - (5) **Monitoring Requirements for Mitigation Areas.** Applicants shall monitor the progress of mitigation areas until success can be demonstrated. Mitigation success will be measured in terms of whether the objectives of the mitigation can be realized. The success criteria to be included in permit conditions will specify the minimum requirements necessary to attain a determination of success. The mitigation shall be deemed successful when all applicable water quality standards are met, the mitigation area has achieved viable and sustainable ecological and hydrological functions and the specific success criteria contained in the permit are met. If success is not achieved within the time frame specified within the permit, remedial measures shall be required. Monitoring and maintenance requirements shall remain in effect until success is achieved.
- (J) **Permitted Uses in Wetlands.** The uses identified below shall be permitted within tidal or non-tidal wetlands denoted on a duly approved site plan; however, all physical improvement must have been included in the approved site plan submitted pursuant to Chapter 168 of the Town’s Land Development Code, regardless of the zoning district. In addition, the application shall demonstrate compliance with applicable Federal, State and local regulations. Zoning district provisions shall govern permitted uses on converted uplands denoted on a duly approved site plan, including receipt of required permit approvals by other agencies having jurisdiction over wetland issues. These Federal, State and local approvals must be granted before any site work begins:
- (1) Passive recreation;
 - (2) Elevated boardwalks (non-covered) used to reach duly approved boat docks within the Indian River Lagoon or its tributaries, provided that such boardwalks shall not be wider than four (4) feet;
 - (3) Open space;
 - (4) Restricted access ways for essential public service;
 - (5) Bird sanctuary; and
 - (6) Accessory uses to the above.
- (K) **Conditional Uses.** Any development having a potential impact on wetlands shall require conditional use approval, including compliance with conditional use criteria stated herein. Conditional use review procedures shall be the same as for site plan review. A proposed conditional use must demonstrate compliance with the following conditional use criteria which shall be applied by the Town to determine whether a proposed conditional use is suitable for the site and whether it is appropriately designed to avoid potential land use incompatibility as well as potential adverse impacts. The criteria shall be used to achieve smooth transition in land use including density, intensity, appearance, size, height, mass and design amenities. The intent is to ensure that conditional uses shall only be permitted on specific sites where the proposed use may be adequately accommodated without generating adverse impacts on properties and land uses within the immediate vicinity. The use must be compatible with the character of the surrounding area. The specific site shall have sufficient land area to accommodate the proposed type of use including its scale, mass, density and/or intensity, as well as requisite project amenities, infrastructure, parking and internal vehicular and pedestrian circulation; provide adequate screening and buffering; and avoid or successfully mitigate adverse environmental conditions, nuisance impacts and other adverse impacts. A proposed conditional use shall only be considered if a site plan is submitted and is demonstrated to comply with site plan review criteria established in Chapter 168 of the Town’s Land Development Code, “Development Review Procedures,” as with Chapter 166 of the Town’s Land Development Code, “Subdivisions,” if subdivision of land is proposed. All conditional uses shall be reviewed based on criteria established herein and within respective zoning districts. The use must be found to comply with the following:

- (1) **Traffic Generation and Access.** Traffic generation and access for the proposed use shall not adversely impact adjoining properties and the general public safety and shall meet concurrency management level of service standards;
- (2) **Off-Street Parking, Loading and Service Areas.** Off-street parking, loading and service areas shall meet zoning district standards and shall be landscaped and buffered based on standards of the Town's Land Development Code;
- (3) **Required Yards, Screening or Buffering and Landscaping.** Required yards, screening or buffering and landscaping shall be consistent with the district regulations, and the Town shall reserve the right to require more restrictive buffers and landscaping to mitigate potential adverse impacts. If the Town determines that buffers and landscaping cannot mitigate the potential adverse impacts, the conditional use shall be denied;
- (4) **Architecture and Signage.** The character of architectural and signage improvements shall have a unified theme and shall incorporate decorative features and harmonious colors and scale;
- (5) **Size, Location or Number of Conditional Uses.** Size, location or number of conditional uses in an area shall be limited so as to maintain the overall character of the district in which said conditional uses are located;
- (6) **Factors Impacting Scale and Intensity of Conditional Uses.** The size and shape of the site, the proposed access and internal circulation and the urban design enhancements must be determined by the Town to be adequate to accommodate the proposed scale and intensity of conditional use requested. The site shall be of sufficient size to accommodate urban design amenities such as screening, buffers, landscaping, open space, off-street parking, efficient internal traffic circulation, infrastructure and similar site plan improvements needed to mitigate potential adverse impacts of the proposed use including its design, mass, height and scale;
- (7) **Avoid Adverse Impacts to Adjacent Land Uses.** The applicant shall demonstrate that the conditional use shall incorporate mitigative techniques needed to prevent adverse impacts to adjacent land uses and public facilities;
- (8) **Compatibility.** Development proposed as a conditional use shall be reviewed for land use compatibility based on compliance with zoning district regulations, including size and dimension regulations impacting setbacks, lot coverage, height, building mass, lot and/or building coverage and open space criteria. Land use compatibility also shall be measured by design attributes such as screening and buffering; lot layout and orientation of structures; architectural features such as façade elevations, façade landscaping, fenestration, building articulation, pedestrian access and circulation; internal vehicular circulation together with access and egress to the site, and off-street parking; as well as possible required mitigative measures such as additional landscaping, buffering and other site design amenities deemed necessary by the Town to avoid land use incompatibility or negative impacts; and
- (9) **Outdoor Lighting Spill-Over Regulated.** Outdoor lighting shall have no spillover onto adjacent property or rights-of-way beyond the building site property line and the lumens shall not exceed two (2) foot candles at the property line. Buildings over three (3) stories shall submit a lighting plan indicating all outdoor lighting, including lighting for streets, access drives, parking lots, building access points and additional security lighting. The plan shall indicate fixture heights, type and rating by wattage or lumens. The plan shall include characteristics of all lighting whether freestanding or wall mounted, type of illumination, vendor specifications, method of shielding light and light source, photometric plan and measures of illumination with contours indicating light source at the property lines and ten (10) feet into adjoining properties, including rights-of-way. Lighting specifications for all signage shall be submitted and shall be compatible with land uses in the immediate vicinity.

167.02 TREE PROTECTION

(A) Purpose.

- (1) This Section is intended to perpetuate adequate tree numbers and canopy in order to maintain the economic, environmental and esthetic status of the Town.
- (2) To this end, it shall be unlawful to cut down, damage, poison or in any other manner destroy or cause to be destroyed any tree, mangrove or other vegetation as covered by the provisions of this Chapter except in accordance with the provisions set forth herein. Notwithstanding, in case of emergencies involving natural disasters such as, but not limited to, hurricane, windstorm, flood, freeze or other natural disasters, these requirements may be waived by the Town Manager.

