

TECHNICAL MANUALS*

***Editor's note:** Printed herein are the technical manuals attached to Ordinance No. 97-051, adopted July 1, 1997. Amendments to the technical manuals are indicated by parenthetical history notes following amended provisions. The absence of a history note indicates that the provision remains unchanged from the original. The original section and subsection numbering has been preserved. Obvious misspellings and punctuation errors have been corrected without notation. For stylistic purposes, headings and catchlines have been made uniform and the same system of capitalization, citation to state statutes, and expression of numbers in text as appears elsewhere in the Code of Ordinances has been used. Additions made for clarity are indicated by brackets.

ENVIRONMENTAL TECHNICAL MANUAL

A. *A littoral zone plan.* In order to provide optimum water quality for surface waters of Sarasota County and to provide desirable aquatic habitat, the following is required:

1. *Littoral Zone Requirements.* No less than 30 percent of the surface area reserved for each stormwater detention pond, or series of ponds if connected with equalizer pipes, measured at normal water level, shall consist of a littoral zone. In cases where a retention pond exceeds the minimum area needed to treat stormwater runoff, the area of littoral zone shall be based on the minimum pond size that would have been required for stormwater treatment. Littoral zones will not be required in dry retention facilities (e.g., sodded depressions designed to hold stormwater for a fixed period of time, then dry out as water is lost through percolation and evaporation) or underground vaults. Littoral zones are required, but need not be planted in lakes less than one acre created solely for aesthetic or attenuation purposes (e.g. do not receive untreated stormwater discharges).
2. *Littoral Zone Plan and Location.* A plan shall be submitted showing the proposed location(s) of the littoral zone(s) and a typical cross-section. Littoral zones should be located away from residential lots whenever possible and shall be concentrated near the outfall of each pond when practical. Perimeter or fringe littoral shelves are discouraged.
3. *Platting.* Tracts of land identified on proposed plats that contain stormwater ponds shall have a note placed on the plat identifying that planted littoral shelves may be located with these tracts.
4. *Maintenance.* Required littoral zone vegetation shall be maintained in perpetuity by a designated responsible entity or the owner of the property.
5. *Bond and Maintenance Easements.* A monitoring and maintenance bond in a form acceptable to the Board shall be submitted to the County prior to the excavation of the on-site lakes. The bond shall be in the amount to cover 100 percent of the estimated cost for two years of monitoring and maintenance of the littoral zones. The applicant shall also provide a temporary maintenance easement to the County in the event that the littoral zone bond must be used to properly maintain the littoral shelf. Littoral zone bonds are not required for non-residential commercial projects.
6. *Species to be Planted.* Initial planting shall include at least three different herbaceous emergent native species for each littoral zone. No species shall constitute more than 50

percent of the number of plants to be planted.

7. *Installation.* Plants should be installed in that portion of the littoral zone between normal water level and a depth of two feet unless otherwise approved by the Natural Resources Department.

8. *Source of Plants.* If plants are to be obtained from a nursery, the plan must indicate the source. If plants are to be obtained from the wild, the applicant must provide proof that the appropriate permit has been obtained from the Florida Department of Environmental Protection.

9. *Proposed Spacing.* Centers of vegetation shall be no farther apart than three feet for herbaceous individual plants or clumps or five feet for floating-leaved species.

10. *Planting Schedule.* Littoral zones should be planted during the months of June through October. Littoral zones in lakes excavated during these months shall be planted within 30 days following excavation, provided that normal water level is or is likely to be attained within that time period. Littoral zones in lakes excavated in November through May shall be planted by June 15 unless otherwise decided by the Natural Resources Department based on existing environmental conditions. The County shall be notified within seven days of planting.

11. *Guarantee of Coverage.* Supplemental planting will be required on an annual basis if coverage is less than 85 percent and the littoral shelf fails to show progress toward success, unless otherwise determined by the Natural Resources Department based on existing conditions. Desirable native herbaceous emergent plants that recruit within a littoral zone will be counted towards the coverage requirement.

12. *Proposed Monitoring.* The success of the littoral zone plantings shall be assessed twice a year during the growing season (April through November). An annual monitoring report shall be submitted to the County summarizing the results of the two monitoring events. The annual monitoring report may be submitted via mail or e-mail attachment [PDF, Word]. Each monitoring report shall include all of the applicable elements reflected in the monitoring report guidelines located in Appendix I of the Environmental Technical Manual. Monitoring reports that do not include all of the required information shall be deemed incomplete and require a re-submittal. The monitoring report shall be prepared by an environmental scientist, ecologist, biologist or person with similar training.

13. *Success Criteria.* The littoral zone shall be deemed successful and monitoring may cease when the herbaceous emergent native vegetation equals or exceeds 85 percent coverage and nuisance/invasive species coverage constitute less than 15 percent.

14. *Nuisance/Invasive Species.* Nuisance/invasive species (e.g., cattails, primrose willow, torpedo grass) shall be removed from the littoral shelves whenever they constitute more than 15 percent of the vegetative cover in the littoral zone. If the nuisance/invasive species impede the establishment of native plants, they shall be physically removed from the littoral shelves and properly disposed. Native woody species that invade a littoral zone and trend toward becoming a monoculture shall physically be removed from the system.

15. *Exotic Fish.* Stocking of exotic fishes such as Tilapia (*Oreochromis sarotherodon*, Tilapia), grass carp (*Ctenopharyngodon idella*), suckermouth catfish (*Hypostomus* sp.) and others, shall be prohibited in ponds with littoral zones. If such species are introduced by other means (cross contamination by maintenance boats, birds, etc.) and are impacting the success of the littoral zone, they shall be removed from the stormwater system where practical.

16. *Water Withdrawals for Irrigation.* If water withdrawals for irrigation purposes are proposed from stormwater ponds that contain littoral zones, the County may require an irrigation plan to establish minimum water levels and control withdrawals to ensure the

success of the littoral zone.

B. *A wetland mitigation, maintenance and monitoring plan.*

1. *Wetland Impact Justification.*

a. Alterations to wetlands shall not be allowed unless the Applicant demonstrates to the satisfaction of the County the following:

- 1) The wetland no longer provides the environmental functions and values normally associated with wetlands, such as, but not limited to, habitat for wildlife, water quality protection, or stormwater detention; and
- 2) No other reasonable alternative exists other than disrupting a wetland.

In demonstrating to the satisfaction of the County that no reasonable alternative exists to disrupting a wetland, the Applicant shall adhere to the following principles:

- a) Avoidance to the greatest extent practicable;
- b) Minimization of impacts where avoidance is not practicable; and
- c) Suitable mitigation to offset adverse impacts that ensures greater ecological benefits where avoidance and minimization are not practicable.

b. Prior to submitting a Site and Development Plan or Preliminary Plan, an applicant proposing to alter a wetland shall schedule and conduct a preapplication meeting with County staff. The applicant shall provide a written report at or prior to the preapplication meeting which:

- 1) Describes the wetland habitat and the values and functions (including any protected species) currently associated with it;
- 2) Includes recent photographs showing the wetland, or portion thereof, proposed to be altered;
- 3) Demonstrates that the wetland qualifies for alteration based on the criteria provided herein; and
- 4) Demonstrates that the principles of avoidance first and then minimization have been applied. Within ten working days following the preapplication meeting the County shall indicate in writing whether the proposed wetland alteration meets applicable criteria.

2. *Mitigation Ratios.*

a. The appropriate amount of mitigation to offset proposed wetland impacts shall be determined pursuant to the Uniform Mitigation Assessment Method (UMAM), Chapter 62-345 of the Florida Administrative Code.

b. If the proposed wetland impacts do not qualify for a UMAM assessment, the following ratios will apply:

- 1) One-to-one for herbaceous wetlands and two-to-one for forested wetlands in accordance with Level 1 mitigation standards as stated herein.

c. The type of mitigation proposed shall be appropriate for the wetland impacts incurred as determined by the Natural Resources Department.

3. *General Mitigation Requirements.* In cases where wetland alterations are approved by the County, a wetland mitigation, maintenance and monitoring plan based on best available technology shall be submitted to the County for review and approval prior to or concurrent

with the submittal of a Site and Development Plan or preliminary plan.

- a. All alterations in wetlands which result in a loss of habitat function and value shall be mitigated in accordance with ratios determined in Section B.2. and performance standards specified herein and in the "Principles for Evaluating Development Proposals in Native Habitats" found in the Environment Chapter of the Sarasota County Comprehensive Plan;
- b. Wetland mitigation shall provide values and functions equal to or, in the case of an impacted or degraded wetland, greater than those of the wetland qualifying for alteration;
- c. The applicant shall demonstrate reasonable assurance that the wetland mitigation will exhibit the defined environment function and nature of, and, where hydrologically feasible, be of similar type to the altered wetland;
- d. An applicant may not designate as preservation areas those native habitats that must already be preserved under the Guiding Principles for Evaluating Development Proposals in Native Habitats of the Comprehensive Plan, in order to satisfy wetland mitigation requirements;
- e. All mitigation areas shall be maintained and preserved in perpetuity by the responsible entity, who has the necessary control to perform any required maintenance and/or corrective actions;
- f. The applicant or other responsible party shall provide a mitigation, maintenance and monitoring plan which meets performance standards as indicated in Sections B.6 through B.10;
- g. Any modifications in County-approved plans (e.g., change in plants used, configuration of the mitigation area, change in the responsible entity for monitoring and maintenance activities) shall be submitted in writing to the County for review and approval prior to initiating the proposed modifications; and
- h. The success of mitigation shall be monitored by the applicant or other responsible party and shall also be subject to monitoring and enforcement by the County.

4. *Wetland Mitigation Plan - General Requirements.* All wetland mitigation plans shall include:

- a. A relocation plan, in cases where state or federally listed threatened or endangered plant species will be impacted. Relocation must occur prior to construction and must be done in accordance with an approved plan;
- b. Name(s) of the person(s) responsible for planting, monitoring and maintaining each mitigation area;
- c. Methods to ensure the perpetual maintenance of mitigation areas as preserves (deed restrictions, conservation easements, or other methods approved by the County);
- d. The acreage of wetlands proposed for alteration;
- e. The type of mitigation proposed;
- f. A description and depiction of the upland buffers proposed. Buffers, a minimum width of 30 feet, shall be required around all the mitigation areas. Planting suitable native vegetation (e.g., wax myrtle, saw palmetto, oak trees) in an upland buffer may be credited toward the required mitigation;
- g. The proposed spacing when planting of wetland vegetation is proposed or

required, including a figure showing zones to be planted. Centers of vegetation shall be no farther apart than three feet for herbaceous individual plants or clumps, five feet for floating-leaved species and ten feet for trees and shrubs when calculating number of plants required. Using a random pattern or a pattern simulating natural conditions shall be used when appropriate;

h. Source of material. Indicate the source of plants, mulch or substrate to be used in the mitigation area. If plants are to be obtained from the wild (not from the altered wetland), proof must be provided that a permit to relocate the vegetation has been obtained from the Florida Department of Environmental Protection;

i. Plant Specifications. All plants/trees used in upland mitigation areas must be Florida #1 grade or better, as described in the Grades and Standards for Nursery Plants. All wetland plants/trees used in wetland mitigation areas shall meet the specifications described in the wetland plant section of the Grades and Standards for Nursery Plants. If field harvested plants are used, they must be of equivalent quality to the aforementioned standards;

j. Planting & Mitigation Activities Schedule. Mitigation creation and restoration areas shall be constructed within 30 days following approved wetland impacts, unless a written extension is obtained from the County. The County may grant extensions of no more than 90 days to accommodate construction schedules or to avoid planting when drought, frost or freeze damage is likely. The County shall be notified upon completion of planting. Wetland enhancement mitigation activities shall be initiated prior to issuance of a Certificate of Completion. Upland preservation mitigation areas shall have an executed conservation easement that is officially recorded in the County's Clerk of Circuit Court Records prior to issuance of the project's Certificate of Occupancy or Certificate of Completion;

k. Bond & Maintenance Easement Requirements. A monitoring and maintenance bond in a form acceptable to the Board shall be submitted to the County prior to wetland disruption. Said bond shall be in the amount to cover 100 percent of the estimated cost for three years of monitoring and maintenance of the mitigation area(s). The applicant shall also provide a temporary maintenance easement to the County in the event that the mitigation bond must be used to properly maintain the mitigation area;

l. Location of mitigation. All mitigation shall be performed on-site, unless the applicant demonstrates to the satisfaction of the Natural Resources Department that on-site mitigation is not technically feasible due to hardships associated with the site. All off-site mitigation shall be within Sarasota County boundaries, unless an interlocal agreement or other legal mechanism acceptable to the County exists that ensures the County can maintain compliance with these standards. Wetland creation mitigation shall be confined to flatwoods (except scrubby flatwoods), improved pasture or substantially disturbed areas, where the water table is still at sufficient levels to sustain wetland vegetation. Whenever possible, mitigation should be provided in a defined area that is part of an environmental system or corridor that can enhance wildlife values and functions. Applicants are encouraged to incorporate design features into mitigation areas that will enhance wildlife use;

m. Wildlife. A description of wildlife observed utilizing the site, especially species protected by State or Federal regulations. Each on-site habitat shall be surveyed using the most recent sampling techniques recognized by the appropriate state and federal wildlife agency, or other technique approved by the Natural Resources Department.

5. *Wetland Mitigation and Planted Buffer Monitoring and Maintenance Plans General Requirements.* All wetland monitoring programs shall comply with the following

requirements:

- a. The mitigation area(s) shall be evaluated twice a year during the growing season (April through November) for a period of not less than three years. Tasks b. through e. shall be repeated during each visit. An annual monitoring report shall be submitted to the County summarizing the results of the two monitoring events for at least three years. Additional monitoring may be required if the success criteria of native or invasive/nuisance plant coverage has not been achieved. The monitoring report shall include all of the applicable elements reflected in the monitoring report guidelines located in Appendix I of the Environmental Technical Manual. Monitoring reports that do not include all of the required information shall be deemed incomplete and require a re-submittal. Each monitoring report shall be prepared by an environmental scientist, ecologist, biologist or person with similar training. The monitoring report may be submitted via mail or e-mail attachment [PDF, Word].
- b. If a planted buffer is proposed as a component of the wetland mitigation plan, the planted buffer monitoring areas shall be evaluated annually following completion of planting and submitted with the annual wetland mitigation report.
- c. The site shall be photographed at easily verifiable and reproducible photo locations during each visit.
- d. Nuisance/invasive species shall be removed whenever the percent coverage exceeds the level designated in the approved mitigation plan (UMAM or Level 1).
- e. The relative success shall be assessed during each visit, as determined by the existing cover of plants. The following shall be recorded: Water depths measured relative to seasonal high of the wetland mitigation area the percent coverage of nuisance/invasive plant species, percent coverage of naturally recruited species, and wildlife observations. A summary of maintenance activity during the monitoring interval, and a summary of maintenance or other corrective actions needed to achieve performance criteria shall be provided.
- f. As-built drawings or other acceptable professional documentation as determined by the Natural Resources Department, providing acreages and elevations, for each wetland creation, restoration, and enhancement mitigation area shall be provided. This record survey shall be performed by a Professional Surveyor and Mapper and drawn at an appropriate scale by a Florida Registered Engineer or Professional Survey and Mapper.
- g. If assessment of the mitigation site supports the mitigation activities have achieved success, the responsible party shall provide written certification by an environmental scientist, biologist or registered engineer or landscape architect that the mitigation meets applicable success criteria. If certification of success is not submitted or is not approved by the County then annual monitoring shall continue until the mitigation is deemed successfully by the County after applying the success criteria described in Section B.6. through B.10. listed below.
- h. Corrective actions will be required on an annual basis if the mitigation area fails to show progress toward the approved success criteria, as determined by the Natural Resources Department. Proposed corrective actions must be reviewed and approved by the Natural Resources Department prior to implementation.

6. *Level I or Creation/Restoration Mitigation - General Criteria.* In addition to the general mitigation requirements in Section B(3), (4) and (5), applicants proposing Level I or creation/restoration mitigation shall also include the following information: a. and b. and comply with the following requirements c. and d. The purpose of Level I or creation/restoration mitigation is to reproduce a wetland that is similar in plant diversity, wildlife habitat, topography and function to the wetland to be impacted, or in the case of a

degraded wetland, greater than those of the wetland qualifying for alteration.

- a. Applicants shall provide a table showing the amount and type of mitigation proposed.
- b. Applicants shall provide a methodology statement regarding how plant diversity and coverage, topography, water depths (e.g., normal pool and seasonal high), and hydroperiods in each wetland zone will be assessed in the wetland(s) qualifying for alteration, and how these will be recreated in the mitigated wetland, and maintained in perpetuity. The methods selected shall be verifiable, reproducible and provide a sufficient effort of sampling to characterize accurately each vegetation zone or stratum. The methodology proposed shall be submitted to the County for review and approval prior to the submittal of a Site and Development Plan or Preliminary Plan. The data obtained from the survey may be submitted with the Site and Development Plan or Preliminary Plan; however, applicants are encouraged to submit this information prior to submitting a site development plan so that any deficiencies can be corrected and redesign of the plan, if necessary, can be facilitated without delaying approval of the site development plan.
- c. Establish vegetation zones or strata in the recreated wetland similar to those in the wetland to be impacted. Typical cross-sections of the wetland(s) to be impacted and mitigated wetland(s) shall be provided.
- d. Use similar substrate. Suitable substrate from each zone of a wetland to be altered that is essentially free of nuisance/invasive species shall be transferred to appropriate zones in the recreated wetland(s). If suitable substrate is not available due to previous impacts to the wetland, it must be obtained from a source that is essentially free from nuisance/invasive species. The proposed source shall be identified and is subject to approval by the County. Transfer of mulch shall occur within 30 days following disturbance of the wetland. If a clay or other confining layer is present beneath a wetland, the material should be transferred to the recreated wetland, whenever practical.