(B) Definitions.

Diameter At Breast Height (DBH). The standard measure of a single-stemmed tree at four and one half (4 1/2) feet above

grade adjacent to the tree. When a tree has grown with cluster stems at breast height, "DBH" shall be equal to the sum or aggregate of the individual stems measured at four and one half (4 1/2) feet above grade.

Drip Line. An artificial line along the ground which conforms to the perimeter of the crown of a tree and projects vertically to the ground.

Grubbing. The removal or destruction of any living rooted shrubbery; the denuding of a parcel by digging, raking or dragging; or activities which disturb the roots of the vegetation or the soil in which the roots are located in a manner which is calculated to result, or likely to result, in the death, destruction or removal of the vegetation.

Heavy Machinery. Mechanical land clearing, earth-moving or earth-working equipment with a gross weight in excess of five thousand (5,000) pounds plus all machinery which utilizes steel tracks for traction.

Historic Tree. A tree which has been found by the Town Council to be of notable historic interest to the Town based on its age, species, size or historic association with the Town.

Land Clearing. The removal or grubbing by any means of any type of vegetation from land not including however, activities governed by tree removal or mangrove alteration permits.

Mangrove. Rooted trees and seedlings of the following species, but only when having a coastal or estuarine association:

- (1) Red mangrove (*Rhizophora mangle*)
- (2) Black mangrove (*Avicennia germinans*)
- (3) White mangrove (*Laguncularia racemosa*)
- (4) Buttonwood or Button mangrove (*Conocarpus erectus*)

Mangrove, Juvenile. A single-stem mangrove with a one (1) inch or less diameter at breast height.

Protected Area. An area surrounding a protected, historic or specimen tree within which physical intrusion is prohibited in order to prevent damage to the tree, roots and soil around the tree base, the dimensions of which shall be established by the Town's Tree Protection Officer and set forth in the tree removal permit.

Protected Tree. All trees and all significant groupings of trees of the West Indian or tropical origin of any size, and all mangroves regardless of size excluding the following trees regardless of size or location:

- (1) Australian pine (*Casuarina equisetifolia*);
- (2) Australian pine (*Casuarina lepidophlia*);
- (3) Australian pine (*Casuarina cunninghamiana*);
- (4) Ear-pod tree (*Enterolobium cyclocarpum*);
- (5) Chinaberry (*Melia azedarach*);
- (6) Brazilian pepper tree (*Schinus terebinthifolius*); and
- (7) Melaleuca (*Melaleuca leucadendra*)

Cabbage palms (*Sabal palmetto*) and citrus trees of all varieties shall not be considered to be protected trees, but these trees shall be included in the tree survey in the event the applicant chooses to make use of the trees as a credit against the trees otherwise required under an applicable landscaping regulation or requirement. If so designated, these palms or citrus trees shall become protected trees under this Chapter.

Protective Barrier. Shall be made of one (1) inch to two (2) inch wide stakes spaced a minimum five (5) feet to eight (8) feet and eighteen (18) inches to twenty-four (24) inches above ground with top two (2) inches to four (4) inches marked by fluorescent orange paint or tape.

Remove or Removal. The actual physical removal or the effective removal through damaging, poisoning or other direct or indirect action resulting in or likely to result in the death of a tree.

Specimen Tree. A tree which is determined by the Town Council, based on the advice of a professional forester, landscape architect, arborist, horticulturist or other similar professional to be of high value to the community, because of its type, size, age or other significant tree characteristics.

Tree. A woody plant having a well defined stem, a more or less well defined crown and which has attained a height of at least eight (8) feet with a trunk diameter of not less than three (3) inches, or a cluster of main stems having an aggregate diameter of not less than three (3) inches, at a point four and one half (4 1/2) feet above ground.

Tree of Special Concern. A Tree of Special Concern is any protected tree with a diameter at breast height (DBH) of thirty-two (32) inches or greater.

Tree Protection Officer. The individual employed by the Town who is responsible for the administration of the provisions of this Chapter and prosecution of any violations thereof. The Tree Protection Officer shall have undertaken an advanced course of study from an accredited university or college in either landscape architecture, horticulture, forestry, botany or other related study areas and have at least three (3) years of significant work-related experience in a land development or construction industry or environmental regulation setting with direct interface with the land development or construction industry. The Tree Protection Officer may have a bachelor's degree in urban planning from an accredited college or university with at least three (3) years of significant work-related experience in the landscaping, horticulture, forestry or environmental protection setting, provided the experience involved direct contact or interface with the land development of construction industries.

Tree Survey. Either a physical on-site survey and plot or an aerial survey is acceptable. An aerial photograph taken within one (1) year prior to application must be to a scale no smaller than one (1) inch to fifty (50) feet or greater which shows the location of all trees located on a given parcel of land intended for development or site planning as a contiguous property of the applicant which is to be included within the actual limits of the area subject to development consideration. An overlay of the proposed development will accompany the tree survey.

- (C) **General Prohibitions.** Unless expressly exempted herein, it shall be unlawful and subject to the penalties provided herein for any person directly or indirectly by another on his behalf to:
- (1) Remove, relocate, destroy or damage any tree on any site or tract without first obtaining a tree removal permit or mangrove alteration permit pursuant to this Chapter;
 - (2) Perform any land clearing or grubbing unless a land clearing permit has been issued pursuant to this Chapter;
 - (3) Encroach onto protected areas established pursuant to this Chapter by any of the following acts or omissions:
 - (a) Trenching, digging, movement or storage of any vehicle within a protected area;
 - (b) The storage of building materials, debris, fill, soil or any other matter within a protected area;
 - (c) The cleaning of material or equipment within a protected area;
 - (d) The disposal of any liquid or solid waste material such as paints, oil, solvents, asphalt, concrete, mortar or other materials similarly harmful within a protected area; and/or
 - (e) The placement of any structure or site improvement within a protected area;
 - (4) Violate or fail to observe any of the requirements set forth herein pertaining to tree and mangrove protection; and/or
 - (5) Violate or fail to observe any of the requirements or provisions set forth herein pertaining to the protection of dune and shoreline vegetation.
- (D) **Exemptions.** Notwithstanding anything to the contrary, the following activities shall be lawful without application for, or issuance of, a tree removal or land clearing permit. None of these exemptions shall apply to any mangrove; nor shall they apply to dune vegetation. Burden of proving entitlement to any particular exemption shall lie with the person claiming use of the exemption in the event the exempted activity ever becomes subject to an enforcement proceeding.
- (1) **Limited Pruning (excluding Mangroves).** This includes the limited pruning and trimming of any tree or other vegetation as necessary for the clearing of a path not to exceed four (4) feet in width to provide physical access or view necessary to conduct a survey or site examination for the preparation of subdivision plats, site plans or tree surveys, provided the clearing or removal is conducted under the direction of a State registered surveyor or engineer.

- (2) **Restricted Landscape Maintenance.** This includes routine landscape maintenance such as trimming or pruning of vegetation which is not intended to result in the eventual death of a plant, mowing of yards or lawns or any other landscaping or gardening activity which is commonly recognized as routine maintenance or replacement. This exemption shall be construed to allow routine maintenance of dune vegetation growing seaward of the coastal construction control line, provided the person owning the property, or his agent, first provides sufficient documentation evidencing express permission for such activity from the Bureau of Beaches and Coastal Systems of the Department of Environmental Protection of the State.
 - (3) **Work by Utility Service.** This includes the removal, trimming, pruning or alteration of any tree or vegetation in an existing utility easement or right-of-way provided the work is done by or under the control of the operating utility company and the company has received all necessary licenses or permits to provide utility service within the easement.
 - (4) **Minor Alteration to Preserve Existing Access.** This includes the removal, pruning, trimming or alteration of any tree or vegetation for the purpose of maintaining an existing access to a property with minimum necessary alteration to natural vegetation.
 - (5) **Damaged Trees.** Any tree which has been destroyed or damaged beyond saving by natural causes or causes not covered by other sections of this Chapter, or which constitutes an immediate peril to life, property or other trees, may be removed without a permit.
- (E) **Permits.** The following permits with stated limitations shall be available upon proper application to the Tree Protection Officer and compliance with this Chapter:
- (1) **Tree Removal Permit.** A tree removal permit shall not authorize the destruction of a mangrove unless the criteria governing mangrove alteration is satisfied;
 - (2) **Land Clearing Permit.** A land clearing permit does not authorize the removal or destruction of protected trees, nor does it authorize any alteration to a mangrove; and
 - (3) **Mangrove Alteration Permit.** No mangrove shall be altered unless the Tree Protection Officer has issued appropriate permits based on a determination that all criteria governing both tree removal and mangrove alteration permits has been satisfied.
- (F) **Criteria for Issuing Permits.** The following criteria shall be satisfied prior to issuance of a tree removal, mangrove alteration, or land clearing permit respectively:
- (1) **Retaining Native Plant Materials.** In any case, at least twenty-five (25) percent of any native plant community shall be retained on a lot except for new development where fifteen (15) percent may be retained if another twenty (20) percent of native canopy is planted, and any regionally endangered species is preserved;
 - (2) **Tree Removal Permit Criteria.** In determining whether or not a permit required by this Chapter should be issued, the Tree Protection Officer shall consider the following criteria:
 - (a) The condition of the tree with respect to disease, insect attack, danger of falling, proximity to existing or proposed structures and interference with utilities services;
 - (b) The necessity of removing a tree to construct proposed improvements in order to allow reasonable economic use of the property;
 - (c) The topography of the land where the tree is located and the effect removal of the tree would have on erosion, soil moisture retention, increased or decreased flow or diversion in the flow of surface waters and the impact on overall surface water management;
 - (d) The number and density of trees existing on-site;
 - (e) The relative significance or uniqueness of the tree as a historic or specimen tree;
 - (f) The impact on the natural environment including ground and surface water stabilization, water quality and aquifer recharge, ecological impacts, noise buffer, air quality and wildlife habitat;
 - (g) The ease with which the proposed development or improvement can be accomplished while accommodating existing mangrove or trees; and

- (h) The economic hardship which would be imposed upon the applicant should the permit not be granted.

If during the review process the Tree Protection Officer determines any tree to be a Tree of Special Concern as defined in this Chapter, then a tree permit shall not be issued if the tree is found to be outside the approved building structures perimeter or in an area in which a swimming pool, spa, deck, driveway, roadway, detached building or other approved construction is located or is to be located (hereinafter referenced as the "building area"). In the event the Tree of Special Concern is located inside the building area, then the request for the issuance of the tree removal permit shall be submitted to the Planning, Zoning and Variance Board to determine whether the permit should be granted. The Planning, Zoning and Variance Board shall determine whether the location of any improvement can be reasonably made without the necessity of removing the Tree of Special Concern. If a reasonable alternative exists to adjust the building area, then the permit may be denied.

- (3) **Mangrove Alteration Permit.** In determining whether or not to issue a permit to alter a mangrove, the Tree Protection Officer shall consider not only tree removal criteria above, but shall also consider the following criteria and incorporate them as conditions of the permit if issued. A violation of any of these provisions shall be deemed to be unlawful and subject to all penalties provided for herein.
- (a) At least fifty (50) percent of the original canopy of any mangrove trees shall be continuously retained.
 - (b) White mangroves and buttonwood shall not be trimmed at all at a distance less than three (3) feet above the natural ground elevation.
 - (c) On red mangroves, no prop roots shall be damaged, removed or buried by fill or other means.
 - (d) Red mangroves may be hedged down to a minimum height of six (6) feet, providing the limitations in (a) and (g) of this subsection are not exceeded. Notwithstanding, juvenile red mangroves may be hedged down to a minimum height of three (3) feet, providing the limitations in (g) of this subsection are not exceeded.
 - (e) On a black mangrove of ten (10) feet or less in height, there shall be no cutting or trimming below the lowest two (2) living lateral limbs, unless a significant canopy area is left at the top of the tree. Further, no pneumatophores shall be damaged or removed nor shall they be buried by fill or other means.
 - (f) No large mangrove cuttings shall be discarded into any estuary, marsh, river or adjacent water course.
 - (g) Pruning, removal and relocation of mangroves shall be prohibited between December 1 and February 15.
 - (h) All cuts shall be made cleanly and at the base of the branch or limb cut, except when done with respect to the shaping of a hedge.
 - (i) A mangrove alteration permit shall not authorize removal of any mangrove unless the applicant replaces or relocates that number of mangroves necessary to re-vegetate an area approximately equal to the area destroyed on the same development site. The applicant must provide an affirmative program satisfactory to the Tree Protection Officer to assure survival of the replaced or relocated mangroves and to stabilize the shoreline from which mangroves were removed. The approved program shall be considered an express condition of the permit.
 - (j) Notwithstanding the provisions of this Ordinance, vegetative changes due to mosquito control activities undertaken as part of a governmental mosquito control program shall not be considered an Ordinance violation.
 - (k) Where mangrove alteration, removal and/or replacement permits are requested as part of a program to dredge or fill a mosquito impoundment area, the Town may mandate partial restoration and/or replacement of mangroves and/or estuarine plants in order to stabilize shorelines in the impacted area. The Town shall assure that related dredge and fill activities provide for and/or preserve a continuance in the circulation and flushing action of waters impacting wetlands. To this end, dredge and fill activities surrounding mangrove alteration shall not create isolated wetlands.
- (4) **Replanting and Hedging Program.** Notwithstanding the criteria of (F)(2) above, the property owner/applicant may elect a replanting and hedging program under the direction and control of the Tree Protection Officer and under which juvenile mangroves may be hedged several times each year and maintained at a height after periodic hedging of three (3) feet without a permit. Such routine hedging shall be restricted to the new growth on mangrove hedges not exceeding eighteen (18) inches in height. If new growth is allowed to exceed eighteen (18) inches, subsequent trimming shall require a permit. As a mandatory and integral part of any routine hedging of mangroves, hedged material (clippings)

shall be left atop the hedged mangroves until leaf drop from the hedge material (clippings) has occurred. The dropped leaves shall then become part of the estuary food chain.