7. *Level I and Creation/Restoration Mitigation - Success Criteria.* At the end of the required minimum three-year monitoring period, mitigation may be deemed successful and monitoring may cease when:

- a. The diversity of native plant species in the recreated wetland approximates or exceeds the diversity of plants in the wetland that was impacted; and
- b. The use of the recreated wetland by wildlife is similar to that of the impacted wetland prior to impact, based on a comparison of observations made prior to impact with those made at mitigated wetlands during each monitoring event; and
- c. The coverage of native plants within each zone or stratum, including the buffer if planted, equals or exceeds the coverage in the impacted wetland prior to impact; and
- d. Nuisance/invasive species coverage is consistent with mitigation plan levels approved by the County; and
- e. The mitigation area has not been augmented by irrigation or required supplemental planting to attain a native plant coverage level consistent with mitigation plan levels approved by the County, for a period of one year; and
- f. Hydroperiods in the mitigated wetland are adequate to sustain its functions and values.

8. *Wetland Enhancement Mitigation - General Criteria.* In addition to the applicable general mitigation requirements in Section B(3), (4) and (5), applicants proposing wetland

enhancement mitigation shall also include the following information:

- a. The type of wetland enhancement mitigation proposed to increase the ecological value.
- b. A plan sheet clearly depicting the location of existing wetland(s) to be enhanced and an environmental narrative thoroughly describing its historical/existing condition, including the historical/existing Seasons High Water Level where feasible.
- c. A description of the proposed enhancement activities to increase the function and value of existing wetland. Nuisance/invasive species shall be removed in accordance with the removal requirements contained herein. Applicants may elect to transfer native plants or clumps of plants from the wetland to be altered to the mitigation area. Credit will be given for these transfers in meeting specified wetland enhancement native plant coverage requirements.

9. *Wetland Enhancement Mitigation - Success Criteria.* At the end of the required minimum three-year monitoring period, mitigation shall be deemed successful and monitoring may cease when:

- a. The enhanced wetland has reached the function and value set forth in the success criteria shown in the mitigation plan for one year without a maintenance event, supplemental planting or irrigation; and
- b. Native plant coverage shall be consistent with mitigation plan levels approved by the Natural Resources Department without supplemental planting or maintenance event during the previous year; and
- c. Nuisance/invasive species levels shall be consistent with the mitigation plan approved by the Natural Resources Department; and
- d. Hydroperiods in the enhanced wetland are adequate to sustain its functions and values.

10. *Upland Preservation Mitigation - General Criteria.* In addition to the applicable general mitigation requirements in Section B(3), (4) and (5), applicants proposing upland preservation mitigation shall also:

- a. Clearly demonstrate no net loss of wetland values and functions by utilizing a functional assessment methodology based on the Uniform Mitigation Assessment Method. An applicant may not designate as preservation areas those native habitats that must already be preserved under the Guiding Principles of the Comprehensive Plan, in order to satisfy wetland mitigation requirements. At a minimum, the plan shall contain the following information:
 - 1) A description (e.g., size, configuration, and location) and survey/construction drawing of the proposed preserved habitats to serve as mitigation, including an assessment of the environmental functions and values these habitats will provide after proposed compensation has been deemed successful by the County.
 - 2) A description of the proposed monitoring and long-term management that will preserve the projected functions and values of the mitigation site in perpetuity.
- b. Upland preservation areas will be deemed successful when:
 - 1) A resource management plan for the area, as defined in Section D of the Environmental Technical Manual, is submitted by the Applicant and reviewed and approved by the County; and
 - 2) The area is platted as a separate tract and designated as a preservation

area; or

3) A conservation easement is dedicated to the County and recorded as such; or

4) Some other method of perpetual protection is approved by the County.

C. *A tree protection plan* in compliance with the current Tree Protection Ordinance, Chapter 54, Article XVIII, of the Sarasota County Code of Ordinances.

D. *Resource management plan and monitoring requirements for conservation and preservation areas.* A resource management plan for all preservation and conservation areas, which includes conservation easements and wetland mitigation areas, must be submitted to the County to ensure maintenance of the functions and values of these areas [(LDR Section 74-32(a)(10) or 74-62(a)(19)]. A goal of the resource management plan is to create sustainable ecosystems.

1. *Resource Management Plan.*

a. The resource management plan shall be prepared by an experienced environmental professional and contain the following:

1) Identification of the responsible entity, who has the necessary control to perform any required maintenance and/or corrective actions;

2) Identification of prohibited activities, including, but not limited to, filling, excavating, alteration, trimming and/or removing of native vegetation within the preservation and conservation areas, as appropriate;

3) Identification of compatible land uses and activities (e.g., nature trails) which are subject to review and approval by the County;

4) Identification of measures to protect wildlife and integrity of the native habitat (e.g., wetlands and hammocks) prior to and during management activities;

5) Identification and description of best management practices and proposed management activities to be conducted to maintain the habitats in their existing high ecological value, enhanced, or restored condition, including measures to remove or eradicate and maintain exotic, nuisance and invasive vegetation; prescriptive burns, roller-chopping, etc.;

6) Ecological assessment of each preservation/conservation area including habitat type, existing vegetation, strata, zonations, percent coverage of exotic, nuisance and invasive vegetation;

7) The percent coverage of exotic, nuisance and invasive vegetation to which each habitat within preservation and conservation areas is being maintained;

8) A hydrologic assessment of all wetlands including seasonal high water elevations;

9) Resource management goals and monitoring methodologies;

10) The time frames and intervals for implementation of the resource management plan activities.

b. *Resource Management Plan Goals.*

1) The existing wetland hydroperiods shall be determined by the applicant according to methods approved by County staff. Post-development hydroperiods shall approximate or improve those determined during pre-development investigations as determined in the Resource Management

Plan. If the results of monitoring indicate that post-development hydroperiods do not approximate predevelopment hydroperiods or levels approved during development plan review, remedial action may be required.

2) The percent coverage of exotic, nuisance, and invasive vegetation within each preservation and conservation areas shall be consistent with Section F.

2. *Monitoring Reports.*

a. Monitoring reports shall be submitted to the county annually, with the first report due one year after the issuance of the first Certificate of Occupancy.

1) The first report shall restate the approved resource management goals and monitoring methodologies.

2) Each monitoring report shall include all of the applicable elements reflected in the monitoring report guidelines located in Appendix I of the Environmental Technical Manual [found at the end of this Chapter 74]. Monitoring reports that do not include all of the required information shall be deemed incomplete and require a resubmittal. Each monitoring report shall be prepared by an environmental scientist, ecologist, biologist or person with similar training. The monitoring report may be submitted via mail or e-mail attachment [PDF, Word].

b. Annual reports shall be submitted for five years and then every three years for two reporting periods, unless the goals of the resource management plan have been adequately demonstrated to be achieved earlier.

3. *Maintenance.*

a. Once the goals of the resource management plan have been achieved, the preservation/conservation areas shall be maintained in perpetuity. Should functions and values of preservation, conservation or mitigation areas not be maintained, the resource management plan activities and reporting requirements shall be reinstated.

E. *Myakka River Protection Zone.* All activities conducted within the Myakka River Protection Zone shall be consistent with Chapter 54, Article XXXIII (the Myakka River Protection Code), Ordinance No. 2008-002.

F. *Undesirable vegetation removal and maintenance.* Undesirable vegetation to be addressed in this section along with the goals for management and the acceptable level for maintenance for each species are provided in Tables 1, 2, and 3. Undesirable vegetation is categorized by ability to manage and control the species and the level of threat the species poses to natural ecosystems. The management goal and maintenance levels are expressed in percent cover. The maintenance level percent is measured as percent cover by each post-development Florida Land Use Cover and Forms Classification System (FLUCFCS) code.

1. Undesirable vegetation as listed in Tables 1, 2, and 3 shall be removed or eradicated from development sites as follows:

a. For proposed developments in which undesirable vegetation is currently acting as a visual buffer on the perimeter, a phase removal and replanting plan may be utilized with prior written approval from the county. Replanting will be consistent with Zoning code requirements.

b. For phase projects, undesirable vegetation shall be removed prior to obtaining a Certificate of Completion for each project phase as depicted on approved preliminary, construction, or site and development plans.

c. Undesirable vegetation listed in Tables 1, 2, and 3 within platted or designated

preservation or conservation areas (including conservation easements) on the project site shall be eradicated or removed. Methods for eradication or removal and disposal shall be a component of the LDR Environmental Technical Manual Resource Management Plan, Section 74-212(a)D.1.a.5. Undesirable vegetation shall be managed in accordance with the management goals and maintenance level provided in Tables 1, 2, and 3. These management goals and maintenance levels shall be a component of the LDR Environmental Technical Manual Resource Management Plan, Section 74-212(a)D.1.a.7--9. Undesirable vegetation shall be maintained at the designated or otherwise county-approved maintenance level in perpetuity. The management and maintenance plan for the proposed initial removal, or eradication, maintenance and continued control of undesirable vegetation including the proposed removal or eradication methods other than hand-clearing shall be included as components of the Resource Management Plan provided to the county for approval prior to preliminary plan, site and development or construction plan approval of the project. Noncompliance with the approved plan constitutes a violation of this section. Monitoring of undesirable vegetation within preservation and conservation areas is required. See Section D of the Land Development Regulations Environmental Technical Manual.

d. Preservation and conservation areas (including conservation easements), landscape buffers, and natural watercourses with buffers of native vegetation which contain undesirable vegetation listed in Table 3, or undesirable vegetation in Table 2 that is determined to be extremely difficult to control, or with no cost-effective method established for its control, or located in an area significantly affected by adjacent off-site seed sources, may be addressed on a case-by-case basis. The size of the preservation or conservation area, access to the area and costs of removal or eradication will be taken into consideration in approving deviations from the established management goals and maintenance levels provided in Tables 1, 2, and 3. When requesting deviations from the referenced level, the following shall be provided to the county for approval as a component of the Resource Management Plan Section 74-212(a)D:

- 1) A written explanation of circumstances that make it difficult to maintain any specific undesirable species at less than the required coverage.
- 2) A site plan overlaid on an aerial showing the aerial coverage of the identified undesirable species that is demonstrated to be difficult to control.
- 3) A description of the proposed specific maintenance activities and intervals.
- 4) The proposed management goal and maintenance level of the undesirable species in percent cover by post-development FLUCFCS code.

2. Standards for removal, maintenance and control of undesirable vegetation:

- a. Maintenance and control methods shall be updated periodically in monitoring reports (LDR Section 74-212(a)D) to reflect new technologies and information.
- b. Only EPA-approved herbicides shall be utilized in the eradication of undesirable vegetation. Any cut stumps of woody vegetation shall be treated with an EPA-approved herbicide by a licensed applicator.
- c. Maintenance of undesirable vegetation within the project site shall occur annually, at a minimum, or more frequently if necessary to effectively control these species.
- d. Best management practices shall be utilized to protect native vegetation, natural watercourses with buffers of native vegetation, and adjacent properties during the removal or eradication of undesirable vegetation. Every consideration shall be given to retaining as much of the existing native vegetation as possible.

e. Areas of undesirable vegetation removal or eradication and control shall be clearly depicted on all construction and site and development plans.

f. All removed undesirable vegetation shall be properly disposed of in an approved landfill or by other methods approved by the county.

3. Undesirable vegetation removal or eradication to fulfill requirements of this section shall not prohibit the use of these activities to fulfill wetland compensation options for mitigation credit for Sarasota County and other environmental agencies.

4. Undesirable Vegetation Tables 1, 2, and 3 reflect the Management Goals and Maintenance Levels in percent cover that shall be utilized for this Section. Undesirable vegetation listed in these tables shall be revised periodically to reflect add or delete species as necessary.

Table 1. Undesirable Vegetation with a Management Goal of 0% And Maintenance Level of 5% Cover

TABLE INSET:

SCIENTIFIC NAME	COMMON NAME	MANAGEMENT GOAL (% Cover)	MAINTENANCE LEVEL (% Cover)
<i>Acacia auriculiformis</i>	earleaf acacia	0	<=5
<i>Albizia lebbek</i>	woman's tongue	0	<=5
<i>Ardisia crenata</i>	coral ardisia	0	<=5
<i>Bischofia javanica</i>	bischofia	0	<=5
<i>Brussonetia papyrifera</i>	Paper mulberry	0	<=5
<i>Casuarina equisetifolia</i>	Australian pine	0	<=5
<i>Casuarina glauca</i>	suckering Australian pine	0	<=5
<i>Cinnamomum camphora</i>	camphor-tree	0	<=5
<i>Colocasia esculenta</i>	wild taro	0	<=5
<i>Cupaniopsis anacardioides</i>	carrotwood	0	<=5
<i>Ficus microcarpa</i>	laurel fig	0	<=5
<i>Jasminum fluminense</i>	Brazilian jasmine	0	<=5
<i>Lantana camara</i>	lantana, shrub verbena	0	<=5
<i>Leucaena leucocephala</i>	Lead tree	0	<=5
<i>Lygodium japonicum</i>	Japanese climbing fern	0	<=5
<i>Lygodium microphyllum</i>	Old World climbing fern	0	<=5
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	0	<=5

<i>Melia azedarach</i>	Chinaberry	0	<=5
<i>Mimosa pigra</i>	catclaw mimosa	0	<=5
<i>Paederia cruddasiana</i>	sewer vine, onion vine	0	<=5
<i>Phoenix reclinata</i>	Senegal date palm	0	<=5
<i>Psidium guajava</i>	guava	0	<=5
<i>Rhodomyrtus tomentosa</i>	downy rose-myrtle	0	<=5
<i>Ruellia brittoniana</i>	Mexican petunia	5	<=5
<i>Sapium sebiferum</i>	popcorn tree, Chinese tallow tree	0	<=5
<i>Scaevola sericea</i>	scaevola, half-flower, beach naupaka	0	<=5
<i>Schinus terebinthifolius</i>	Brazilian pepper	0	<=5
<i>Solanum tampicense</i>	wetland night shade, aquatic soda apple	0	<=5
<i>Solanum viarum</i>	tropical soda apple	0	<=5
<i>Syzygium cumini</i>	jambolan, Java plum	0	<=5
<i>Thespesia populnea</i>	seaside mahoe	0	<=5
<i>Wedelia trilobata</i> 1	wedelia	5	<=5

1 In coastal habitats

Table 2. Undesirable Vegetation with Management Goal of 5% Cover and Maintenance Level of 15% Cover

TABLE INSET:

SCIENTIFIC NAME	COMMON NAME	MANAGEMENT GOAL (% Cover)	MAINTENANCE LEVEL (% Cover)
<i>Dioscorea bulbifera</i>	air potato	5	<=15
<i>Ludwigia peruviana</i>	primrose willow	5	<=15
<i>Neyraudia reynaudiana</i>	Burma reed	5	<=15
<i>Paederia foetida</i>	skunk vine	5	<=15
<i>Panicum maximum</i>	Guinea grass	5	<=15
<i>Pueraria montana</i>	kudzu vine	5	<=15
<i>Rhynchelytrum repens</i>	Natal grass	5	<=15
<i>Syngonium podophyllum</i>	arrowhead vine	5	<=15
<i>Typha</i> spp. 1	cattail	5	<=15
<i>Urena lobata</i>	Caesar's weed	5	<=15
<i>Urochloa mutica</i>	Para grass	5	<=15

Non-native ornamentals	various	5	<=15
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1 Native species

Table 3. Undesirable Vegetation with Management Goal of 5% and Maintenance Level to be Determined on a Case-by-Case Basis

TABLE INSET:

SCIENTIFIC NAME	COMMON NAME	MANAGEMENT GOAL (% Cover)	MAINTENANCE LEVEL (% Cover)
<i>Alternanthera philoxeroides</i>	alligator weed	5	TBD
<i>Eichhornia crassipes</i>	water hyacinth	5	TBD
<i>Hydrilla verticillata</i>	Hydrilla	5	TBD
<i>Hymenachne amplexicaulis</i>	West Indian marsh grass	5	TBD
<i>Imperata cylindrica</i>	cogon grass	5	TBD
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil	5	TBD
<i>Panicum repens</i>	torpedo grass	5	TBD
<i>Pistia stratiotes</i>	water-lettuce	5	TBD
<i>Scirpus cubensis</i>	burhead sedge	5	TBD

TBD = To be determined on a case-by-case basis and submitted in Resource Management Plan and approved by County.

G. *Satisfying open space requirements with native habitats.*

1. Section A.1.c. of the Subdivision Technical Manual and Section A.3. of the Site Development Design Technical Manual, require that development permits shall be consistent with the "Principles for Evaluating Development Proposals in Native Habitats" located in Chapter 2, the Environment, of the Sarasota County Comprehensive Plan.

2. For development permits that have open space requirements, open space shall be consistent with Section 6.2.7.e of the Zoning Code, as amended, unless utilizing the alternatives in Section 6. For those development permits that qualify as 2050 projects, open space requirements shall be consistent with article 11 of the Zoning Code, as amended unless utilizing the alternatives in Section 6.

3. Open space shall be determined by applying the "Principles for Evaluating Development Proposals in Native Habitats," and shall favor higher functioning habitat areas. Where appropriate, open space areas shall focus on maintaining a network of connectivity throughout the landscape when greater native habitat function and value, and connectivity are clearly demonstrated.

4. Except as defined by Section 6 of this section, when land development involves the conversion of native habitats, the County's open space requirements shall be fulfilled first with habitats required to be preserved, then with habitats that should be conserved, then with other allowable types of open space, including planted and maintained littoral zones.