- (5) **Land Clearing Permit.** In determining whether or not to issue a permit to clear or grub land as required by this Chapter, the Tree Protection Officer shall consider whether the applicant has or is complying with all tree and land clearing provisions of this Chapter and shall base a decision regarding issuance of a permit on the following criteria:
- (a) The minimum necessary vegetation removal on the property for purposes of land surveying or land preparation for development or other economic uses;
 - (b) Whether visual access is necessary to comply with the tree survey requirements herein;
 - (c) Whether the applicant provided barriers around all protected trees on the site or will use light machinery that does not penetrate or severely compact the soil for clearing protected area understory vegetation; and
 - (d) The impact upon natural and manmade systems including erosion and surface water management and other impacts identified in (F) (2) above.
 - (e) To this end the applicant shall provide a reasonable written plan for controlling erosion which may be expected to occur as a result of the proposed clearing or grubbing as follows:
 - (i) The plan shall incorporate some or all of the following measures necessary to achieve soil stabilization, prevent erosion and promote efficient surface water management, including temporary seeding and mulching, sodding, diversion berms, interceptor ditches, sediment barriers, sediment basins and related appurtenances or devices; and
 - (ii) All provisions of an erosion control plan shall be incorporated as express conditions of the land clearing permit issued and a violation of any of the conditions or provisions of the plan shall be considered a violation of this Chapter, and subject to all enforcement provisions.

(G) **Approval or Denial of Permit.**

- (1) **LDC Compliance Prior to Issuance of Permit.** The Tree Protection Officer shall only issue a tree removal, mangrove alteration or land clearing permit upon a finding that all applicable requirements of this Chapter have been satisfied. No permit shall be granted if the Tree Protection Officer determines that any one of the following conditions exists:
- (a) **Ability to Reasonably Shift Location of Proposed Improvements.** The applicant can reasonably shift the location of the structure, building or improvement which he wishes to construct on the site while maintaining the existence of the subject trees or mangroves and still permitting the construction of the building or improvement on the site;
 - (b) **Ability to Reasonably Modify Design Concept.** The applicant can reasonably modify the design of a structure, building or other improvement which he wishes to construct on the site while maintaining the existence of the trees or mangroves proposed to be removed and still permit construction of a substantially similar building on the site; or
 - (c) **Land Clearing or Removal Generates Substantial Adverse Impact.** The land clearing or the removal of the subject trees or mangroves will have a substantial adverse impact on the urban and natural environment.
- (2) **Permit Denial.** If the Tree Protection Officer denies the removal permit, he or she shall set forth with particularity his reasons for the denial in writing.
- (3) **Visible Permit Maintained on Site.** A copy of all permits issued pursuant to this Chapter shall be maintained on site. Such permits shall be made visible on site for inspection and shall be contained within a protective cover.

(H) **Replacement or Relocation of Trees.** As a condition to granting a permit, the applicant shall be required to relocate or replace a tree being removed at the applicant's expense. The specifications regulating the replacement of trees are cited below:

- (1) **Characteristics of Replacement Trees.** The replacement tree or trees shall have at least equal shade potential, screening properties or other characteristics comparable to that of the tree or trees requested to be removed.
- (2) **Size of Replacement Trees.** The replacement tree or trees are to be made according to a standard of one (1) inch

diameter at breast height (DBH) total replacement for each one (1) inch DBH removed, unless otherwise agreed upon by both the Tree Protection Officer and the applicant. Any number of trees may be utilized to meet the inch-for-inch requirement provided acceptable spacing and design are maintained.

- (3) **Tree Species.** Relocated or replacement trees shall include only species defined as protected trees under this Chapter.
- (4) **Minimum Standards for Replacement Trees.** All replacements must have a minimum overall planted height of twelve (12) feet, four (4) inch caliper at the time of planting, twenty-five (25) feet apart, Grade “A” or better.
- (5) **Transplanting and Maintenance Requirements.** All trees transplanted pursuant to this Chapter shall be maintained in a healthy, living condition. Any trees which die shall be replaced by the applicant. The Tree Protection Officer shall retain jurisdiction to insure compliance with this section.
- (6) **Waivers of Replacement Tree Specifications.**
 - (a) The Tree Protection Officer may waive the size or minimum standards specifications if the applicant can demonstrate that the current market conditions are such that replacement tree or trees meeting these specifications are not readily available.
 - (b) Similarly, the number of required replacements may be waived by the Tree Protection Officer if the Tree Protection Officer determines that the remaining numbers of trees to be preserved on-site are of sufficient number and quality to substantially comply with the purpose and intent of this Chapter.
 - (c) Substitute trees allowed under this waiver provision must have the approval of the Tree Protection Officer.
- (I) **Information Required for Application.** Application for issuance of any permit required by this Section shall be made in writing to the Town Building Official on a form provided by the Town. The form shall request all information necessary to evaluate a particular application including, but not limited to, the following:
 - (1) A statement as to the applicant’s interest in the property and reasonable proof of ownership;
 - (2) A legal description of the property and a boundary survey or accurate scaled drawing thereof;
 - (3) A tree survey indicating all trees and including those trees that are intended for removal, relocation or alteration in any way and those which will be left undisturbed. A written explanation shall be included with the tree survey identifying those criteria in Section 167.02 (E) through (H) which justify issuance of the requested permit; and
 - (4) If land clearing is intended, an erosion control plan as described in Section 167.02 (F), together with reasons for clearing or grubbing of the site.

The application shall be submitted and processed concurrently with site plan or subdivision approval, as the case may be, when the approvals are otherwise required to make use of the property. The site plan or subdivision preliminary plat shall be prepared in a manner to allow ready comparison with the tree survey to assess whether the cited criteria have been met. All items shown shall be properly dimensioned, scaled and referenced to the property lines, easements and setback or yard requirements. If known, existing and proposed site elevations and major contours shall be included. An administrative fee to offset the cost of evaluating the application shall be collected in an amount determined by resolution of the Town Council. A copy of the State Tree Protection Manual for builders and developers will be issued to each applicant for use as a guide to development.

- (J) **Inspection.** The filing of an application shall be deemed to extend permission to the Tree Protection Officer to inspect the subject property if necessary for purposes of evaluating the application.
- (K) **Period of Review.**
 - (1) For those applications which are not being processed concurrently with site plan or subdivision approval, the Planning, Zoning and Variance Board shall have thirty-one (31) calendar days following receipt of a completed application within which to make a determination on whether a permit shall be issued as requested.
 - (2) If the permit is not issued, the Board shall state in writing the reasons for denial and advise the applicant of any appeal remedies available.
 - (3) For good cause, the Tree Protection Officer may request an extension, the period to be determined by the Board, in which to make a determination, provided the extension is requested prior to expiration of the initial thirty-one (31) day

period.

(L) **Permit Expiration.**

- (1) Any permit issued hereunder shall remain valid for a term of thirty (30) days and may be renewable for a second period of thirty (30) days upon request to the Tree Protection Officer.
- (2) The Tree Protection Officer may require reapplication and full review in those renewal cases where site conditions have changed substantially from the date of issuance of the initial permit as a result of natural growth of trees and vegetation or high winds, hurricane, tornado, flooding, fire or other act of God.
- (3) If a permit required by this Chapter has been issued concurrently with site plan or subdivision approval, then the permit shall run concurrently with the site plan or subdivision approval and shall be renewed together therewith.

(M) **Tree Trimming.** The National Arborist Association standards for pruning, guying, fertilizing, lightning protection and spraying for shade and ornamental trees is hereby adopted by reference for the Town as fully as if set out at length herein.

(N) **Dune and Shoreline Vegetation Protection.** See Section 167.03, Coastal Protection.

(O) **Protected Areas For Trees.**

(1) **Determination of Protected Area.**

- (a) The Tree Protection Officer shall review each application and may inspect each site for the purpose of making a determination as to the appropriate protected area to be designated for those protected trees on a given site.
- (b) The protected area shall be established based upon consideration of the species, age, size, condition of the tree, or soil condition, topography, means of protective barrier proposed or other relevant criteria, and shall be established for the purpose of protecting the roots and trunk of a protected tree both during and after construction.
- (c) In no event shall the protected area exceed the drip line of the canopy area, nor shall the protected area be less than an area measured five (5) feet radially from the center of the tree at its base.

(2) **Protective Barriers.** A protective barrier shall be placed around all protected trees prior to land preparation or construction activities according to the following:

- (a) Protective barriers shall be placed at or greater than a six (6) foot radius of all species of mangroves;
- (b) Protective barriers shall be placed at or greater than the full drip line of all protected native pine trees;
- (c) Protective barriers shall be placed at or greater than two-thirds (2/3) of the drip line of all other protected species;
- (d) Protective barriers shall remain in place until all construction activities are terminated; and
- (e) No equipment, chemicals, soil deposits or construction materials shall be placed within the protective barriers.

(3) **Use of Machinery.** Land clearing and landscaping activities conducted prior to the installation of or subsequent to the removal of protective barriers shall be accomplished with light machinery (weight under five thousand (5,000) pounds) or hand labor. This light machinery shall not penetrate or severely compact the soil in clearing understory vegetation within protected areas whether or not protective barriers are in place.

(4) **Marrings.** Signs, building permits, wires or other attachments of any kind shall not be permitted to be attached to any protected tree. Guy wires designed to protect trees are excluded from this prohibition.

(P) **Administration and Enforcement.**

(1) **Local Permit Not Exclusive.** It is the intent of this Chapter that permits or approvals required hereunder shall be in addition to and not in lieu of any Federal, State, regional or other local approvals which may be required for the same or similar activities. Compliance with provisions of this Chapter does not excuse any person for noncompliance with other applicable Federal, State, regional or local laws.

(2) **Variances and Appeals.** A variance from any of the substantive requirements of this section or an appeal of any administrative determination made by the Tree Protection Officer may be obtained in accordance with the procedures set

forth in this code. The Planning, Zoning and Variance Board of the Town shall be the board to which all variance requests or appeals are made.

- (Q) **Remedy.** Any violation of this Section is also subject to prosecution before the Code Enforcement Board in accordance with applicable law and subject to penalties allowable under Sections 30.80 through Section 30.82 of the Town Code of Ordinances. In addition to either of the foregoing remedies, the Town or any aggrieved party having a substantial interest in the protections provided by this Chapter may apply directly to a court of competent jurisdiction for mandatory or prohibited injunctive relief. In any enforcement proceeding, the adjudicating body may consider mitigating measures voluntarily undertaken by the alleged violator, such as replacement or relocation of trees or vegetation or other landscape improvements, in fashioning its remedy. The adjudicating body may also require such restorative measures. The violator shall be assessed any costs associated with administering the violation, including but not limited to contracted consultant fees as well as any public costs associated with improvements underlying required replacement and/or relocation of trees, vegetation or other landscaping improvements. If a landowner and/or other person or entity found in violation of this Chapter fails to comply with mandated penalties, the Town may deny issuing the subject violator any additional permits provided for in this Chapter until the subject violator complies with assessments, penalties and any other corrective measures imposed pursuant to this Chapter.
- (R) **Penalty.** A violation of any provision of this Section shall be punishable upon conviction by a fine not to exceed five hundred (500) dollars, or by imprisonment in the county jail up to sixty (60) days or both a fine and imprisonment. The destruction or alteration of each tree or plant under this Section shall be considered a separate offense. The destruction of an historic or specimen tree, mangrove or any dune vegetation contrary to this Chapter shall receive the maximum penalty provided by law.

167.03 COASTAL PROTECTION

- (A) **Dune Protection.** In order to protect the natural vegetation and the main dune bluff fronting on the Atlantic Ocean, the following restrictions shall be observed:
- (1) **Construction Seaward of Coastal Construction Control Line.**
 - (a) No structure shall be located seaward of the coastal construction control line established by the Florida Department of Environmental Regulation pursuant to F.S. Ch. 161, as may be amended from time to time, except as provided elsewhere in this Chapter. Compliance with the terms of FDEP Rules and Procedures for Coastal Construction and Excavation (Ch. 62B-33, F.A.C.) is required.
 - (b) A survey accompanying the building permit shall document conformance herewith.
 - (2) **Dune Vegetation.**
 - (a) Except as provided herein, encroachment or ingress onto or any disturbance of the main dune or natural vegetation seaward of the State coastal construction control line is prohibited, including encroachment or disturbance caused by individuals upon foot or by vehicle of any kind.
 - (b) At the time of the initial site inspection, the coastal line shall be marked denoting this protected zone.
 - (3) **Restriction on Structures.** No structure, other than dune crossover observation tower constructed in the interest of public safety, single-family detached dwelling or other structure authorized by the Florida Department of Environmental Protection (DEP) may be located seaward of the coastal construction control line. The design of any such allowed structure must be approved in advance by FDEP and the Planning, Zoning and Variance Board of the Town. Furthermore, no furniture, decking etc. shall be located on the dune. See (A)(6) below for mandatory dune crossovers and crossover limitations.
 - (4) **Vehicles.** Except as expressly provided in (A)(5) below, it shall be unlawful for any person to operate, drive or propel any truck, tractor, bulldozer, grader, crane, automobile, motorcycle, dune buggy, moped, minibike, all-terrain cycle or any other vehicle seaward of the coastal construction control line, excluding any of the aforementioned vehicles when operated by a governmental entity for a governmental purpose.
 - (5) **Dune Leeway Zone.** Notwithstanding the foregoing provisions, during construction in the vicinity of the main dune, an applicant who has received the express written approval of the Bureau of Beaches and Coastal Systems of the Department of Environmental Protection to carry on construction activity seaward of the coastal construction control line may make use of a leeway zone of up to fifteen (15) feet seaward of the control line for those activities related to construction of improvements up to or landward of the control line.