5. Eligibility Criteria. Areas considered for use as an open space alternative shall meet the following criteria, unless determined otherwise by the Board of County Commissioners

hereinafter referred to as "the Board":

- a. Mitigation areas may be considered so long as the mitigation area(s) was not used to satisfy open space requirements for another development.
- b. Any area(s) used to satisfy the native habitat component of open space shall not be used to fulfill any future open space requirements.
- c. Any area(s) acquired through Sarasota County environmental sensitive land protection programs shall not be considered for use as native habitat open space.

6. Net Alternatives to Subsection 4. The alternatives provided in this section do not alleviate the Zoning Code's general on-site open space requirements. If a proposal clearly demonstrates, through planned development designs and environmental management plans, greater native habitat function and value, and connectivity, the Board at a public hearing, may consider the following alternatives for conserved native habitats:

a. *On-site.*

- 1) On-site alternatives may consist of habitat restoration, enhancement, and/or creation.
- 2) On-site alternatives are preferred to the native habitat requirements of Section 6.2.7.e of the Zoning Code, as amended, if the on-site alternative provides greater environmental benefits to a protected habitat system that is either on-site or is immediately adjacent to the site.
- 3) All restoration, enhancement, and/or creation activities authorized pursuant to this section shall be consistent with the Environmental Technical Manual.
- 4) On-site alternatives shall be evaluated using the Evaluation Parameters set forth in Section 7.

b. *Off-site.* Off-site alternatives shall be located in close proximity to where the development is proposed in order to provide local benefits to the community.

- 1) Off-site alternatives shall only be allowed for parcels that are located within the Urban Service Boundary.
- 2) Off-site alternatives may consist of preservation or new habitat restoration, enhancement, and/or upland creation on sites not previously preserved.
- 3) If an area is proposed to be preserved off-site to fulfill native habitat open space requirements, the Board may deny the proposal if the area would otherwise be preserved under current Land Development Regulations. However, the Board may consider such an area if the applicant proposes enhancement or restoration of the area that is consistent with the Evaluation Parameters and clearly demonstrates greater native habitat function and value, and connectivity.
- 4) The County may, at its discretion and where necessary to offset impacts of development, require fee title conveyance, a conservation easement, and/or other appropriate legal or financial mechanisms to ensure conservation and proper maintenance of off-site alternative areas. No development or construction activities may occur until such time as the appropriate instruments have been approved by the County, executed, and filed in the official public records.
- 5) All preservation, restoration, enhancement, and/or creation activities authorized pursuant to this section shall be consistent with the Environmental

Technical Manual.

6) Off-site alternatives shall be evaluated using the Evaluation Parameters set forth in Section 7.

7. Evaluation Parameters. The following parameters, at minimum, shall be used to evaluate existing native habitats and alternative open space proposals to determine whether they clearly demonstrate greater native habitat function and value, and connectivity. The relative importance and relevance of the parameters shall be evaluated to reach a balanced determination.

a. *Connectivity and Landscape Position.*

- 1) Location.
- 2) Proximity to adjacent habitats.
- 3) Proximity to incompatible land uses.
- 4) Existing and potential connectivity, including on-site and off-site parcels.
- 5) Effectiveness in facilitating wildlife movement and dispersal.
- 6) Proximity to habitats proposed for impact.

b. *Habitat Quality.*

- 1) Significance to listed or keystone species.
- 2) Diversity (plant and animal).
- 3) Level of restoration/enhancement proposed.
- 4) Buffering of other native habitats.
- 5) Quality of the native plant assemblages.
- 6) Extent of nuisance and invasive plant species.
- 7) Level of disturbance/perturbation.

c. *Manageability.*

- 1) Long-term prognosis.
- 2) Reasonable assurances.
- 3) Certainty of success.

d. *Community Structure.*

- 1) Diversity of habitats and ecotones.
- 2) Structural complexity.

e. *Size.*

- 1) Areal extent of habitat.
- 2) Scale of the spatial significance.

f. *Accessibility.*

- 1) Must be balanced against habitat values/functions.
- 2) Accessibility could be positive or negative for project.
- 3) Public vs. private.

- [4) Reserved.]
- 5) Level and control of accessibility.
- 6) Linkage with offsite or regional trail systems.
- 7) Handicap accessibility.
- 8) Environmental education components.

g. *Comprehensive Plan.*

- 1) Consistency Review.

(Ord. No. 2000-074, § 9, 2-27-2001; Ord. No. 2003-028, § 5, 11-12-2003; Ord. No. 2004-065, § 2, 6-15-2004; Ord. No. 2005-014, § 3, 3-16-2005; Ord. No. 2007-097, §§ 1--3, 2-12-2008; Ord. No. 2008-015, §§ 1--3, 3-12-2008; Ord. No. 2008-042, § 3, 4-22-2008)

ROAD CONSTRUCTION TECHNICAL MANUAL

A. General provisions.

1. Jurisdiction. These regulations shall apply to all unincorporated areas of Sarasota County and shall also apply to those streets in municipalities that are included in the County road system. These regulations, including drainage design criteria as defined in the Subdivision Technical Manual, shall also apply to County capital improvements for existing roads and for new roadways. Those road improvement projects under the public improvement district (PID) process are exempt from this chapter. Variances to these standards may be granted in accordance with the provisions contained in Division D1.2.

They may also be applied to any other incorporated municipality in Sarasota County, provided the governing body of such municipality elects to come under the jurisdiction of these regulations.

2. Purpose. These regulations are adopted for the purpose of establishing the minimum standards of road and highway construction in Sarasota County.

B. Construction standards, materials and specifications.

Sarasota County hereby adopts as minimum construction standards the specifications contained in the following:

- 1. The Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, State of Florida, latest edition, (the "Green Book").
- 2. The Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2000, Division II and III and all subsequent amendments.
- 3. The Florida Department of Transportation Roadway and Traffic Design Standards 2000 except as amended herein.

The Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2000, Divisions II and III are amended or clarified as follows:

- a. General. It is understood that these specifications are to be applied to private sector development. In such cases references to "compensations", "methods of measurement" and "basis for payment" are of concern only to the owner and his contractor and may be modified by them as they see fit.
- b. References to the Director or Secretary shall be interpreted to mean the Sarasota County Engineer.

References to Department shall be interpreted to mean the Sarasota County Land Development Services.

References to Engineer shall be interpreted to mean the Sarasota County Engineer.

References to Inspector shall be interpreted to mean the Sarasota County Inspector.

C. *Right-of-way utilization.*

1. Road and street construction. All roads and streets to be constructed or improved in existing rights-of-way and all roads constructed in accordance with the standards contained in the Subdivision Technical Manual and the Site and Development Design Technical Manual, as applicable, and the standards contained in this division.

2. Right-of-way permits required. No work may be performed in County rights-of-way or easements until plans have been submitted and a right-of-way use permit issued by the County Engineer, or his designee. Fees for right-of-way use permits shall be established by separate resolution. No docks or other structures which access water bodies shall be constructed within a public right-of-way, except as specifically authorized by the Board of County Commissioners by agreement. The Administrator is authorized to remove any structure in violation of this section after notifying the closest abutting property owner by certified mail ten days in advance of the removal, and notifying that owner of the opportunity to file an appeal within ten days through the process provided in Section 74-36(b).

a. Requirements for right-of-way use permits. Applicants for right-of-way use permits shall submit the following to Land Development Services:

1) Completed application signed by the applicant or agent.

2) Six copies of the construction plans, with the following items: general location map; standard paper size of 11 x 17, 18 x 24 or 24 x 36 border with title block to contain project name, company, designer name, dates and sheet numbers; scale of one inch = 10 feet, one inch = 20 feet, one inch = 30 feet, one inch = 40 feet or one inch = 50 feet; north arrow; plan should include all rights-of-way, easements, utilities, roadways, swales and driveways, all labeled; and a cross-section of all roadway crossings (allow ten working days for review).

3) An executed right-of-way use bond or other form of surety acceptable to Land Development Services and the Office of the County Attorney in an amount of not less than \$15,000.00, to ensure against any damage that may take place within rights-of-way and easements. Surety in an amount less than \$15,000.00 is permissible if accompanied by a registered professional engineer's estimate that any cost of restoration will be less than \$15,000.00. All restoration shall leave the right-of-way or easement in a condition which is as good or better than that which existed prior to construction.

b. General provisions for right-of-way use permits. The following general provisions shall apply to all rights-of-way use permits, and shall be expressly incorporated into each such permit issued. Application for and acceptance of the permit shall constitute agreement to these provisions.

1) The applicant shall declare that all existing aerial and underground utilities have been located and the appropriate utilities notified of the proposed work.

2) The Inspection Services Section of Land Development Services must be notified at least twenty-four hours prior to commencement of construction operations.

3) All required sketches, plans and cross-sections covering details of this

work shall be attached to and become a part of this permit. Any changes made to the drawings or stipulations made thereon must be approved and shall become part of the permit. A copy of all required sketches, plans, cross-sections and any subsequent changes to these must be retained at the job site and an additional copy filed with Land Development Services.

4) Prior to construction, the applicant receiving the permit shall make all necessary provisions for the accommodation and convenience of traffic and shall take safety measures, including the placing and display of caution signs and signals as required by the Manual on Uniform Traffic Control Devices for Streets and Highways. The applicant shall further prevent obstructions or conditions which are or may become dangerous to the traveling public. The authority to close off a street or easement in its entirety rests entirely with the County Engineer.

5) The applicant shall notify the Sheriff's Department and the concerned Ambulance and Fire Districts prior to any street closing (when approved by the County Engineer), street opening and/or pavement excavation.

6) Fire hydrants shall be left accessible at all times.

7) All pavements repairs shall be effected under the direct supervision of Land Development Services.

8) Existing utility services shall not be disrupted without the specific authority of the concerned utility and public notification by newspapers, the airways or through the use of door hangers, that said disruption will occur. Repairs determined to be of an emergency nature are not subject to the notification procedure.

9) The flow of stormwater within the drainage facilities shall remain unimpeded. Adequate measures will be taken to prevent pollution of water in the area from run-off, and pollution of the air from dust, during the course of construction and restoration.

10) Any public or private property which is used or affected by a project will be maintained and preserved from damage during the operation, and restored to its original condition upon completion or cessation of work.

11) It is expressly stipulated that any permit issued is a license for permissive use only and that the placing of facilities upon public property pursuant to the issuance of a permit shall not operate to create or to vest any property right in a permit holder and that said holder may be required to make, at their own expense, any changes, alterations or replacement as necessitated by changed conditions.

12) The applicant shall indemnify and hold harmless County Commission and all its officers, agents and employees from all suits, actions or claims of whatever nature which may arise, occasioned whether directly or indirectly by the work permitted or the special privileges granted hereunder.

13) Land Development Services reserves the right to revoke any permit issued without other formality than that of notifying the applicant to this effect.

14) All work shall be constructed in accordance with the FDOT Utility Accommodation Manual, Document No. 710-020-001-d, January 1999. It is understood that the manual is for construction purposes, not permitting purposes.

3. Exemptions. Exemptions from the requirement to obtain right-of-way-use permits shall be as follows:

- a. Activities authorized through approved County roadway and drainage capital improvement projects. This does not include utility related construction.
- b. Routine maintenance operations. The other provisions of this chapter notwithstanding, "work" as used herein shall not include routine maintenance operations by public utilities franchised or otherwise regulated by Sarasota County of the State of Florida; no right-of-way use permit shall be required for such operations.

4. Culvert permits required. A culvert permit shall be required for residential access driveways and full front culvert projects within County rights-of-way with open drainage systems. Fees for culvert permits may be established by separate resolution.

- a. Requirements for culvert permits. Applicants for culvert permits shall submit a completed application signed by the applicant or agent.
- b. General provisions for culvert permits. The following general provisions shall apply to all culvert permits:
 - 1) Culvert pipe shall be installed prior to commencement of home construction.
 - 2) Culvert size and/or swale elevation shall be determined by the County Engineer based on standard engineering practices.
 - 3) Culverts shall be reinforced pipe, asphalt-coated corrugated metal pipe, or others as approved by the County Engineer based on standard engineering practices.
 - 4) Driveway culverts shall be a minimum of 20 feet in length, and a maximum of 24 feet in length. Additional lengths may be required if depth of the ditch is greater than normal. (See Appendix C11).
 - 5) If the diameter of the pipe is 24 inches or greater, metered end sections shall be required. (See Appendix C11).
 - 6) Full front culvert projects shall require perforated pipe (bottom only). (See Appendix C11).
 - 7) Full front culvert projects shall required a minimum of one catch basin per lot. Additional catch basins may be required as determined by the County Engineer based on standard engineering practices (approximately every 50 feet).

5. Utility crossings.

a. Scope of work. The work specified in this section shall consist of the method to be used for repair of roadways when open cuts are authorized and when backfilling of utility trenches is required in rights-of-way or easements. In order to reduce to a minimum the necessity for roadway repair, roadway cuts shall be authorized only when they are specifically justified and authorized by the County Engineer based on standard engineering practices. Jack and bore or directional bore crossings will normally be required under Portland or asphaltic cement concrete roadways. Jetting under roadways is not permitted. Open cuts may be authorized by the County Engineer under the following circumstances:

- 1) When multiple crossings of a street become necessary due to major utility line installation (or for some other cause), open cuts may be authorized as long as the entire street section involved is resurfaced.

- 2) When the affected section of roadway is in poor condition, as determined by the County Engineer based on standard engineering practices.
 - 3) When the affected section of roadway is scheduled for resurfacing in the next two years.
 - 4) When due to conflicts with existing utilities or other constraints, it would not be possible to accomplish the crossing by any other means or when the existing utility line to be connected to is under the pavement.
- b. Repair of open cuts. Where open cuts in the travelway are authorized, backfilling of the trench and road repair shall be done as shown on Appendix C19, or Appendix C20.
 - c. Backfilling of trenches out of traveled way but within right-of-way.
 - 1) Trenches located in the roadway shoulder (normally within six feet of the edge of pavement) shall be backfilled as specified for trenches in the traveled way (See Appendix C19).
 - 2) Trenches located outside the traveled way and shoulder shall have backfill compacted to a 95 percent density as determined by A.A.S.H.T.O. Method T-180.
 - 3) The completed trench shall be hydro-mulched or sodded based on standard engineering practices as determined by the County Engineer or his designee.
 - d. Utility crossings constructed as part of new road construction shall be in accordance with the provisions of Appendix C12.
6. Construction specifications. All construction, repairs and/or restorations within County rights-of-way and easements shall comply fully with the provisions of the Road Construction Technical Manual and Appendix D1 of these regulations.

(Ord. No. 2000-074, § 9, 2-27-2001)

DEVELOPMENT IMPROVEMENTS TECHNICAL MANUAL

A. *General.* A Florida registered professional engineer shall design, inspect and certify the installation of all required public and private improvements. All plans for improvements shall be prepared by such engineer and are subject to review and approval by the County prior to construction. All required improvements shall be installed at the expense of the developer. The engineer of record shall certify on the cover sheet of the plans that the facilities comply with all applicable standards, including the Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways and the Sarasota County Land Development regulations (See Appendix C18). Upon completion of improvements, the engineer of record shall certify that improvements are constructed in substantial compliance with plans authorized for construction and with all development orders (See Appendix C30). The registered landscape architect of record shall certify the landscaping has been installed in substantial compliance with the approved plan and the Zoning Code, prior to the certification of the project by the engineer of record (See Appendix C31).

B. *Rights-of-way, accessways and parking areas.*

1. *On-site accessways and parking area improvements.* On-site accessway and parking area improvements designed in accordance with these regulations shall conform to the

following specifications and shall be constructed in accordance with Road Construction Technical Manual of these regulations. Construction access if different from the permanent access shall be shown on the site plan.

- a. Access and accessway width. Residential condominiums, single family subdivisions, villas, duplexes or apartment complexes having 100 dwelling units or more, shall have two or more fully functional access points unless the County Engineer and the Fire Marshal determines that the design of a single access provides safe and reliable ingress and egress. A minimum pavement width of 20 feet shall be required for two-way traffic or 15 feet for one-way.
- b. Cul-de-sac. Any cul-de-sac used as part of a private drive, road or public road within a development shall have a maximum length of 1,500 feet. A turn-around shall be provided at the end of the cul-de-sac.
- c. Curb and gutter. Where curb and gutter are to be used they shall conform to Appendix C9.
- d. Swales. A Type "H" curb (See Appendix C9) or other adequate pavement edge protection may be used in excessively drained and somewhat excessively drained to moderately well drained, soils, except where closed drainage is required.
- e. Subgrade and pavement structural base course. According to the specifications of Appendix D2.
- f. Asphaltic cement concrete wearing surface. As required by Appendix D2.
- g. Grassing and mulching. Prior to the issuance of any certificate of occupancy, the developer shall be responsible for ensuring that all swales, parkway medians, percolation areas and planting strips shall be sodded, seeded or planted and mulched in accordance with the Zoning regulations and Division D of these regulations. Sodding for erosion control at the back of curbs and at the pavement edges shall be provided.
- h. Traffic control devices. The developer shall cause to be designed and constructed the necessary traffic control devices based on current editions of the Manual of Traffic Control Devices for Streets and Highways; the Manual of Uniform Traffic Standards for Design, Construction and Maintenance of Streets and Highways, and the Sarasota County Design Standards and Specification Manual for Traffic Control Devices and Street Lighting; and sound engineering practices, as determined by the County Engineer.
- i. Underdrains. Underdrains shall be required for developments unless a soils report, prepared by a Florida registered engineer practicing in soils and determined sufficient by the County Engineer based on standard engineering practices, indicates that such drains are unnecessary. (See Appendix C10).
- j. Bridges. Bridges and approaches shall be designed and constructed in accordance with "A Policy on Geometric Design on Highways and Streets" (current edition, A.A.S.H.T.O.).
- k. Sidewalks and handicap parking spaces. All projects shall be required to comply with the Florida Accessibility Code and where applicable, with the Fair Housing Act.

2. *Off-site right-of-way dedication and improvements.*

- a. Right-of-way dedication. Prior to construction plan approval the developer shall dedicate any required right-of-way.
- b. Intersection improvement and traffic control devices. The developer shall cause to be designed and constructed necessary traffic control devices, and acceleration,

deceleration and turning lanes (hereinafter referred to as traffic improvements) required by the County or other jurisdiction. Said traffic improvements shall include those needed outside the boundaries of the development which are necessary to achieve and maintain traffic safety under the increased traffic projected to be generated by the entire development. Where the County Engineer determines based on standard engineering practices that the need for traffic improvements is not solely attributable to a particular development, the developer shall be required to deposit with the County a pro rata share of the cost of necessary traffic improvements attributed to the development by the County Engineer in accordance with these standards. Required traffic improvements shall be indicated on the approved plans for the development, and conform to current editions of the Manual of Uniform Traffic Control Devices for Streets and Highways, the Manual of Uniform Traffic Standards for Design, Construction and Maintenance of Streets and Highways and sound engineering practice as determined by the County Engineer.

In accordance with the approved plans, the developer shall complete the installation of all required traffic control devices and acceleration, deceleration and turning lanes prior to the issuance of any certificate of occupancy for the development.

3. *Roadway level of service.*

a. A level of service (LOS) standard of "C" peak hour, based on a 100 hour design criteria (hereafter referred to as LOS "C"), shall be required for all County maintained arterials and collectors except those roadways that have been designated as either constrained or backlogged facilities. Constrained County facilities are defined as roadways operating below LOS "C" which are not capable of attaining LOS "C" because prohibitive costs or environmental limitations prevent the construction of at least two additional through lanes. Backlogged County facilities are defined as roadways operating below LOS "C" standard which do not have prohibitive financial or environmental constraints but are not scheduled for major capacity improvements in the County's Five-Year Schedule of Capital Improvements (Table 10-3 in the Capital Improvements Chapter of Apoxsee). The designated constrained and backlogged County facilities are listed in Table 6-5 of Apoxsee's Transportation Chapter.

b. The minimum level of service standards adopted by Sarasota County for roads designated on the State Highway System and under the jurisdictional responsibility of the Florida Department of Transportation shall be based on and consistent with the Statewide minimum level of service standards set forth in Chapter 14-94, Florida Administrative Code, and contained in Appendix F, Section 3, of the Transportation Chapter of Apoxsee.

c. The review and approval of development orders shall ensure that such approval will not degrade the LOS of those constrained and backlogged roadways, specified in Table 6-5 of Apoxsee's Transportation Chapter, below that which existed on the effective date of the Comprehensive Plan Amendment RU-34 Update (7/8/97). For those roadways experiencing a LOS "F" on this effective date, degradation of LOS shall be determined by specific operating thresholds, such as an average travel speed or volume/capacity ratios which will be adopted by ordinance as part of the County's Concurrency Management System.

C. *Stormwater management.*

1. *General.* A complete stormwater management system shall be provided for the treatment and control of stormwater runoff that originates within the development, or that flows onto or across the development from adjacent lands. Said stormwater management system shall be designed in accordance with Southwest Florida Water Management District criteria provided in the District's Permit Information Manual and modified as necessary to

comply with Sarasota County Stormwater Management regulations. The designs shall be based on a 100-year, 24-hour storm and the level of service criteria given in Appendix C14. The system shall be designed for long life, low cost, and ease of maintenance by normal methods. Drainage calculations shall be based on appropriate hydrologic design methods as approved by the County.

A Redevelopment Plan submitted in conjunction with a Site and Development Plan and Construction Engineering Plan shall be subject to the stormwater management regulations contained in Section 6.10.5.1. of the Zoning Ordinance and the stormwater management regulations provided below. In the event that the regulations in Section 6.10.5.1. of the Zoning Ordinance are in conflict with the regulations provided below, Section 6.10.5.1. shall prevail.

A Site and Development Plan and Construction Engineering Plan for development authorized by the Planned Mixed-Use Infill (PMI) zoning district shall be subject to the stormwater management regulations contained in Section 6.11.5.m of the Zoning Ordinance and the stormwater management regulations provided below. In the event that the regulations in Section 6.11.5.m. of the Zoning Ordinance are in conflict with the regulations provided below, Section 6.11.5.m. shall prevail.

- a. The rational method may be used for developments of ten acres or less.
- b. For developments greater than ten acres, runoff hydrographs shall be developed and routed through the proposed stormwater management system.
- c. Predevelopment peak discharges and flood stages shall be consistent with those determined through the most recent County basin model or best available data based on a 100-year 24-hour storm. In areas of known stormwater problems or with restrictive downstream conveyances, allowable peak outflows shall be as determined by the most recent County study or best available data.
- d. Post-development peak discharges and hydrographs shall be based on a 100-year, 24-hour storm for the proposed conditions.

2. *Swales.* Swales within the development shall be sodded and have slopes no greater than four to one. Normal swale sections shall be minimum of six inches deep.

3. *Open channels and outfall ditches.* With the exception of swales and major drainage ways, open drainage ways within 100 feet of school sites shall not be permitted unless specifically approved by the Board. In these areas drainage plans shall provide that stormwater be collected in properly designed systems of underground pipes, inlets and other appurtenances and be conveyed to an ultimate positive outfall beyond the outer edge of the development or at the nearest natural outfall. Where permitted, open drainage ways shall retain natural characteristics and be so designed and protected that they do not present a hazard to life and safety. Protection against scour and erosion shall be provided as required by the County Engineer based on sound engineering practice.

4. *Disposition of stormwater; drainage level of service.* Stormwater quality: No discharge from any stormwater management facility shall cause or contribute to a violation of water quality standards in waters of the State as provided for in State Statutes. Further, the County will develop and set criteria, based upon State and local regulations that will set a community level of water quality standard for stormwater discharge facilities. Stormwater Quantity: No discharge from any stormwater management facility shall cause adverse increases in off-site flood levels. A complete stormwater management system shall provide adequate control of stormwater runoff. In order to avoid burdening downstream drainage ways and for general conservation purposes, the following specific guidelines are as follows:

- a. Drainage designs shall provide for the attenuation/retention of stormwater from

the site. Where basin model updates are available, they must be used as the basis of review for development proposals equal to or exceeding a total area of 35 acres or impervious area of eight acres to demonstrate no adverse increase in off-site flood stages. For all other sites, water released from the site shall be in such a manner as to assure that the rate of runoff after development is less than that before development. At least six inches of freeboard shall be provided above the 100-year flood elevation in attenuation ponds and lakes. The attenuation ponds and lakes shall have at least a two foot berm top width.

b. A 100-year event flood analysis shall be provided for the site demonstrating no inundation of habitable structures.

c. Drainage systems shall include special engineering design features to minimize pollution from oil, suspended solids and other objectionable materials. Wet detention treatment systems shall be designed to treat one inch of runoff; other treatment systems shall be designed to treat the runoff resulting from the first one inch of rainfall. Stormwater systems discharging directly into saltwater tidal systems, bays, or the gulf shall be designed to treat one and one-half times the volume required for the selected treatment system. Runoff from the area being developed or redeveloped shall be treated.

d. Stormwater systems shall be designed to reduce floating and suspended solids to a minimum.

e. Drainage structures (inlets, manholes, control structures, etc.) shall be designed to minimize ponding within the structure.

f. No cutting, clearing, grading or filling shall be accomplished on any site under development unless appropriate devices, as shown in the best management practices plans, have been installed to minimize pollution from objectionable materials, to control erosion, and to remove sediment from surface water runoff. Appropriate techniques shall also be utilized to stabilize and revegetate disturbed areas as soon as possible.

g. A plan for operating and maintaining the stormwater management system shall be provided. The plan shall include a schedule of tasks to be performed including periodic dredging and silt removal by the designated responsible entity and shall be sufficient to ensure proper performance of the system.

h. A construction plan stormwater review checklist (See Appendix C25) and a construction plan stormwater design summary form (See Appendix C26) will be required for all developments which are not a part of a previously approved stormwater management system.

5. *Attenuation and retention facilities.*

a. Underground facilities are not acceptable unless adequate justification and demonstration of reliable performance can be provided to the satisfaction of the County Engineer based on standard engineering practice. Underground facilities shall provide for easy inspection, access and maintenance. Voids in gravel or similar material cannot be included in the calculation of a treatment or attenuation storage.

b. Appendix C15 defines the methodology to be used to determine attenuation volumes for stormwater management designs utilizing the rational method.

c. Dry detention ponds greater than 150 feet in length shall have a concrete low flow v-channel. The v-channel shall be a minimum of two-feet wide and approximately two inches deep and at least four-inches thick. The dry pond bottom slopes shall be a minimum 0.1 percent.

d. Chain-link and wood fences are prohibited around stormwater facilities.

e. A master stormwater management system, including attenuation and treatment facilities, will be required for all properties that are the subject of the same rezone petition and/or special exception. The master stormwater management system shall fully accommodate and benefit all lots, parcels or tracts within the rezoned property. The master stormwater management system shall be approved prior to or concurrent with the first site and development plan for the site.

6. *Regional attenuation facilities.* The use of regional stormwater attenuation facilities in lieu of on-site facilities is encouraged. Documentation shall be provided demonstrating that proposed regional facilities adequately serve the intended service area without adverse impacts up or downstream. Any party or group of parties interested in creating a regional facility should contact the Sarasota County Stormwater Manager to present their proposal to the Regional Facilities Committee.

7. *Inlet spacing.* Inlets shall be spaced in such a manner as to accept 100 percent of the design runoff. The actual required spacing will depend on the characteristics of each particular site.

8. *Dedications.* Except for drainage easements and drainage structures, which are to remain private, all drainage easements and drainage structures, which are to become public, shall be dedicated to Sarasota County at no expense to the County. Dedication for drainage ditches shall include a suitable berm (shoulder) width for maintenance operations and be in accordance with Appendix C13. Said berm shall be cleared of trees, shrubs and other obstructions and shall have adequate equipment access. Suitable maintenance areas for the other drainage structures shall also be dedicated to the County. If the dedications do not appear in the recorded plat, then a separate instrument must be prepared and recorded prior to construction.

9. *Ditch crossing.* Utilities crossing under County maintained ditches shall be designed in accordance with Appendix C16.

10. *Maintenance.*

a. If required drainage easements and drainage structures are to remain private, an instrument acceptable to the County Attorney shall be recorded in the public records identifying a designated responsible entity which shall be responsible for the operation, maintenance and repair of the drainage easements and structures. The instrument shall provide that if the drainage easements and structures are not adequately maintained in accordance with County standards, the County shall have the right but not the obligation to go on the property and perform all necessary operation, maintenance, and repair functions. All expenses of such operation, maintenance, and repair shall become a lien against the property which may be foreclosed by the County (Per Ordinance 99-050).

b. Where a new development contains historic drainage ditches and drainage structures within its boundaries, these ditches and structures shall either be dedicated to Sarasota County or maintained by a designated responsible entity as provided above. If an owner cannot legally comply with the dedication or maintenance requirements of this section, the County, by virtue of approving and recording the final plat, shall have a right and license in perpetuity to enter upon the property for the purpose of operating, maintaining and repairing such historic drainage ditches and structures. The right and license to maintain historic drainage ditches and structures shall be exercised in the discretion of the County and shall impose no affirmative obligation on the County to perform such functions. Such right and license shall automatically terminate at such time as the historic drainage ditches and drainage structures no longer exist or function as drainage facilities.

c. If there is no designated responsible entity having the obligation to maintain the capacity of the off-site drainage system receiving stormwater discharge from the site, the applicant requesting development approval shall fulfill one of the following:

- 1) Provide:
 - a. The on-site stormwater management system serving the development shall be designed to assume nonmaintenance of the receiving water system;
 - b. An executed agreement recorded in the public records, indemnifying the County for any attorney's fees or costs incurred as a result of the County's approving the development.
- 2) Obtain a private drainage and maintenance easement and identify the entity responsible for maintenance of the capacity of the receiving drainage system.
- 3) Obtain and provide a public drainage and maintenance easement to the County for maintenance of the capacity of the receiving drainage system by the County.
- 4) Pay the County's costs of condemning the receiving drainage system, including any award to the landowner, of obtaining a drainage and maintenance easement for maintenance of the capacity of the receiving drainage system by the County.

11. *Best management practices.* A best management plan showing the placement of silt screens, hay bales, and other standard erosion control devices shall be provided on all projects, in accordance with FDOT standards.

- a. The silt screens must be installed prior to disturbing the site's vegetation.
- b. Failure to install or properly maintain the silt screens or other portions of the best management plan shall be reason to place a stop work order on the site until such time the deficiencies are corrected.

D. *Potable water supply systems.*

1. *Potable water system.*

a. Central potable water system. A central potable water system shall be provided in all new developments. Connection shall be required with a central water system where an existing system is within a given distance from a point on the perimeter of the development closest to the source of service and measured along an accessible right-of-way or easement, provided:

- 1) The system has sufficient capacity to allow such a connection; and
- 2) Any rules or regulations that govern said system can be amended to accommodate such a connection.

Distance requirements will be prorated based upon the number of approved equivalent dwelling units (EDUs) over 15 units within the development and will be calculated according to the following schedule:

TABLE INSET:

Number of approved EDU's within the Development # of EDU's	Connection with a central system will be required if within: Distance (Ft.)
---------------------------------------------------------------	--------------------------------------------------------------------------------

Up to 15	1,320
16 to 50	1,900
51 to 100	2,700
101 to 150	3,050
151 to 200	3,400
201 to 250	3,750
251 to 300	4,100
301 to 350	4,450
351 to 400	4,800
401 to 450	5,150
451 to 500	5,500
501 to 550	5,750
551 to 600	6,000
601 to 650	6,250
651 to 700	6,500
701 to 750	6,750
751 to 800	7,000
801 to 850	7,250
851 to 900	7,500
901 to 950	7,750
951 to 1,000	8,000

Distance requirements for connection to a central potable water system shall be prorated within this schedule based upon the number of approved EDUs within the new development. Larger developments (i.e., Developments of Regional Impact [DRI] and Developments of Critical Concern [DOCC] shall be evaluated on an individual basis within the guidelines of all applicable Federal, State and County regulations.

If a County or other existing central water system does not exist within the above requirements, or is not available under 1) or 2) above, an on-site central potable water system is required. Where the developer provides a central potable water system utilizing a temporary water treatment plant, the completed plant, lines, and all other appurtenances shall be deeded at no cost to Sarasota County to be operated and maintained by the County, unless dedication is waived by the Board.

b. Water quality standards. All central potable water systems shall provide water meeting quality standards as described in Chapter 403, Florida Statutes, "Florida Safe Water Drinking Act" and Chapter 62-550 Florida Administrative Code, and as prescribed by the U.S. Environmental Protection Agency.

c. Design standards. Central potable water systems shall be designed by a Florida registered professional engineer in accordance with these regulations, with the requirements of applicable County, State and Federal ordinances, statutes, and regulations, and with the following minimum design standards:

1) Central potable water systems shall be designed and constructed in accordance with the domestic requirements established by the appropriate state agency and the fire protection requirements established by the National Fire Protection Association (NFPA).

2) In-line valves shall be installed at intervals so that no break or repair will necessitate shutting down a length of pipe greater than 500 feet as measured along the street in nonresidential and multifamily developments.

3) Central potable water systems shall be designed to be compatible with the County central potable water systems or other approved existing surrounding central potable water systems. In addition central potable water distribution mains shall be designed and constructed to extend across the total roadway frontage of new developments. All mains shall be interconnected with other area mains and lines whenever possible to ensure proper mutual support.

2. *On-site central potable water systems.* On-site central potable water systems which serve eight or fewer equivalent dwelling units may be permitted when the requirement for a central water system is exempted pursuant to the Development Improvement Technical Manual. Developments not provided with a central water system shall have drafting points connected to available bodies of surface water consisting of a minimum eight-inch pipe with standard fire hose connection or sump and providing two hours of fire flow capacity or developer can meet fire flow with the installation of a fire sprinkler system supplied by an approved water source (i.e., stored water pressure tank, etc.). All development provided potable water systems shall also meet these requirements or those of chapter 10D-4, Florida Administrative Code, whichever are applicable.

3. *Potable water level of service:*

a. System capacity shall be based on 250 gallons per equivalent dwelling unit per day based on maximum daily flow plus the maintenance of minimum fire flow standards.

b. Minimum potable water quality standards shall be as defined by the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection, except when the County has imposed stricter standards.

E. *Sanitary sewerage system.*

1. *Central sanitary sewerage systems.* A central sewerage system shall be provided in all new developments.

a. Central sewerage system. A central sewerage system shall be provided in all new developments. Connection shall be required with a central sewerage system where an existing system is within the distance listed below from a point on the perimeter of the development closest to the source of service and measured along an accessible right-of-way or easement, provided:

- 1) The system has sufficient capacity to allow such a connection; and
- 2) Any rules or regulations that govern said system can be amended to accommodate such a connection.