- (a) No permanent improvement or structure may be made in the leeway zone and prior to encroachment therein, a temporary barrier running parallel to the coastal construction control line shall be placed at the most seaward extent of the leeway zone to identify the limits beyond which no encroachment of any kind may occur. All activities related to construction of an approved dune crossover or elevated bridge shall be governed by the authorization given under (A)(3) above.
 - (b) All proposed activity within the fifteen (15) foot leeway zone shall be described in writing and submitted to the Planning, Zoning and Variance Board for prior approval, in addition to the approval by the Bureau of Beaches and Coastal Systems required above.
 - (c) Approvals required under this Section may be obtained concurrently with site plan or subdivision approval as the case may be, but must be obtained in any event prior to the scheduled activity.
 - (d) The leeway zone shall be revegetated with natural indigenous dune vegetation upon completion of construction activities and prior to issuing any certificate of occupancy for the subject improvements.
 - (e) The applicant remains responsible for successful reclamation of the dune vegetation temporarily destroyed under this Section.
- (6) **Required Dune Crossovers.**
- (a) Every multiple-family dwelling structure containing more than three (3) living units and any single-family subdivision development constructed on oceanfront property shall have as a part of its required improvements one (1) dune crossover to the ocean.
 - (b) Any of the structures or developments set forth in (A)(6)(a) above having over two hundred (200) feet of oceanfront may construct additional crossovers to the ocean, but in no case shall any crossover be nearer than two hundred (200) feet from another crossover utilized by the same multiple-dwelling structure or subdivision development.
 - (c) Common dune crossovers between adjacent multiple-family projects are acceptable and encouraged.
- (7) **Construction Specifications for Dune Crossovers.**
- (a) No dune crossover shall be constructed except in accordance with criteria and specifications that are adopted by a resolution of the Town Council and are on file with the Town Building Official.
 - (b) Each crossover shall have a ten (10) foot wide marl approach path for emergency vehicles.
 - (c) Plans and specifications of all dune crossovers shall be submitted to the Town Building Official for approval. After determining that the plans conform to Town requirements, the Town Building Official shall indicate his or her approval of the plans without the necessity of presentation to the Planning, Zoning and Variance Board or the Town Council.
 - (d) All dune crossovers shall be approved by the State before a building permit is issued.
- (8) **Walkways.** The owner of any single-family dwelling desiring to build a walkway to the ocean over the dune lines shall comply with the requirements adopted by a resolution of the Town Council and on file with the Town Building Official for use in single-family dwellings.
- (9) **Illegal Walkways.** Any future dune crossover, walkway or other similar oceanfront structure not complying with the provisions of this subchapter shall be removed at the expense of the landowner; expense shall include the actual cost of removal, court costs and legal fees to collect or force compliance with this Chapter.
- (B) **Lighting for Sea Turtle Protection.** All lights illuminating buildings or associated grounds for decorative, recreational or security purposes shall be shielded in such a manner that they are not visible from the beach. Lights illuminating dune crosswalks shall also be shielded if these lights are visible from the beach. Street lights shall be located or modified so their illumination will travel away from the beach and cannot be seen from it. See also Section 161.19 for further regulations regarding Sea Turtle Protection.

167.04 ESTUARINE WETLANDS BUFFER REQUIREMENT

Any wetland on the unbridged islands or barrier island that abuts the St. Johns River estuary and is classified as "jurisdictional" by the Florida Department of Environmental Protection shall be protected from development by a buffer which meets the following design standards:

- (A) **Width.** The natural buffer shall average twenty-five (25) feet in width but in no case shall be less than fifteen (15) feet in width or set back from the estuary.
- (B) **Access.** The only exception to the vegetative buffer shall be an environmentally sensitive wood accessway to the water for a water-dependent use as referred to in Section 167.05 (B). No impervious surfaces shall be permitted.
- (C) **Plant Materials.** Any exotic species as specified in Section 163.04 (D) shall be removed and replaced with native hardwood species approved by the Town Council.
- (D) **Upland Berm.** A vegetated berm, swale or other approved run-off control device shall be installed on the upland side of the buffer. All exotic vegetation shall be removed from this buffer and berm area and replaced by native species. No impervious surface shall be permitted therein.

167.05 OTHER ESTUARINE SHORELINE

(A) Shoreline Alteration.

- (1) **Avoid Adverse Impacts.** Shoreline alteration activities, such as bulkheads, shall not be undertaken in a manner which adversely impacts water quality, the natural habitat or adjacent shore areas.
- (2) **Necessity.** Shoreline alteration shall not be permitted unless the proposed activity is necessary for a specific purpose, such as shoreline stabilization efforts, and compatible with the environment and adjacent uses.
- (3) **Other Environmental Impacts.** Shoreline alteration activities shall not obstruct water flow, hinder navigation, increase erosion, hinder the natural sand transport system or unduly restrict public use of the waters below the mean high water line. All shoreline alterations shall be accomplished by use of the least environmentally damaging methods and designs possible.
- (4) **Setback from Mean High Water.** No bulkheading shall be permitted waterward of the mean high water line except when it is shown to be in the public interest.
- (5) **Shoreline Stabilization Methods and Priorities.** Shoreline stabilization shall be accomplished by installing appropriate native wetland vegetation. Hardening of the shoreline shall be allowed only when erosion is causing a serious threat to life or property. Riprap materials, pervious interlocking brick systems, filter mats and other similar stabilization methods shall be used in lieu of vertical seawalls whenever feasible.

(B) Shoreline Use and Access.

- (1) **Use.** First priority should be given to water-dependent or water-related uses in conformance with the Comprehensive Plan and which comply with the activities and exceptions described above for environmentally sensitive resources.
- (2) **Access.** High priority shall be given to acquiring, maintaining and enhancing access, scenic views and recreational use of shoreline areas, especially beaches along the Atlantic Ocean.