Distance requirements will be prorated based upon the number of approved equivalent dwelling units (EDUs) 16 or more units within the development and will be calculated according to the following schedule:

TABLE INSET:

Number of approved EDU's within the Development # of EDU's	Connection with a central system will be required if within: Distance (Ft.)
Up to 15	1,320

16 to 50	1,900
51 to 100	2,700
101 to 150	3,050
151 to 200	3,400
201 to 250	3,750
251 to 300	4,100
301 to 350	4,450
351 to 400	4,800
401 to 450	5,150
451 to 500	5,500
501 to 550	5,750
551 to 600	6,000
601 to 650	6,250
651 to 700	6,500
701 to 750	6,750
751 to 800	7,000
801 to 850	7,250
851 to 900	7,500
901 to 950	7,750
951 to 1,000	8,000

Distance requirements for connection to a central sewerage system shall be prorated within this schedule based upon the number of approved EDUs within the new development. Larger developments (i.e., Developments of Regional Impact [DRI] and Developments of Critical Concern [DOCC]) shall be evaluated on an individual basis within the guidelines of all applicable Federal, State and County regulations.

If a County or other existing central sewer system does not exist within the above requirements, or is not available under 1) or 2) above, the Board may approve a central sewerage system. Where the developer provides a central sewerage system utilizing a temporary sewer treatment plant, the completed plant, lines and all other appurtenances shall be deeded at no cost to Sarasota County to be operated and maintained by the County, unless dedication is waived by the Board.

A central sewerage system shall be provided in all new developments (commercial, industrial and residential) where estimated development sewage flow will exceed 2,000 gallons per day.

When appropriate, in order to provide for future service to the area, a central collection or transmission main, as appropriate, shall be designed and constructed to extend across the total roadway frontage of new developments.

b. Design standards. Central sewerage systems shall be designed by a Florida registered engineer in accordance with these regulations, the requirements of applicable County, State and Federal statutes and regulation and the following minimum design standards:

- 1) Central sewerage systems shall be designed, constructed and maintained in such a manner as not to adversely affect the water quality of any existing stream, lake, or underground aquifer.

2) Central sewerage systems shall be designed to be compatible with the County central sewerage systems or other approved existing surrounding central sewerage systems.

c. Exemption from central sewerage system requirement. Developments shall be exempt from the provisions of 1) above, under the following conditions:

1) Developments having lots or parcels of record of less than one acre that existed prior to June 30, 1981, may be developed with on-site sewerage disposal systems upon compliance with the requirements of Sarasota County Ordinance 97-093 and Chapter 64E-6, Florida Administrative Code, as they may be amended from time to time.

2) The division of a parcel of land into two lots, where the parcel to be divided has been created or divided since June 30, 1981.

a. Developments having a minimum lot size of at least one acre (43,560 sq. ft.) Excluding any public or private road rights-of-way, and a minimum average lot dimension of 150 feet may be developed with an on-site sewerage disposal system and a potable water well upon compliance with the requirements of Sarasota County Ordinance No. 97-093 (Design, Construction and Repair of On-Site Sewerage Systems) and Chapter 64E-6 of the Florida Administrative Code, as they may be amended from time to time.

b. Developments have a minimum lot size of at least one-half acre (21,780 sq. ft.) excluding any public or private road rights-of-way and having a minimum average lot dimension of 100 feet may be developed with connection to a central potable water supply system and an on-site sewerage disposal system upon compliance with the requirements of Sarasota County Ordinance No. 97-093 (Design, Construction and Repair of One-Site Sewerage Systems) and Chapter 64E-6 of the Florida Administrative Code, as they may be amended from time to time.

2. *Individual on-site sewerage disposal systems.* Individual on-site sewerage disposal systems with a treatment capacity of less than 2,000 gallons per day may be permitted when the development is exempt from the central sewerage system requirement, pursuant to the Development Improvement Technical Manual. Such individual system shall fulfill the following requirements:

a. No on-site sewage disposal systems shall be located within 100 feet (when measured along the ground) of the ordinary high water mark of non-tidal lakes, streams, canals, bays, rivers and ponds or within 100 feet of the mean high water line of tidal bodies of water, including bays and tidal portions of rivers, streams and canals.

b. Satisfactory engineering plans shall be submitted indicating the proper water table/wastewater system separation, as provided for in Sarasota County Ordinance 97-093 (Design, Construction and Repair of On-Site Sewerage systems) and Chapter 64E-6 of the Florida Administrative Code, as they may be amended from time to time.

3. *Sanitary sewer level of service:*

a. Minimum average daily flow to be treated from domestic units shall be designed to provide 200 gallons per equivalent dwelling unit per day; and

b. Minimum effluent treatment standards for land application, after disinfection and prior to discharge shall meet secondary treatment criteria and as required by State Law or County Ordinances. Discharge criteria for off-site surface water shall meet, at a minimum, advanced wastewater treatment standards.

F. *Other utilities.* Utility lines of all kinds, including electric power and light, telephone and telegraph, cable television, water, sewer and gas shall be constructed and installed beneath the surface of the ground within new developments, unless based on standard engineering practice it is determined by the County Engineer that soil, topographical, or any other compelling conditions make the installation of such utility lines as prescribed herein unreasonable or impractical. It shall be the developer's responsibility to make the necessary arrangement with each utility in accordance with utility's established policies. Said arrangements shall be completed prior to the submittal of final construction plans. The underground installation of incidental appurtenances such as transformer boxes, pedestal mounted terminal boxes for electricity, or similar service hardware necessary for the provision of electric and communication utilities shall not be required. Below ground installation shall not normally be required of bulk electric power supply lines and major communication feeder lines. Nothing in this section shall be construed to prohibit any entity furnishing utility service within Sarasota County from collecting (as a condition precedent to the installation of service facilities) a fee, prepayment, or contribution which may be required to aid in construction.

G. *Abandoned wells and septic tanks.* All abandoned wells as defined in Sarasota County Ordinance 97-034 or as amended, shall be plugged by a licensed well driller in an approved manner, within 60 days from notification and prior to development approval.

All existing abandoned septic tanks must be pumped, crushed and filled in accordance with Chapter 64E-61 F.A.C. within 90 days of notification and prior to development approval.

H. *Minimum commercial driveway radii.*

TABLE INSET:

Without Decel Lane		With Decel Lane
Arterial & Collectors	35 ft.	25 ft.
Local	25 ft.	
Truck Service Entrance	60 ft.	35 ft.

The interior angle of the curve shall be 90 degrees.

I. *Fire sprinkler systems.* Any new building, complex or additions to existing buildings which cumulatively demands fire flows in excess of 1,000 GPM, as determined by the Insurance Service Office (ISO) Required Fire Flow Tables, (Appendix B, 1974 edition), shall be protected by a complete fire sprinkler system installed in accordance with the applicable NFPA standard. The required fire sprinkler system shall be electrically monitored by a fire alarm system with manual and automatic detection devices installed in accordance with NFPA 72. The fire alarm system shall be monitored 24 hours a day by a UL listed central station. All required systems shall be maintained in accordance with NFPA 101, NFPA 72, and NFPA 25 as is applicable.

(Ord. No. 2000-074, § 9, 2-27-2001; Ord. No. 2002-026, § 3, 3-27-2002; Ord. No. 2004-053, § 6, 9-15-2004; Ord. No. 2007-065, § 2(Exh. B), 8-28-2007)

SUBDIVISION TECHNICAL MANUAL

A. Subdivision design criteria

1. *General.* All lands proposed for subdivision shall be suitable for the various proposed purpose in the request for approval. The developer shall also demonstrate that the proposed subdivision complies with the comprehensive plan, the zoning regulations, other divisions of these regulations and other laws, ordinances and regulations, as applicable.

a. *Use of natural features.* The size, shape and orientation of lot(s) and siting of buildings shall be designed to provide building sites logically related to vegetation (trees), topography, solar orientation, natural features, streets, and adjacent land uses. Lots and streets shall be designed to maximize the preservation of natural features, trees, tree masses, unusual rock formations, watercourses and sites which have historical significance, scenic views and similar assets.

b. *Consideration of soil and flood hazards.* No subdivision plan shall be approved unless the developer submits substantial and competent evidence that all lands intended for use as building sites can be used safely for building purposes, without interruption of access or other undue hazard from flood or adverse soil or foundation conditions. The following standards shall apply:

1) To protect floodplain functions including conveyance, storage, wildlife habitat and water quality functions:

a) No net encroachment will be allowed into a floodplain, up to that encompassed by the 100-year event, or on floodplain associated soils defined in Sarasota County Comprehensive Plan Future Land Use Policy 1.1.6.

b) Compensating storage shall be equivalently provided between the seasonal high water level and the flood level.

c) Vegetative buffers shall be established between future development and watercourses, including bay waters. Buffer widths shall be measured landward from the top of bank or landward extent of wetland vegetation.

d) Minimum buffer widths shall be 50 feet.

e) Specific buffer width standards, or flood plain protection measures or water quality enhancement measures that are equivalent in water quality treatment and habitat protection to a 50-foot wide vegetated buffer, and the [that] have been imposed or approved through a critical area plan, including a sector plan or corridor plan; a planned development district; a development of regional impact pursuant to Chapter 380, Florida Statutes; a regional watershed plan; or a development permit, as defined in Sarasota County Ordinance [No.] 89-103, as amended, issued by Sarasota County, shall supersede the buffer width standards contained herein.

f) Native vegetation shall not be removed from buffers except as necessary for:

(1) County maintenance and access;

(2) Road and utility crossings;

(3) Nature trails;

(4) Access to water dependent uses such as docks; and

(5) Subdivision amenities such as golf course fairways when such crossings are unavoidable.

If nuisance/invasive species are removed in areas where they are dominant

they shall be replaced with native vegetation. If no vegetation exists in the buffer, native trees, shrubs or grasses shall be planted. Plantings shall not interfere with maintenance or drainage access.

2) Subdivisions located in areas of special flood hazard, as delineated by the Federal Emergency Management Agency, shall comply with those requirements in addition to all applicable County regulations.

3) Approval of drainage and flood protection plans does not constitute a representation, guarantee or warranty of any kind by Sarasota County or any officer or employee as to practicality or safety of any protective or other measure. Approval of such plans shall create no liability upon or cause action against such public body, officers, or employees for any damage that may result pursuant thereto.

4) All development which involves land subject to the Sarasota County Gulf Beach setback line and/or Barrier Island Pass 20-year hazard line, the Florida Department of Environmental Protection Coastal Construction Control Line or other regulation thereof by Sarasota County shall have said line(s) depicted on the plan. When lots are created using land seaward of the setback line(s) to comply with lot area requirements, said lots shall possess adequate buildable area landward of said line(s) to comply with all requirements of the Sarasota County Zoning regulation and these regulations.

c. *Consideration of native habitat.* The subdivision of land shall be consistent with the "Principles for Evaluating Development Proposals in Native Habitats" located in the Environment Chapter of Apoxsee. Adverse environmental impacts shall be minimized by clustering of residential developments, or the implementation of other measures.

d. Subdivision construction plans shall include the delineation of the 100-year/24-hour floodplain on a specific plan sheet. This plan sheet will be recorded in the official records at the time the subdivision plat is recorded. The final plat will include a reference to the official record book and page where the floodplain is recorded.

2. *Lots.*

a. *Lot size.* In new subdivisions, minimum lot area requirements as related to the proposed water and sanitary sewer service shall comply with the Subdivision Technical Manual. Otherwise, lot dimensions and areas shall not be less than the minimum required for each zoning district established in the zoning regulations. The width and area of lots laid out for industrial and commercial purposes shall be adequate for the type of development contemplated in accordance with acceptable professional engineering and planning practice. The area of street, public or private, shall not be used to calculate area required for minimum lot size or density except for five-acre lots or larger.

b. *Corner lots.* In residential districts only, corner lots shall be at least 15 percent greater in width than the minimum required for each zoning district established in the Sarasota County Zoning. However, where the minimum width established in the Sarasota County Zoning Ordinance exceeds 100 feet, no additional width shall be required.

c. *Double frontage lots.* In residential districts, double frontage lots shall be permitted only where necessary to separate a development from an arterial or collector street or to overcome disadvantage of topography and orientation.

d. *Access.* Lots without frontage on a public or private street shall be connected to such street by an easement granting access to each such lot which easement shall be not less than 20 feet in width. If there is no minimum lot frontage required by the zoning regulations then 20 feet of frontage abutting a public or private street may be substituted for the access easement. Street frontage for all other lots shall comply with the zoning regulations. The development shall be so designed that remnants and land-locked areas, unless intended as common ground, shall not be created. Public or private street systems within the subdivision shall connect directly to a paved road, whether existing or paved as a condition of subdivision development, or street which provides legal access and has a structural and geometric design adequate to convey the additional traffic imposed. Direct access to residential lots from abutting arterial or collector streets shall be prohibited by showing a limited access right-of-way line along those lot lines on the plat, together with a symbol in the legend. Subdivisions with more than 100 lots shall have two or more access points unless the County Engineer determines based on standard engineering practice that the design of a single access provides safe and reliable ingress and egress. Access to lots on culs-de-sac shall be restricted to the cul-de-sac.

e. *Lot lines.* Side lot lines shall be, as nearly as practical, at right angles to straight lines and radial to curved street lines in developments which overlap municipal boundaries lot lines should follow the boundary line. In subdivisions with private streets, lot lines shall be extended to the centerline of the street, except in the case of PUD or where ownership of the streets is vested in a designated responsible entity.

3. *Streets.*

a. *Design standards.*

1) Projected traffic volumes. Streets for residential subdivisions shall be classified based on the projected average traffic volume criteria contained in the latest edition of Institute of Transportation Engineers (ITE) Trip Generation Manual. Streets for commercial and industrial subdivisions shall be classified on a case by case basis in consultation with the County Engineer based on standard engineering practice and the projected average traffic volume for uses anticipated. The relationship of the subdivision's street pattern to shopping areas, employment centers and other trip generators must also be considered in developing street classifications to provide safe and efficient vehicular and pedestrian access.

2) Horizontal curves shall be used for all changes in direction. On local streets, however, a direction change of 70 degrees or more may be accomplished with an "L" intersection designed in accordance with Appendix C8.

3) Minimum street design specifications. All streets to be established in a subdivision shall be designed in accordance with the following minimum specifications:

TABLE INSET:

	Major Arterial	4-Lane Minor Arterial and Collectors	2-Lane Minor Arterials Collectors Street	Local** Street	Frontage Street
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Minimum Right-of-Way:	See Appendices C5 and C6				
Closed drainage:	See Appendices C5 and C6				
Open drainage:	See Appendices C5 and C6				
Distance between reverse curves:	320'	250'	N/A	N/A	N/A
Minimum center line radii for horizontal curves:	1,100'	600'	200'	100'*	75'
Minimum grade of streets with closed drainage:	0.3%	0.3%	0.3%	0.3%	0.3%

*Delta angles less 60° (The provisions of the Manual of Uniform Standards for Design, Construction and Maintenance for streets and highways shall apply as appropriate to all new roads and street construction.)

**Does not apply to access ways internal to mobile home or recreational vehicle parks.

4) Minimum street intersection curb or pavement radii.

TABLE INSET:

Intersecting Streets	Minimum Radius
Arterial--Arterial	60 ft.
Arterial--Collector	45 ft.
Arterial--Local	40 ft.
Collector--Collector	45 ft.
Collector--Local	35 ft.
Local--Local	25 ft.

b. *Culs-de-sac*.

- 1) Shall be provided with a paved circular turnaround 72 feet in diameter. Right-of-way for the turnaround shall extend at least eight feet beyond the edge of the paved surface.
- 2) Shall have a maximum length of 1,500 feet.

c. *[Private streets.]* Private streets may be approved by the County Engineer, if they meet public street standards, and comply with the following:

- 1) May be used to provide security and exclusivity, not as a means to reduce design criteria below adopted standards.
- 2) Shall be permitted only where a satisfactory means of providing for their control and maintenance is demonstrated. Generally, such control and maintenance must be accomplished through a homeowners' association to which all unit owners must belong, pursuant to deed conditions and covenants running with the land. (See Appendix C22)

a) The homeowners' association shall be responsible for maintenance, liability and enforcement of traffic control on private streets.

b) Erection and maintenance of all traffic control and street name signs, shall be the responsibility of the homeowners' association. All signs shall be provided by the developer, subdivider and/or association.

c) All traffic control devices shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

3) Shall be clearly identified as "private" on all plans and plats.

4) Shall have a "private street" sign.

5) Shall be named according to current criteria with a name approved by the County Administrator.

6) The street section, including pavement and appurtenances, shall be not less than 50 feet in width with closed drainage and 60 feet in width with open drainage.

7) The street will not block the logical access to adjoining property, nor interfere with the street patterns previously established, nor interfere with the street patterns which should be established to provide for appropriate traffic circulation (See also Appendix C22 for maintenance requirements to be included in Protective Covenants and Deed Restrictions).

d. *Continuation of existing street pattern.* The proposed street layout shall be coordinated with the street system of the surrounding area. All collector and arterial streets created shall be public.

e. *Street access to adjoining property.* Street stubs to adjoining areas shall be provided when required to give access to such areas or to provide for future traffic circulation. Street stubs in excess of 250 feet shall be provided with a temporary cul-de-sac turnaround within the platted right-of-way complying with the cul-de-sac standards contained herein. When adjoining lands are subsequently developed, the developer of said adjoining land shall bear the expense of extending the street and restoring it to the original design cross-section.

f. *Intersection design.* Streets shall be designed to intersect as nearly as possible at right angles. Multiple intersections involving the junction of more than two streets shall be prohibited. A minimum sight distance of 250 feet from any intersection shall be maintained on the intersecting streets. This requirement shall not be construed to increase the minimum allowable intersection separation of 150 feet.

g. *Intersection separation.* Except when permitted by the County Engineer based on standard engineering practice, intersections with designated major arterials shall not be less than 1,320 feet apart, and intersections with streets or roads designated as minor arterials shall not be less than 500 feet apart (centerline to centerline). On local and collector streets, intersections with centerline offsets of less than 150 feet shall be prohibited (See Appendix C7).

h. *Alleys.* In commercial and industrial subdivisions alleys shall be encouraged for delivery purposes. When provided in a subdivision alleys shall be paved, have a minimum right-of-way width of 20 feet; not be a primary means of access. In single family districts, alleys shall be discouraged.

i. *Street names.* Street names shall not be used which will duplicate or may be confused with the names of existing streets. New streets which are an extension of,

or in alignment with, existing streets shall bear the same name as that of the existing streets. In general, streets shall be named according to the diagram in, Appendix C2. All courts and circles shall have one name only. All proposed street names shall be approved in writing by the County Administrator.

j. *Subdivisions on arterial streets.* Direct vehicular access from the abutting arterial and collector streets to individual residential lots shall be prohibited by showing a limited access right-of-way line along those lot lines on the plat. Access to such lots shall be by way of interior local streets or frontage streets (See Appendix C4). The Board shall also require corner or double frontage lots to have screening walls or landscaping which meets the standards of the Sarasota County Zoning Ordinance. Measures necessary to buffer and protect residential properties, and to separate through and local traffic shall be required. Any such measures required shall not be located on public rights-of-way.

k. *Partial width streets.* Where an existing partial width street is adjacent to a new subdivision, the unimproved portion of the street shall be improved and dedicated by the developer.

l. *Local streets.* Local streets shall be designed to discourage excessive speed and through traffic.

m. *Transportation mitigation and dedication requirements.*

1) In order to mitigate the adverse impacts of proposed development on County transportation facilities and ensure that development does not proceed in the absence of facilities adequate to serve such development, a developer shall be required consistent with the requirements of this section to provide at no expense to Sarasota County for the dedication of on-site road right-of-way sufficient to ensure that streets providing access to a proposed development conform to minimum County right-of-way standards. Land dedicated for any on-site public or private right-of-way shall not be counted in satisfying the yard or area requirements of the zoning regulations.

2) Where the proposed development includes or is adjacent to a platted street, public right-of-way or planned extension of a street which does not conform to the minimum right-of-way design and construction requirements of these Land Development regulations, the Thoroughfare Plan, or other regulations related to road right-of-way standards, the developer shall be required to dedicate on-site road right-of-way to the extent the on-site road right-of-way is necessary to bring the platted street, public right-of-way or planned extension of a street into conformity with the appropriate right-of-way standards, and to the extent the dedication of on-site road right-of-way complies with subsection 4) of this section. If a proposed development abuts only one side of a road, only the remaining portion of the required right-of-way for that side of the street shall be dedicated to the extent the dedication of on-site road right-of-way complies with subsection 4) of this section.

3) Any right-of-way dedicated pursuant to the provisions of this section shall be in addition to and shall not affect the obligation of the developer to provide other on-site and site related improvement necessary to accommodate the proposed development including, but not limited to, access roads, turn lanes, acceleration and deceleration lanes, traffic signalization and other improvements required by these regulations or any ordinance or regulation of Sarasota County.

4) The amount of land required to be dedicated for on-site road right-

of-way shall not exceed a proportionate fair share representing the amount of additional roadway reasonably necessary to accommodate the anticipated impacts of the proposed development at buildout.

5) A developer dedicating right-of-way pursuant to the provisions of this section shall be entitled, subject to the provisions of the Sarasota County Road Impact Fee Ordinance, to a) a credit against road impact fees for the value of any dedicated road right-of-way or b) reimbursement for the value of any dedicated road right-of-way through a Capital Contribution Front Ending Agreement pursuant to Section 380.06(16), Florida Statutes, if the development is a Development of Regional Impact; or both. The amount of the credit shall be based on value of the right-of-way at the time of:

- a) Submission of the preliminary subdivision plan, or
- b) Commencement of construction of the roadway for which credit is sought;

whichever comes first.

6) In the event the County determines there is a need for additional road right-of-way for future County road purposes adjacent to or within a site for which development approval is sought and the owner is not required to dedicate said right-of-way pursuant to this section, the County may require that all setbacks be measured from the edge of the projected future right-of-way line provided a notice of intent to acquire right-of-way is issued to the owner before preliminary subdivision approval. Within 90 days following issuance of the "First letter" for the development by the County Engineer, the County shall commence proceedings to acquire the additional right-of-way by purchase or condemnation and shall proceed in good faith to acquire said property.

7) A developer whose proposed development contains an existing, on-site road improvement that fails to comply with the minimum standards of the Subdivision Technical Manual for construction and design shall improve said road to the minimum construction and design standards set forth in these Land Development regulations. Said on-site road shall be dedicated at no expense to Sarasota County, unless it is approved by Sarasota County as a private roadway.

8) Shared access or joint use driveways are encouraged to serve adjoining parcels in order to increase average spacing of access points and reduce conflict frequently and severity. Shared access reduces the number of access points and increases the spacing between driveways.

9) Dedication of on-site road right-of-way pursuant to this section shall not be required where the dedication of right-of-way would deprive the landowner of all beneficial use of the property or provide no reasonable benefit to the proposed development.

10) In order to promote the safety of the County transportation system, roads that provide access to development shall meet existing County road standards and/or be adequate to accommodate the types and volume of traffic to be generated by the proposed development. Where an existing or proposed road right-of-way intended to provide access to a proposed development does not meet County standards or is inadequate to accommodate the types or volume of traffic anticipated to be generated by the development, plus existing or projected background traffic, Sarasota County shall deny site plan, subdivision plan, rezoning or special exception

approval until such time as the deficiencies in the transportation facilities are corrected unless such denial results in a taking of all beneficial use of the property. Deficiencies which may warrant denial of approval include unsafe condition of the road surface, inadequate pavement width, unsafe condition of shoulders of the road, inadequate turning radii or frontage roads for the type of traffic to be generated, lack of sidewalks where traffic may create safety hazard for pedestrians and other conditions creating safety hazards on the road facility.

11) The Board of County Commissioners shall adopt after public hearing administrative guidelines to implement the provisions of this section, which guidelines shall establish a methodology for determining the amount of road right-of-way required to be dedicated consisting with the requirements of this section. In the interim before guidelines are adopted, the County Engineer shall determine on a case by case basis consistent with the requirements of this section the amount of right-of-way to be dedicated based on the projected traffic impact of a proposed development at buildout. Any determination of the Director may be appealed to the Board of County Commissioners for a final determination.

12) The Board of County Commissioners shall have the authority to grant a variance from any requirement of this section upon application of an owner or agent pursuant to the variance procedure set forth in Division D. By variance, the Board shall have the authority to adjust the amount of road right-of-way required to be dedicated pursuant to this section to ensure that an owner is required to dedicate no more than a proportionate fair share of road right-of-way reasonably necessary to accommodate the anticipated impacts of the proposed development at buildout.

n. *Conservation subdivision street standards.*

1) Support of Rural Character: The choice of minimum street design specifications shall provide safe and efficient access for vehicles, bicyclists, and pedestrians. First and foremost, street design shall support the rural character of the Conservation Subdivision. Given the projected average traffic volume for Conservation Subdivision uses and densities, the number of necessary travel lanes is limited to two.

2) Minimum Street Design Specifications: All streets and multi-use trails shall be designed in accordance with the following minimum specifications, as depicted in Table 1 and Figures 1-4. These street standards are hereby called the Conservation Subdivision Street Standards and travel lane widths and required rights-of-way are established herein. The graphics included herein are intended to give clear direction as to the intent of the street cross-section requirements. The graphic images are regulatory and are intended to supplement and clarify the written text. In the event a graphic image conflicts with written text, the written text shall prevail.

Table 1: Characteristics of Conservation Subdivision Street Types

TABLE INSET:

	Road -- Open Drainage (Figure 1)	Lane -- Open Drainage (Figure 2)	Lane -- Closed Drainage (Figure 3)	Multi-Use Trail (Figure 4)
Function	Collector	Local	Local	N/A

Traffic Lanes	One travel lane in each direction, 11'	One dual direction lane, 18'	One travel lane in each direction, 10'	N/A
Parking Lanes	None	None	None	N/A
Multi-Use Path	10', one side	10', one side	10', one side	N/A
ROW Width	73'	69'	50'	22'
Pavement Width	22' plus 6' stabilized shoulders	18' plus 6' stabilized shoulders	20' plus curb and gutter	12'--15'(1)
Vehicular Design Speed	30 mph	20 mph	20 mph	N/A
Landscaping Width	Varies (Optional)	Varies (Optional)	7'	N/A
Road Edge Treatment	Open Drainage	Open Drainage	Type F 2' Curb and Gutter	N/A
Planting	Multiple trees and shrubs species composed in naturalistic clusters			N/A

(1) Under circumstances of extreme constraint, including constraints of environmentally sensitive areas, the minimum pavement width for a multi-use trail of 12 feet may be reduced to ten feet.

- 3) Design and construction of the street network is limited by the following:
 - a) Only Road-Open Drainage and Multi-Use Trail shall be permitted within the Open Space.
 - b) Only Lane Closed Drainage, Lane-Open Drainage, and Multi-Use Trail shall be permitted within the Residential Development.
 - c) Lane-Closed Drainage shall be used to serve lots that are 50 feet or less in width.
- 4) Regarding street design elements not specified in the Conservation Subdivision Street Standards, final street design and location for all streets shall encourage open space conservation and pedestrian/bicycle safety and comfort through the application of minimum standards for vehicles (e.g. roadway widths will be kept to the minimum necessary for vehicular movement in order to achieve this goal).
- 5) The Conservation Subdivision Street Standards are typical, and thus shall be modified to accommodate special circumstances. Such modifications shall be reviewed by all pertinent County business centers (Growth Management, Engineering, Emergency Services, Sheriff's Office, and Solid Waste) and shall be approved by the Planning and Development Services Executive Director and County Engineer.
- 6) All multi-use paths within vehicular right-of-ways shall comply with the Americans with Disabilities Act and Florida Accessibility Code standards.
- 7) Paving Materials: All roadways within Conservation Subdivisions shall be

surfaced with asphalt bituminous, concrete, or dustless material approved by the County Engineer, and maintained in a smooth, well-graded condition.

8) Continuation of Street Pattern between Phases: The street layout of subsequent phases shall be coordinated with the street system of previous phases.

9) Traffic Calming:

a) All streets within Conservation Subdivisions shall be constructed and designed to the vehicular design speed standards provided in Table 1 and shall promote the safety of pedestrians and bicyclists. Traffic calming measures that modify vehicle speeds and other driver behavior and that support the rural character may be used to promote the pedestrian orientation within Conservation Subdivisions.

b) Developers shall coordinate with the County Engineer on the design and placement of traffic calming measures within Conservation Subdivisions.

c) Traffic calming on any collector or arterial road, as designated by the Sarasota County Comprehensive Plan, shall be balanced with its regional vehicle traffic-carrying role.

4. *Easements and rights-of-way.*

a. *[Easement requirements on plans and plats.]* All easements shall be clearly identified on the plat in accordance with 177.091(16) and final subdivision plans as depicted on the approved preliminary plan and their intended use clearly stated. Only those easements necessary for known public purposes shall be dedicated to the County. Any easements or rights-of-way that do not appear in the record plat shall be recorded prior to construction authorization.

b. *Utilities and closed drainage easements.* Water distribution and sewage collection/transmission lines shall be installed in street right(s)-of-way. In the case of accessways, ten foot utility and closed drainage easements on each side of the travelway shall be provided when necessary. Utility and drainage easements centered on rear lot lines shall be provided and shall be a total of at least 16 feet in width, utility and drainage easements centered on side lot lines shall be at least ten feet in width as long as the width is adequate for the intended purpose. (Additional widths may be required for closed drainage easements as described in Appendix C29, unless an adverse condition warrants a lesser dimension.) Where water distribution or sewage collection/transmission lines will not be installed in street rights-of-way or accessways, an easement of 20 feet in width shall be provided. A deviation from the stated easement widths must be approved by the County Engineer.

c. *Requirements for protecting preservation, conservation and buffer areas.*

1) All preservation, conservation and buffer areas shall be staked or otherwise marked clearly prior to and during construction. Silt screens, hay bales or other suitable sediment control devices shall be installed along the landward edge of required wetland buffers prior to construction. These devices shall remain in place until construction is completed.

2) All activities involving filling, excavating, disturbing of vegetation (both trees and understory) and storing of materials shall be prohibited within preservation or conservation areas and buffer areas. Exceptions may be granted by Resource Protection Services only to facilitate implementation of approved management plans, or construction of structures such as

boardwalks, nature trails, bicycle paths, or selective removal of nuisance/invasive vegetation by hand or hand-operated tools.

3) Resource management events shall be implemented within the time frames outlined within the approved management plan.

d. *Open drainage.* Where a proposed subdivision is traversed by or abuts a watercourse, drainageway, canal, lake, pond, or stream, or where such facility is proposed as a part of the plan, a drainage easement (or right-of-way) shall be provided which shall conform substantially with the limits of such watercourse, drainageway, canal or stream. The easement (or right-of-way) shall conform to the minimum guidelines illustrated in Appendix C13. A deviation from minimum guidelines illustrated in Appendix C13 must be approved by the County Engineer. It shall not be encroached upon, and shall have satisfactory vehicle access.

e. *Dedications.* Easements and rights-of-way for stormwater management systems utilized by the general public (accommodating off-site or public roadway runoff or as determined by the County Engineer based on standard engineering practice) shall be dedicated to Sarasota County at no expense to the County. Easements or rights-of-way shall be provided for open drainage systems. Suitable maintenance areas for appurtenant drainage structures shall be provided. If the dedications do not appear in the recorded plat, then separate instrument must be prepared and recorded prior to construction plan approval.

f. *Maintenance.*

1) If required drainage easements and drainage structures are to remain private, an instrument acceptable to the County Attorney shall be recorded in the public records identifying a designated responsible entity which shall be responsible for the operation, maintenance and repair of the drainage easements and structures. The instrument shall provide that if the drainage easements and structures are not adequately maintained in accordance with County standards, the County shall have the right but not the obligation to go on the property and perform all necessary operation, maintenance, and repair functions. All expenses of such operation, maintenance, and repair shall become a lien against the property, which may be foreclosed by the County in accordance with Ordinance No. 99-050.

2) Where a new subdivision contains historic drainage ditches and drainage structures within its boundaries, these ditches and structures shall either be dedicated to Sarasota County or maintained by a designated responsible entity as provided above. If an owner cannot legally comply with the dedication or maintenance requirements of this section, the County, by virtue of approving and recording the final plat, shall have a right and license in perpetuity to enter upon the property for the purpose of operating, maintaining and repairing such historic drainage ditches and structures. The right and license to maintain historic drainage ditches and structures shall be exercised in the discretion of the County and shall impose no affirmative obligation on the County to perform such functions. Such right and license shall automatically terminate at such time as the historic drainage ditches and drainage structures no longer exist or function as drainage facilities.

3) If there is no designated responsible entity having the obligation to maintain the capacity of the off-site drainage system receiving stormwater discharge from the site, the applicant requesting development approval shall fulfill one of the following:

a) Provide:

(1) The on-site stormwater management system serving the development shall be designed to assume nonmaintenance of the receiving water system; and

(2) Executed agreement recorded in the public records, indemnifying the County for any attorneys' fees or costs incurred as a result of the County approving the development.

b) Obtain a private drainage and maintenance easement and identify the entity responsible for maintenance of the capacity of the receiving drainage system.

c) Obtain and provide a public drainage and maintenance easement to the County for maintenance of the capacity of the receiving drainage system by the County.

d) Pay the County's costs of condemning the receiving drainage system, including any award to the landowner, for obtaining a drainage and maintenance easement for maintenance of the capacity of the receiving drainage system by the County.

5. *Open spaces and recreation areas.*

a. *Private open spaces and recreation areas.* Developers may include private parks, lakes, and recreation areas provided the following conditions are met: The proposed area shall be clearly identified on the preliminary plan and the final plat; native habitat has been used to fulfill open space requirements in accordance with the policies in the Environment Chapter of Apoxsee; the areas shall be adequate for the intended purpose and shall have satisfactory access; assurance shall be given (in the form of subdivision deed restrictions, homeowners agreements or maintenance agreements that are legally acceptable to the board after review by the County Attorney) that the areas shall be adequately maintained and that all homeowners or tenants shall be required to belong to and financially support the operation and maintenance of said facilities. Private parks and recreation areas shall be identified on the plat as "Common Areas for the Owners or Tenants" of property in the development.

b. *Other open space and recreation reservations.* The provisions of this section are minimum standards. None of the paragraphs above shall be construed as prohibiting a developer from dedicating other land for open space and recreation purposes in addition to the requirements of this Section.

c. *Recreation level of service.* The recreation level of service (LOS) of no less than seven acres per 1,000 resident population, as established in the Recreation and Open Space Chapter of Apoxsee shall be maintained throughout the unincorporated area of the County in accordance with the Concurrency Management regulations.

6. *Protection and planting requirements.*

a. *Design criteria for the protection of existing trees.*

The proposed development must comply with the requirements of the current Tree Protection Ordinance.

b. *Required tree protection.* No tree shall be removed, until a tree removal permit is issued. Tree removal permits are issued after approval of preliminary subdivision plans or Site and Development Plans.

B. *Subdivision improvements.*

1. *General.* A Florida registered professional engineer shall design, inspect and certify the installation of all required public and private improvements. All plans for improvements shall be prepared by such engineer and are subject to review and approval by the County prior to construction. All required improvements shall be installed at the expense of the developer. The engineer of record shall certify that the facilities comply with all applicable standards. (See Appendix C18.) This certification shall appear on the cover sheet of the plans.