(C) **Dock Facilities.** Docks, including multi-slip docks, shall not be approved by the Town until the applicant demonstrates compliance with all applicable Federal and State laws and administrative rules, as well as applicable policies of regional agencies. Site plans are required for all docks. The environmental assessment accompanying the site plan must demonstrate that the facilities will not adversely impact natural marine resources including, but not limited to, sea grasses, estuarine waters, manatees and other living marine organisms. Multi-slip dock facilities shall be located so as to prevent or minimize dredging and shall not disturb sea grass beds or adjacent wetlands. The site plan shall indicate:

- (1) Location relative to all impacted natural marine resources;
- (2) Structural specifications;
- (3) Description of all impacted natural marine resources including their location and physical characteristics;
- (4) Availability and location of sewage pump-out facilities;

- (5) Hurricane contingency plans; and
- (6) Mitigation techniques proposed to compensate for any potential environmental disruption, excepting docks for single-family homes.

167.06 PUBLIC HAZARDS ON ENVIRONMENTALLY SENSITIVE LANDS

No activity shall be allowed that results in the alteration, degradation or destruction of any environmentally sensitive resources covered in Sections 167.01, 167.03, 167.04 and 167.05 of the Town's Land Development Code except when the activity is necessary to prevent or eliminate a public hazard. In order for this exception to apply, it must be determined that:

- (1) A hazard or danger exists;
- (2) The proposed activity would eliminate or prevent the hazard; and
- (3) The proposed activity represents the best way to accomplish the desired end with minimal impact on protected resources.

167.07 EROSION AND DUST

The site plan review shall include review of plans to minimize soil erosion and blowing dirt through mulching and spraying techniques. Excavation for the primary purpose of materials sales rather than construction (i.e. mining) shall be prohibited.

167.08 LAKE AND WET DETENTION PONDS: LITTORAL ZONES

- (A) **Littoral Zone.** Prior to construction of any new lakes or other body of water, the plat or site plan shall show a vegetated littoral zone of at least ten (10) square feet for each lineal foot of lake shoreline.
- (B) **Surface Water Management Plan.** Prior to construction of any phase of a project, the developer shall prepare a surface water design and management plan providing a littoral zone along the perimeter of ponds and lakes of the new development. This section applies only to wet detention ponds and other like water bodies designed to be wet over the course of the entire year and used for stormwater management. The plan should:
 - (1) Include typical cross sections of the surface water management system showing the average water elevation and the three (3) foot contour (i.e., below average elevation);
 - (2) Specify how vegetation is to be established within this zone, including the extent, method, type and timing of any planting to be provided;
 - (3) Include the removal of all exotic vegetation and the planting of native vegetation within the littoral zone; and
 - (4) Provide a description of any management procedures to be followed in order to assure the continued viability and health of the littoral zone. The littoral zone as established should consist entirely of native vegetation and should be maintained permanently as part of the water management system.

167.09 STORMWATER MANAGEMENT

- (A) **Prohibition on Depositing Non-Stormwater Run-Off into Storm Conveyance Systems.** It shall be unlawful for any person or persons to deposit non-stormwater materials [as specified in the *State of Florida Department of Environmental Protection Generic Permit for Discharge of Stormwater from Phase II Municipal Separator Storm Sewer Systems* (FDEP Rule 62-621.300(7))] into storm conveyance systems.
- (B) **Required Submittal of On-Site Stormwater Management Plan (SMP).** All preliminary plats and site plans shall include an "On Site Stormwater Management Plan." See Section 166.05 "Preliminary Plat Procedures" and Section 168.04 "Site Plans."
- (C) **On-Site Stormwater Management Plan Requirements.** All development projects shall be subject to the requirements of this Section. The review of stormwater management plans for all development projects shall be based upon the net increase in impervious surface resulting from the development. If a site is to be filled in advance of the issuance of a building permit, the filling and grading (drainage) plan must be approved by the Town Engineer. Further, if construction does not commence within ninety (90) days of the date of filling, then the site must be vegetated to prevent erosion. The proposed stormwater management plan shall meet all applicable St. Johns River Water Management District and Florida Department of Transportation stormwater criteria.
 - (1) **Developments of Less than 2,500 Square Feet.** Stormwater management for new single-family residences and all

renovations, remodels, additions or other modifications (pools, driveways, etc.) shall include the site being filled and graded to direct all surface water runoff to the right-of-way drainage system or other approved drainage facilities. No surface water runoff may be directed to adjacent properties. Where no approved drainage system exists, the site shall be designed to contain the runoff from the first one (1) inch of rainfall. Prior to the issuance of a building permit, a filling and grading (drainage) plan must be approved by the Town Engineer. This plan must contain the flood zone, actual elevations, proposed site elevations and lowest floor elevations.

(2) **Developments of 2,500 Square Feet or More.** All development that includes two thousand, five hundred (2,500) square feet or more shall provide a stormwater management plan which includes all of the information and calculation requirements as specified in this Section prior to receiving a site plan or, if no site plan is required, prior to receiving a building permit. The applicant/owner shall submit such a plan with the site plan minor change application. All stormwater management plans shall include the following information:

- (a) A soil boring log prepared by an approved geotechnical firm indicating representative soil types and the groundwater table;
- (b) Percolation tests pursuant to best management practices;
- (c) The size, grade and elevation of all existing or proposed on-site and/or public drainage facilities located within two hundred (200) feet of the proposed development. Elevations shall be based upon National Geodetic Vertical Datum (NGVD) of 1929;
- (d) Description of the existing predevelopment drainage characteristics of the land, including those areas contributing stormwater which passes through the site;
- (e) Right-of-way elevations of any street contiguous to the site and the locations of these elevations shall include, but are not limited to, the centerline of roadway, edge of roadway (curb if applicable), swales and sidewalk at intervals not to exceed fifty (50) feet;
- (f) Proposed finished elevation of each building site and first floor level and a proposed grading plan;
- (g) Transitional property line grades (elevations) shall be indicated on the grading plan so that stormwater impact upon adjacent sites may be precluded;
- (h) Proposed system for the orderly retention and disposal of surface water runoff with the system capabilities of having a minimum ability to accommodate the necessary amounts;
- (i) All swales, retention areas and all other drainage facilities proposed shall be indicated on the grading plan with elevations and guidelines shown as applicable;
- (j) Location and method of connection with off-site drainage facilities to accommodate the site's excess surface water overflow, including documents indicating legal access across private property if applicable; and
- (k) Proposed method(s) of erosion and sedimentation control consistent with State Best Management Practices.

The Town Engineer may waive any of the requirements set forth above if the Town determines that the waiver does not inhibit proper stormwater management.