2. *Monuments.*

a. *Permanent reference monuments (PRMs).* Permanent reference monuments shall be placed (as required by Chapter 177, Florida Statutes) and certified by a licensed Florida professional surveyor and mapper. Monuments shall be set in the ground so that the top is flush or not more than one-half foot below the finished grade. Subsurface PRMs shall be exposed for inspection when the plat is submitted for review. The location of PRMs shall be indicated on the plat.

b. *Permanent control points (PCP's).* Permanent control points shall be installed along the street right-of-way or block lines at "PCS", "PTs", "PRCs", "PCCs", and other changes in direction, excluding those points occupied by "PRMs", and along the centerline of the street right-of-way (as defined and required by Section 177.031(13 and 177.091(8), Florida Statutes). The PCPs shall be installed either prior to the recording of the plat or prior to the release of the improvement bond and shall be certified accordingly in the land surveyor's certificate, except that the centerline PCPs shall be installed within 60 days after the completion of any road paving surface course. An affidavit as shown in Appendix A3 shall be prepared by the professional surveyor and mapper setting the PCPs and shall be recorded with the Clerk of the Court as required by Section 177.019(8), Florida Statutes, except that the affidavit shall be recorded within 30 days after the PCPs were placed or prior to the release of the improvement bond. The location of all PCPs shall be indicated on the plat.

c. *Bench mark (BMs).* Three permanent bench marks to establish vertical control (based on National Geodetic Vertical Datum) shall be placed and certified by a licensed, Florida professional surveyor and mapper within each subdivision under 40 acres in area, except that only two BMs will be required for subdivisions divided in to nine lots or fewer. For subdivisions over 40 acres an additional three bench marks are required for each 40 acres or portions thereof. Bench marks should be located as near as possible to the center of the subdivision and shall be located within a dedicated road right-of-way, on center line permanent control point (PCP) markers, on concrete bridge walks or curbs or on drainage inlet structures. In addition, to the Professional Surveyor and Mapper's Number on the PCP markers, the letters "BM", together with a location identification number assigned by the County Engineer's office, shall be stamped on the PCP marker. When a BM is located on a bridge or drainage inlet, a metal tablet marker shall be set in the concrete and stamped accordingly or it shall be marked with a drill hole inside a square cut chiseled in the concrete. The location of the BMs shall be indicated on the plat with an arrow and a land surveyor's target symbol and the BM identification number, description and elevation shall be shown by the arrow. The elevation shall be omitted when the BM is located on PCP or structure that is bonded and not yet placed or constructed. When this is the case, the elevation shall be certified on the same affidavit that is required for the land surveyor's certification of the installation of the PCPs.

d. *Perpetuation of survey markers.* Any survey marker, monument, pipe, rod, spike, plate, cap or disc installed for the purpose of permanently preserving the boundary lines of any dedicated public or private street, alley, easement, canal, lot, block, tract, parcel or any subdivision or section of land, shall not be disturbed or removed and shall be protected throughout the development. Should such markers

fall within pavements, driveways or sidewalks, there location shall be well referenced by a licensed Florida professional surveyor and mapper and the professional surveyor and mapper shall place a surface marker at those same locations upon construction completion. Should such markers fall beneath more than one-half foot of fill, they shall be made accessible to proposed grade by monument boxes or eight inch concrete or PVC pipe. Any and all such markers inadvertently disturbed or destroyed during development or construction shall be accurately replaced by a licensed Florida professional surveyor and mapper at the expense of the developer.

e. *Lot corners.* Monuments shall be set at all lot corners, point of intersection, and changes of direction of liens [lines] within the subdivision which do not require "P.R.M." or a "P.C.P.", however, a monument need not be set if a monument already exists at such corner, point, or change of direction or when a monument cannot be set due to a physical obstruction. Monuments shall be set prior to the expiration of the bond or other surety. If the professional surveyor and mapper or legal entity of record is no longer in practice or is not available due to relocation, or when the contractual relationship between the subdivider and professional surveyor and mapper or legal entity has been terminated, the subdivider shall contract with a professional surveyor and mapper or legal entity in good standing who shall be allowed to place the monuments within the time allotted.

f. *State plane coordinates.* Means the system of plane coordinates which has been established by the National Ocean Service for defining and stating the positions or locations of point on the surface of the earth within the state and shall hereinafter be known as designated as the "Florida State Plane Coordinate System." For the purpose of the use of this system, the zones established by the National Ocean Service in NOAA Manual NOS NGS 5, Plan Coordinate System of 1983, shall be used, and the appropriate projection and zone designation shall be indicated and included in any description using the Florida State Plane Coordinate System.

3. *Streets.* (See Appendices C5 (a through f) and C6 (a through f) for Minimum Standards for Street Cross Sections).

a. *Street improvements.* Street improvements shall be designed and constructed in accordance with these regulations, and conform to the following specifications.

1) Grading and centerline gradients. Per plans and profiles approved by the County Engineer based on standard engineering practice.

2) Arterial streets. Four or more travel lanes each a minimum of 12 feet in width to which shall be added bicycle facilities consistent with the "Bicycle Facilities Planning and Design Manual" (current edition) of the Florida Department of Transportation, five-foot sidewalks on both sides of roadways, turn lanes, deceleration lanes, and/or other features consistent with Appendix C5e, C5f, C6e, or C6f, and "A Policy on Geometric Design on Highways and Street" (current edition) of the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.).

3) Collector streets. Two or more travel lanes each a minimum of 12 feet in width to which shall be added bicycle facilities consistent with the "Bicycle Facilities Planning and Design Manual" (current edition) of the Florida Department of Transportation; and turn lanes, and/or other features consistent with Appendix C5d, C5e, C6d, or C6e, and. "A Policy on Geometric Design on Highways and Street" (current edition) of the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.).

4) Local streets. In residential developments and commercial

nonmanufacturing developments (less than ten percent truck traffic) a minimum pavement width of 22 feet and consistent with Appendix C5a, C5b, C6a, or C6b. Private residential streets with less than 1,000 ADT may have a pavement width of 20 feet with closed drainage as identified in Appendix C6a. In industrial subdivisions a minimum pavement width of 32 feet (includes two 12-foot travel lanes and two four-foot paved bicycle lanes) and consistent with Appendix C5c or C6c.

5) Frontage streets. Shall have a pavement width of 22 feet, except that private residential subdivisions less than 13 dwelling units per gross acre may have a pavement width of 20 feet.

6) Alleys. Eighteen foot pavement.

7) Curb and gutter. Type D, F and M Curb (See Appendix C9). Type D curb shall not be used adjacent to bicycle lanes.

8) Swales, with a TYPE "H" curb (See Appendix C9) or other adequate pavement edge protection may be used in excessively drained and somewhat excessively drained to moderately well drained soils, except where closed drainage is required.

9) Subgrade. As required by Appendix D2.

10) Pavement structural base course. As required by Appendix D2.

11) Asphaltic cement concrete wearing surface. As required by Appendix D2.

12) Grassing and mulching. Prior to the issuance of the "First letter", the developer shall be responsible for ensuring that all swales, parkway medians, percolation areas and planting strips shall be sodded, seeded or planted and mulched in accordance with the Zoning regulations and both Section B.4.4.b and Division D of these regulations. Sodding for erosion control at the back of curbs and at the pavement edges shall be provided.

13) Street name signs. Street name signs and posts (See Appendix C3) shall be installed by the developer at all intersections prior to issuance of the "First letter".

14) Street lighting. The developer shall install all energy efficient street lighting, optional only in residential subdivisions of four and one-half or less dwelling units per gross acre. A special taxing district or binding owners association shall be established for operation and maintenance charges.

15) Intersection improvements and traffic control devices.

a. The developer shall cause to be designed and constructed necessary traffic control devices, and acceleration, deceleration and turning lanes (hereinafter referred to as traffic improvements) required by the County or other jurisdiction. Said traffic improvements shall include those needed outside the boundaries of the subdivision which are necessary to achieve and maintain traffic safety under the increased traffic projected to be generated by the entire subdivision and phases thereof. Where the County Engineer determines based on standard engineering practice that the need for traffic improvements is not solely attributable to a particular subdivision, the developer shall be required to deposit with the County a pro rata share of the cost of necessary traffic improvement attributed to the subdivision based on standard engineering practice

by the County Engineer in accordance with the standards of paragraph (2) below.

b. Required traffic improvements shall be indicated on the approved plans for the subdivision, and conform to current editions of the Manual of Uniform Traffic Control Devices for Streets and Highways; the Manual of Uniform Traffic Standards for Design. Construction and Maintenance of Streets and Highways; and sound engineering practice, as determined by the County Engineer.

c. In accordance with the approved plans, the developer shall complete the installation of all required traffic control devices and acceleration, deceleration and turning lanes prior to the issuance of the "First letter".

16) Sidewalks and bicycle lanes.

a. Sidewalks not less than five feet in width shall be provided at the developer's expense on at least one side of all streets abutting the subdivision. All streets contained within a subdivision shall provide sidewalks on both sides of the streets. It may be permissible, at the discretion of the County Engineer to allow a sidewalk on only one side of the street if all buildings are located on only one side of the street. Said sidewalks shall be offset from the right-of-way lines by not less than one foot. Sidewalks are not required for interior streets in residential subdivisions with lots larger than one acre in size. Wheelchair ramps shall be provided at each intersection where sidewalks intersect roadway curb and gutter. Such sidewalks shall be installed upon or along each lot prior to the issuance of a certificate of occupancy for the dwelling unit upon each such lot.

b. Along arterial and collector streets newly constructed or required to be widened in conjunction with development of a subdivision, bicycle facilities constructed in accordance with the "Bicycle Facilities Planning and Design Manual" (current edition) of the Florida Department of Transportation shall be provided.

c. Alternative proposal: The developer may submit an alternative proposal to the requirements of 1) and 2). Said proposal shall reflect a sidewalk and bicycle facilities system along streets and lot line easements which link the development to activities such as school sites, shopping concentrations, and other pedestrian and bikeway systems. Any such alternative proposal shall be based on standard engineering practice and approval by the County Engineer and consistent with the "Bicycle Facilities Planning and Design Manual" (current edition) of the Florida Department of Transportation; and "A Policy on Geometric Design on Highways and Streets" (current edition) of the American Association of State Highway and Transportation Officials (A.A.S.H.T.O.). Any such sidewalks shall be installed upon or along each lot prior to the issuance of a certificate of occupancy for the dwelling unit upon each such lot.

17) Underdrains shall be required on both sides of all streets unless a soils report, prepared by a Florida registered engineer practicing in soils and determined sufficient by the County Engineer based on standard engineering practice, indicates that such drains are unnecessary.

18) Bridges and approaches shall be designed and constructed in accordance with the most current version of "A Policy on Geometric Design

on Highways and Streets" (current edition, A.A.S.H.T.O.). Bridges on private streets shall meet the same requirements as those on public streets.

b. *Off-street and right-of-way improvements.* Prior to the issuance of the "First letter", the developer shall dedicate right-of-way and complete such improvements (or provide funds for completion or installation) in conformance with the standards and specifications in of these regulations.

c. *Roadway level of service.*

1) A level of service (LOS) standard of "C" peak hour, based on a 100th hour design criteria (hereafter referred to as LOS "C"), shall be required for all County maintained arterials and collectors except those roadways which have been designated as either constrained or backlogged facilities. Constrained County facilities are defined as roadways operating below LOS "C" which are not capable of attaining LOS "C" because prohibitive costs or environmental limitations prevent the construction of at least two additional through lanes. Backlogged County facilities are defined as roadways operating below LOS "C" standard which do not have prohibitive financial or environmental constraints but are not scheduled for major capacity improvements in the County's Five-Year Schedule of Capital Improvements (Table 10-3 in the Capital Improvements Chapter of Apoxsee). The designated constrained and backlogged County facilities are listed in Table 6-5 of Apoxsee's Transportation Chapter.

2) The minimum level of service standards adopted by Sarasota County for roads designated on the State Highway System and under the jurisdictional responsibility of the Florida Department of Transportation shall be based on and consistent with the Statewide minimum level of service standards set forth in Chapter 14-94, Florida Administrative Code, and contained in Appendix F, Section 3, Transportation Chapter of Apoxsee.

3) The review and approval of development orders shall ensure that such approval will not degrade the LOS of those constrained and backlogged roadways, specified in Table 6-5 of Apoxsee's Transportation Chapter, below that which existed on the effective date of the Comprehensive Plan Amendment RU-34 Update (7/8/97). For those roadways experiencing a LOS "F" on this effective date, degradation of LOS shall be determined by specific operating thresholds, such as an average travel speed or volume/capacity ratios which will be adopted by Ordinance as part of the County's Concurrency Management System.

4. *Stormwater management.*

a. *General.* A complete stormwater management system shall be provided for the treatment and control of stormwater runoff that originates within the subdivision, or that flows onto or across the subdivision from adjacent lands. Said stormwater management system shall be designed in accordance with Southwest Florida Water Management District criteria provided in the District's Permit Information Manual and modified as necessary to comply with Sarasota County Stormwater Management regulations. The designs shall be based on a 100-year, 24-hour storm and the level of service criteria given in Appendix C14. The system shall be designed for long life, low cost and ease of maintenance by normal methods. Drainage calculations shall be based on appropriate hydrologic design methods as approved by the County.

1) The rational method may be used for developments of ten acres or less.

2) For developments greater than ten acres, runoff hydrographs shall be developed and routed through the proposed stormwater management

system.

3) Predevelopment peak discharges shall assume existing conditions and be based on a 100-year, 24-hour storm. In areas of known stormwater problems or with restrictive conveyances, allowable peak outflows shall be as determined by the most recent County study or best available data.

4) Post-development peak discharges and hydrographs shall be based on a 100-year, 24-hour storm for the proposed conditions. Where basin model updates are available, they must be used as the basis of review for development proposals equal to or exceeding a total area of 35 acres or impervious area of eight acres to demonstrate no adverse increase in off-site flood stages.

b. *Roadside swales.* Roadside swales within street rights-of-way shall be sodded and have side slopes no steeper than three to one and back slopes no steeper than four to one. Normal swale sections shall be a minimum of six-inches deep. Runoff may accumulate up to halfway across the outside travel lane for a ten-year, 24-hour storm. Water in excess of this quantity shall be diverted from the roadside swales and carried away by storm sewers, or other approved means. Where flow velocities in excess of two feet per second are anticipated, curb and gutter shall be provided.

c. *Lot line swales.* Lot line swales shall be required and preserved via covenants and restrictions for each lot, unless other drainage means are affected, according to an approved development drainage study. Rear lot swales greater than 150 feet in length and less than 0.2 percent grade shall have a concrete low flow v-channel provided by the developer. The v-channel shall be a minimum two-feet wide and approximately two-inches deep and at least four-inches thick.

d. *Open channels and outfall ditches.* With the exception of roadside swales and major drainage ways, open drainageways within 100 feet of school sites shall not be permitted unless specifically approved by the Board. In these areas, drainage plans shall provide the stormwater be collected in properly designed systems of underground pipes, inlets and other appurtenances and be conveyed to an ultimate positive outfall beyond the outer edge of the subdivision or at the nearest natural outfall. Where permitted, open drainageways shall retain natural characteristics and be so designed and protected that they do not present a hazard to life and safety. Protection against scour and erosion shall be provided based on standard engineering practice as required by the County Engineer.

e. *Disposition of stormwater.*

Drainage level of service:

Stormwater quality: no discharge from any stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state as provided for in State Statutes. Further, the County will develop and set criteria based upon state and local regulations which will set a community level of water quality standard for stormwater discharge facilities; and Stormwater quantity: No discharge from any stormwater management facility shall cause adverse increases in off-site flood levels. A complete stormwater management system shall provide for adequate control of stormwater runoff. In order to avoid burdening downstream drainageways and for general conservation purposes, the following specific guidelines are as follows:

1) Drainage designs shall provide for the attenuation/retention of stormwater from the site. Where basin model updates are available, they must be used as the basis of review for development proposals equal to or exceeding a total area of 35 acres or impervious area of eight acres to

demonstrate no adverse increase in off-site flood stages. For all other sites, water released from the site shall be in such a manner as to assure that the rate of runoff after post-development is less than that before development. At least six inches of freeboard shall be provided above the 100-year flood elevation in attenuation ponds and lakes. The attenuation ponds and lakes shall have at least a two-foot berm top width.

2) A 100-year event flood analysis shall be provided demonstrating no inundation of habitable structures and no offsite discharge except through approved outfalls.

3) Drainage systems shall include special engineering design features to minimize pollution from oil, suspended solids and other objectionable materials. Wet detention treatment systems shall be designed to treat one (1) inch of runoff; other treatment systems shall be designed to treat the runoff resulting from the first one (1) inch of rainfall. Stormwater systems discharging directly into saltwater tidal systems, bays, or the gulf shall be designed to treat 1.5 times the volume required for the selected treatment system. Runoff from the area being developed or redeveloped shall be treated.

4) Stormwater systems shall be designed to reduce floating and suspending solids to a minimum.

5) Drainage structures (inlets, manholes, control structures, etc.) shall be designed to minimize ponding within the structure.

6) No cutting, clearing, grading or filling shall be accomplished on any site under development unless appropriate devices, as shown in the best management practices plan, have been installed to minimize pollution from objectionable materials, to control erosion, and to remove sediment from surface water runoff. Appropriate techniques shall also be utilized to stabilize and revegetate disturbed areas as soon as possible.

7) A plan for operating and maintaining the stormwater management system shall be provided. The plan shall include a schedule of tasks to be performed including periodic dredging and silt removal by the designated maintenance entity and shall be sufficient to ensure proper performance of the system.

8) A certificate of ownership and delegation of Stormwater Facilities Maintenance Agreement (See Appendix C23), will be required for all developments which are not a part of a previously approved stormwater management system.