All developments with two thousand, five hundred (2,500) or more square feet shall include a stormwater management plan prepared by a registered professional engineer licensed to practice in the State of Florida. This plan shall meet the following criteria:

TABLE 167.09 (C)	
CRITERIA FOR ON-SITE STORMWATER MANAGEMENT PLAN	
Quantitative Criteria	Specifications
Design Storm:	25-year, 24-hour design storm; post-development conditions shall not increase the amount or rate of run-off beyond predevelopment conditions.
Design Rainfall Distribution:	F.D.O.T.--Zone 7 Rainfall Curve.
Inflow Hydrograph Method:	Rational, SCS, Santa Barbara, etc., as chosen by plan designer (Florida Registered Professional

	Engineer)
Total Volume:	Site must retain at least the volume from a 25-year/24-hour storm. Lesser volumes may be considered if economic hardship is clearly demonstrated.
Maximum Discharge Rate:	Post-development shall not exceed predevelopment.
Percolation Test:	Required.
Qualitative Criteria	
Detention/Retention:	Post-development shall not exceed predevelopment.
Wet/Dry:	Either wet or dry retention/detention is acceptable dependent upon site conditions and location.
Time:	Full capacity recovery within thirty-six (36) hours.
Volume:	25-year, 24-hour design storm.
Percolation:	Disposal on-site via surface or underground exfiltration system(s) or combination thereof.
Types of Discharge Structures:	Skimming devices and/or weirs required where applicable and practical with the design subject to review by the Town Engineer.
Drainage Area Design Standards	
Side Slopes:	4:1 or less required; however, upon demonstrated need and adequate justification, the Town Engineer may consider and approve the use of 3:1 maximum side slopes.
Vegetation:	Solid sod.
Maximum Depth:	Eighteen (18) inches; any depth greater than eighteen (18) inches is subject to review by the Town Engineer with side slopes and site constraints being critical criteria.
Maintenance Plan & Completion Requirements:	No changes to approved plan allowed except as modified by site plan review process; all site stormwater management facilities shall be maintained per approved plan. After completion of the stormwater management facilities and prior to the issuance of a certificate of occupancy, the designer of the plan shall submit a certification attesting the facilities have been constructed in accordance with the approved stormwater management plan.
Easements:	Release or dedication of easements as may be required; no stormwater management facilities are to be placed in existing or proposed easements other than approved drainage easements. Any use of such stormwater easements is subject to approval by the Town of Indian River Shores.

(D) Design Criteria.

- (1) **Design Frequency.** The required design storm frequency for the overall site development is given in the Quantitative Criteria for the On-Site Stormwater Management Plan and the secondary conveyance design frequencies are shown below in Table 167.09 (D)-1.
- (2) **Design Flows.** The determination of design flows for a culvert/pipe installation shall be in accordance with acceptable and relevant methods and procedures for determining stormwater flows such as, but not limited to: the Rational Method; HEC-5; Santa Barbara Urban Hydrograph; SCS Unit Hydrograph, etc.

Table 167.09 (D)-1 Stormwater Management System Component Design Storm Frequencies and Freeboard Requirements		
Structure Type	Frequency (Yrs.)	Freeboard Requirement
Cross Drain Culverts:	25	Highest head (HGL) 12" below edge of pavement.
Structures for Primary Conveyance of Off-Site Stormwater		
Pipe Systems:	25	Design storm HGL 12" below finished grade.
Canals/Ditches:	25	
Paving Stormwater Collection Systems (Secondary Conveyances)		No HGL beyond gutter or edge of pavement (see Note II below).
Public or Private Roadways:	10	
Public or Private Parking:	5	
Stormwater Management Ponds:	25	HGL 12" below top of bank.
Finished Floor Elevations:	100	See Section 165.05 of Town's Land Development

	Code.
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- I. Designs shall be analyzed to verify that potential off-site flood elevations due to the post-development storm events are less than or equal to pre-development flood elevations and flow rates.
 - II. The computed hydraulic grade line elevation (HGL) at each junction/inlet in a system must be below the edge of pavement elevation, gutter line elevation, top of grate elevation or top of manhole elevation, whichever is lower, at that junction/inlet.
- (3) **Minimum Culvert Size.** Culverts shall comply with design criteria stated in Table 167.09 (D)-2 below. Culverts shall be sized as needed to convey the design stormwater runoff. If the culvert size required is less than the criteria specified in the table below, use the criteria in the table as the minimum size to reduce likelihood of clogging and blockage.

Table 167.09 (D)-2 Minimum Culvert Size	
Cross Drains	18" or equivalent
Stormwater Collection System	15" or equivalent
Manifold yard piping (on private or public building structures) that tie into stormwater collection systems	8" single commercial structure 6" single structure

- (a) **Pipe Size Increment.** Pipe sizes above eighteen (18) inches or equivalent shall be based upon six (6) increment or equivalent increases.
- (b) **Pipe Length.** The maximum length of culvert to be used without an access structure is specified in Table 167.09 (D)-3 below.

Table 167.09 (D)-3 Maximum Pipe Length Criteria (From FDOT Drainage Manual, 1987)	
Pipe Size (Inches)	Maximum Length (Feet)
15" Pipe or Equivalent	100 ^I
18" Pipe or Equivalent	300
24" to 36" Pipe or Equivalent	400
42" and Larger Pipe or Equivalent	500
Box Culvert	500

- I. Up to three hundred (300) feet maximum length may be used when debris control is provided at any and all inlet locations, and full-flow culvert velocity exceeds three (3) feet/second.
 - (c) **Minimum Physical Slope.** The minimum physical slope for a culvert shall be that which produces a velocity of at least two and a half (2 1/2) feet per second when the culvert is flowing full or half full and the hydraulic gradient is equal to the bottom slope of the culvert. The Manning equation shall be used to calculate the velocity under these conditions.
 - (d) **Maximum Velocity.** The maximum allowable internal velocity for culverts shall be ten (10) feet per second providing that the HGL does not over top the structures. The maximum allowable outlet velocity for culverts shall be sufficient to ensure that downstream erosion will not occur. Acceptable energy dissipation and erosion protection measures must be provided.
 - (e) **Design Tailwater.** All culvert installations shall be designed taking into consideration the tailwater of the receiving facility or body of water (inlet or outlet control). The tailwater elevation must be determined by hydrologic and hydraulic calculations based upon the design criteria and frequencies shown in Table 167.09(D)-1 above.
- (4) **Material Specifications for All Culverts.** Allowable culvert and other stormwater management system pipe materials shall be the same as those culvert and pipe materials allowable by the Florida Department of Transportation (FDOT). Any size, cover, location or any other constraint or limitation placed on the use of a particular material by the FDOT

shall also be required by the Town. The required guidance and procedures for selecting alternate culvert and pipe materials for installation shall be found in the FDOT Drainage Manual and in any and all supplemental guidance and procedures officially issued by the FDOT. Any new materials or modifications to constrained or limited materials shall not be allowable in the Town until such time that the FDOT has officially accepted the material for use.