9) A construction plan stormwater review checklist (See Appendix C25) and a construction plan stormwater design summary form (See Appendix C26) will be required for all developments which are not a part of a previously approved stormwater management system.

f. *Attenuation and retention facilities.*

1) Underground facilities are not acceptable unless adequate justification and demonstration of reliable performance can be provided based on standard engineering practice to the County Engineer. Underground facilities shall provide for easy inspection, access and maintenance. Voids in gravel or similar material cannot be included in the calculation of treatment or attenuation storage.

2) Dry detention ponds greater than 150 feet in length shall have a concrete

low flow v-channel. The v-channel shall be a minimum of two-feet wide and approximately two-inches deep and at least four-inches thick. The dry pond bottom slopes shall be a minimum 0.1 percent.

g. *Regional attenuation facilities.* The use of regional stormwater attenuation facilities in lieu of on-site facilities is encouraged. Documentation shall be provided demonstrating that proposed regional facilities adequately serve the intended service area without adverse impacts up or downstream. Any party or group of parties interested in creating a regional facility should contact the Sarasota County Stormwater Manager to present their proposal to the Regional Facilities Committee.

h. *Inlet spacing.* Inlets shall be spaced in such a manner as to accept 100 percent of the design runoff. The actual required spacing will depend on the characteristics of each particular site.

i. *Ditch crossings.* Utilities crossing County maintained ditches shall be designed in accordance with Appendix C16.

j. *Subdivision plans.* Shall include the delineation of the 100-year/24-hour floodplain on a specific plan sheet. This plan sheet will be recorded in the Official Records prior to issuance of construction authorization. The final plat will include a reference to the Official Record book and page where the floodplain is recorded.

5. *Potable water systems supply.*

a. *Potable water systems.*

1) Central potable water system. A central potable water system shall be provided in all new subdivisions. Connection to an existing central water system shall be required where the system is located within the distances indicated below. The distance shall be measured from along an accessible right-of-way or easement from the closest point on the perimeter of the subdivision.

Exception:

- a) Connection is not required if the existing system does not have sufficient capacity.
- b) Connection is not required if the existing system prohibits such connections.

Distance requirements will be prorated based upon the number of approved equivalent dwelling units (EDUs) within the subdivision and will be calculated according to the following schedule:

TABLE INSET:

Number of approved EDU's within the Subdivision # of EDU's	Connection with a central system will be required if within Distance (Ft.)
Up to 15	1,320
16 to 50	1,900
51 to 100	2,700
101 to 150	3,050
151 to 200	3,400
201 to 250	3,750

251 to 300	4,100
301 to 350	4,450
351 to 400	4,800
401 to 450	5,150
451 to 500	5,500
501 to 550	5,750
551 to 600	6,000
601 to 650	6,250
651 to 700	6,500
701 to 750	6,750
751 to 800	7,000
801 to 850	7,250
851 to 900	7,500
901 to 950	7,750
951 to 1,000	8,000

Distance requirements for connection to a central water system shall be prorated within this schedule based upon the number of approved EDUs within the new subdivision. Larger developments (i.e., Developments of Regional Impact [DRI] and Developments of Critical Concern [DOCC]) shall be evaluated on an individual basis within the guidelines of all applicable Federal, State and County regulations.

If a County or other existing central water system does not exist within the above requirements, or is not available under a) or b) above, the Board may approve a central potable water system. Where the developer provides a central potable water system utilizing a temporary water treatment plant, the completed plant, lines, and all other appurtenances shall be deeded at no cost to Sarasota County to be operated and maintained by the County, unless dedication is waived by the Board.

2) Exemption from central water system requirement. Subdivisions shall be exempt from the provisions of 1) above, under the following conditions:

a) Subdivisions having a maximum number of 15 lots and a minimum lot size of one acre (43,560 sq. ft.) or larger and a minimum average lot dimension of 150 feet may be developed with private wells upon compliance with the requirements of Sarasota County Ordinance No. 97-034, as may be amended from time to time.

b) Subdivisions having an average minimum lot size of five acres or larger with no lots less than three acres may be developed with private wells upon compliance with the requirements of Sarasota County Ordinance No. 97-034, as may be amended from time to time.

c) Subdivisions having a minimum lot size of one acre or larger may be developed with private wells when rezoned to Conservation Subdivision and upon compliance with the requirements of Sarasota County Ordinance No. 97-034, as may be amended from time to time.

3) Water quality standards. All central potable water systems shall provide water meeting quality standards as described in Chapter 403, Florida Statutes, "Florida Safe Water Drinking Act" and Chapter 17-550, Florida Administrative Code, and as prescribed by the U.S. Environmental Protection Agency.

4) Design standards. Central potable water systems shall be designed by a Florida registered professional engineer in accordance with these regulations, with the requirements of applicable state statutes and regulations, and with the following minimum design standards.

a) Central potable water systems shall be designed and constructed in accordance with County, State and Federal standards including satisfaction of the domestic requirements established by the appropriate State agency and the fire protection requirements established by the American Insurance Association (National Board of Fire Underwriters).

b) The potable water distribution systems shall deliver fire flows as follows in residential areas consisting of one and two-dwelling units not exceeding two stories in height:

TABLE INSET:

Distance Between Buildings	Needed Fire Flows
over 100'	500 gpm
31'--100'	750 gpm
11'--30'	1,000 gpm
Less than 11'	1,500 gpm

c) In-line valves shall be installed at intervals so that no break or repair will necessitate shutting down a length of pipe greater than 500 feet as measured along the street in nonresidential and multifamily subdivisions or greater than 1,000 feet in one and two-family residential subdivisions.

d) Central water systems shall be designed to be compatible with the County Central Water System or other approved existing surrounding central water systems. In addition, central potable water distribution mains shall be designed and constructed to extend across the total roadway frontage of new subdivisions. All mains shall be interconnected with other area mains and lines whenever possible to ensure proper mutual support.

b. *Individual potable water systems.* Individual potable water systems which serve eight or fewer equivalent dwelling units may be permitted when the requirements for a central water system is waived pursuant to Subdivision Technical Manual.

Subdivisions not provided with a central water system shall have drafting points connected to available bodies of surface water consisting of a minimum eight inch pipe with standard fire hose connection or sump and providing two hours of fire flow capacity.

c. *Potable water level of service:*

1) System capacity shall be based on 250 gallons per equivalent dwelling unit per day based on maximum daily flow plus the maintenance of minimum

fire flow standards.

2) Minimum potable water quality standards shall be as defined by the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection, except where the County has imposed stricter standards.

6. *Sanitary sewerage system.*

a. *Central sanitary sewerage systems.*

1) Central sewerage systems. Connection to an existing central sewerage system shall be required where the system is located within the distances indicated below. The distance shall be measured from along an accessible right-of-way or easement, to the closet point on the perimeter of the subdivision.

Exception:

- a) Connection is not required if the existing system does not have sufficient capacity.
- b) Connection is not required if the existing system prohibits such connection.

Distance requirements will be prorated based upon the number of approved equivalent dwelling units (EDUs) within the subdivision and will be calculated according to the following schedule:

TABLE INSET:

Number of approved EDUs within the Subdivision # of EDUs	Connection with a central system will be required if within: Distance (Ft.)
Up to 15	1,320
16 to 50	1,900
51 to 100	2,700
101 to 150	3,050
151 to 200	3,400
201 to 250	3,750
251 to 300	4,100
301 to 350	4,450
351 to 400	4,800
401 to 450	5,150
451 to 500	5,500
501 to 550	5,750
551 to 600	6,000
601 to 650	6,250
651 to 700	6,500
701 to 750	6,750
751 to 800	7,000
801 to 850	7,250

851 to 900	7,500
901 to 950	7,750
951 to 1,000	8,000

Distance requirements for connection to a central sewerage system shall be prorated within this schedule based upon the number of approved EDUs within the new subdivision. Larger developments (i.e., Developments of Regional Impact [DRI] and Developments of Critical Concern [DOCC]) shall be evaluated on an individual basis within the guidelines of all applicable Federal, State and County regulations.

If a County or other existing central sewerage system does not exist within the above requirements, or is not available under (a) or (b) above, the Board may approve a central sewerage system. Where the developer provides a central sewerage system utilizing a temporary sewerage treatment plant, the completed plant, lines, and all other appurtenances shall be deeded at no cost to Sarasota County to be operated and maintained by the County, unless dedication is waived by the Board.

When appropriate, in order to provide for future service to the area, a central collection or transmission main, as appropriate, shall be designed and constructed to extend across the total roadway frontage of new developments.

2) Design standards. Central sewerage systems shall be designed by a Florida registered engineer in accordance with these regulations, the requirements of applicable state agencies, and following minimum design standards:

- a) Central sewerage systems shall be designed, constructed and maintained in such a manner as not to adversely affect the water quality of any existing stream, lake, or underground aquifer.
- b) Central sewerage systems shall be designed to be compatible with the County central sewerage system or other approved existing surrounding central sewerage systems.

3) Exemption from central sewerage system requirement. Subdivision shall be exempt for the provisions of 1) above, under the following conditions:

- a) Subdivisions having a maximum number of 15 lots and a minimum lot size of one acre (43,560 sq. ft.) or larger and a minimum average lot dimension of 150 feet may be developed with private well and on-site sewerage disposal system upon compliance with the requirements of Sarasota County Ordinance No. 97-093 (Design, Construction and Repair of On-Site Sewerage Systems) and Chapter 64E-6 of the Florida Administrative Code, as they may be amended from time to time.
- b) Subdivisions having a maximum number of 15 lots and a minimum lot size of at least one-half acre (21,780 sq. ft.) and a minimum average lot dimension of 100 feet may be developed with connection to a central water system and an on-site sewerage disposal system upon compliance with the requirements of Sarasota County Ordinance No. 97-093 (Design, Construction and Repair of On-Site Sewerage Systems) and Chapter 64E-6 of the Florida

Administrative Code, as they may be amended from time to time.

c) Subdivisions having an average minimum lot size of five acres or larger may be developed with private well and on-site sewerage disposal system upon compliance with the requirements of Sarasota County Ordinance No. 97-093 and Chapter 64E-6 of the Florida Administrative Code as they may be amended from time to time.

d) Subdivisions having a minimum lot size of one acre or larger may be developed with private well and on-site sewage disposal system when rezoned to Conservation Subdivision and upon compliance with the requirements of Sarasota County Ordinance No. 97-094 and Chapter 64E-6 of the Florida Administrative Code, as they may be amended from time to time.

4) Nonresidential central sewerage systems. A central sewerage system shall be provided in all new nonresidential subdivisions.

b. *Requirements for on-site sewerage disposal systems.* On-site sewerage disposal systems with a treatment capacity of less than 2,000 gallons per day may be permitted when the development is exempt from the central sewerage system requirement, pursuant to Section Subdivisions Technical Manual. Such individual systems shall fulfill the following requirements:

1) On-site sewerage disposal systems should be located in the front yard or other area, which will provide a convenient and economical connection to a future central sewerage system. Within the Myakka River Protection Zone, on-site sewerage disposal systems whether upon a lot, a parcel, or within a subdivision shall be located landward of the primary structure.

2) No on-site sewage disposal system shall be located within 100 feet (when measured along the ground) of the ordinary high water mark of non-tidal lakes, streams, canals, bays, rivers and ponds or within 100 feet of the mean high water line of tidal bodies of water, including bays and tidal portions of rivers, streams and canals.

3) Satisfactory engineering plans shall be submitted indicating the proper water table/wastewater system separation, as provided for in Sarasota County Ordinance 97-093 (Design, Construction and Repair of On-Site Sewerage Systems) and Chapter 64E-6 of the Florida Administrative Code.

c. *Sanitary sewer level of service:*

1) Minimum average daily flow to be treated from domestic units shall be 200 gallons per equivalent dwelling unit per day; and

2) Minimum effluent treatment standards for land application, after disinfection and prior to discharge, shall meet Secondary Treatment criteria, and as required by State Law or County Ordinances. Discharge criteria for off-site surface water shall meet, at a minimum, Advanced Wastewater Treatment Standards.

7. *Other utilities.* Utility lines of all kinds, including electric power and light, telephone and telegraph, cable television, water, sewer, and gas shall be constructed and installed beneath the surface of the ground within new subdivisions, unless based on standard engineering practice it is determined by the County Engineer that soil, topographical, or any other compelling conditions make the installation of such utility lines as prescribed herein unreasonable or impractical. It shall be the developer's responsibility to make the necessary arrangements with each utility in accordance with the utility's established policies. Said arrangement shall be completed prior to the submittal of final subdivision plans. The

underground installation of incidental appurtenances such as transformer boxes, pedestal mounted terminal boxes for electricity, or similar service hardware necessary for the provision of electric and communication utilities shall not be required. Below ground installation shall not normally be required for bulk electric power supply lines and major communication feeder lines. Nothing in this section shall be construed to prohibit any entity furnishing utility service within Sarasota County from collecting (as a condition precedent to the installation of service facilities) a fee, prepayment, or contribution which may be required to aid in construction.

8. *Inspection of improvements.* After required improvements have been installed, a Florida registered engineer shall be required to submit certification to the County that the improvements have been constructed substantially according to approved plans and specifications. The County Engineer shall periodically inspect all construction, including roads and drainage not to be dedicated to the public, but subject to these regulations. Sewer and water lines shall be inspected by Land Development Services. The County Engineer shall immediately call to the attention of the developer and his engineer, any failure of work or material. The County Engineer may suspend work that is not in conformity with approved plans and specifications, and he may require laboratory tests when appropriate. The Building Official shall verify that all sidewalks are installed prior to final inspection of any adjoining building. Resource Protection Services shall inspect all littoral zones, mitigation areas and preservation or conservation areas.

9. *Abandoned wells and septic tanks.* All abandoned wells as defined in Sarasota County Ordinance 97-034 or as amended, shall be plugged by a licensed well driller in an approved manner, within 60 days from notification and prior to development approval.

All existing abandoned septic tanks must be pumped, crushed and filled in accordance with Chapter 64E-61 F.A.C. within ninety (90) days of notification and prior to development approval.

(Ord. No. 2000-074, § 9, 2-27-2001; Ord. No. 2003-028, § 6, 11-12-2003; Ord. No. 2004-061, § 15, 7-28-2004)

SITE DEVELOPMENT DESIGN TECHNICAL MANUAL

A. *General.* All lands proposed for development shall be suitable for the various purposes in the request for approval. The developer shall also demonstrate that the proposed development complies with the Comprehensive Plan, the Zoning regulations, other divisions of these regulations, and other laws, ordinances and regulations, as applicable.

1. Use of natural features. Developments shall be designed to maximize the preservation of natural features, trees, tree masses, unusual rock formations, watercourses, and sites which have historical significance views and similar assets.

2. Consideration of soil and flood hazards. No Site and Development Plan shall be approved unless the developer submits substantial and competent evidence that all lands intended for use as building sites can be used safely for building purposes, without interruption of access or other undue hazard from flood or adverse soil or foundation conditions. The following standards shall apply;

a. To protect floodplain functions including conveyance storage, wildlife habitat and water quality functions;

1) No net encroachment will be allowed into a floodplain, up to that encompassed by the 100-year event, or on floodplain associated soils defined in Sarasota County Comprehensive Plan Future Land Use Policy

1.1.6.

2) Compensating storage shall be equivalently provided between the seasonal high water level and the flood level.

3) Vegetative buffers shall be established between future development and watercourses, including bay waters. Buffer widths shall be measured landward from the top of bank or landward extent of wetland vegetation.

4) Minimum buffer widths shall be 50 feet.

5) Specific buffer width standards, or flood plain protection measures or water quality enhancement measures that are equivalent in water quality treatment and habitat protection to a 50-foot wide vegetated buffer, and that have been imposed or approved through a Critical Area Plan, including a Sector Plan or Corridor Plan; a Planned Development District; a Development of Regional Impact pursuant to Chapter 380, Florida Statutes; a Regional Watershed Plan; or a development permit as defined in Sarasota County Concurrency Management regulations, as amended, issued by Sarasota County, shall supersede the buffer width standards contained herein.

6) Native vegetation shall not be removed from buffers except as necessary for:

- a) County maintenance access;
- b) Road and utility crossings;
- c) Nature trails;
- d) Access to water dependent uses such as docks; and
- e) Subdivision amenities such as golf course fairways when such crossings are unavoidable.

If nuisance/invasive species are removed in areas where they are dominant they shall be replaced with native vegetation. If no vegetation exists in the buffer, native trees, shrubs or grasses shall be planted. Plantings shall not interfere with County maintenance access.

b. Developments located in areas of special flood hazard, as delineated by the Federal Emergency Management Agency, shall comply with those requirements in addition to all applicable County regulations.

c. Approval of drainage and flood protection plans does not constitute a representation, guarantee or warranty of any kind by Sarasota County or any officer or employee as to practicality or safety of any protective or other measure. Approval of such plans shall create no liability upon or cause action against such public body, offices, or employees for any damage that may result pursuant thereto.

d. All development which involves land subject to the Sarasota County Gulf Beach setback line and/or Barrier Island Pass 20-year hazard line, or Florida Department of Environmental Protection Coastal Construction Control Line, or other regulation thereof by Sarasota County shall have said line(s) depicted on the plan.

3. Consideration of native habitat. The development of land shall be consistent with the Principles for Evaluating Land Development Proposals in Native Habitats located in the Environment Chapter of Apoxsee. Adverse environmental impacts shall be minimized.

4. Site and Development Plans shall include the delineation of the 100-year/24-hour floodplain on a specific plan sheet. This plan sheet will be recorded in the Official Records

prior to issuance of construction authorization.

B. *Site access.*

1. Access. Developments without frontage on a public or private street shall be connected to such street by an access easement not less than 20-feet wide. If there is not minimum lot frontage required by the Zoning regulations then 20 feet of frontage abutting a public or private street may be substituted for the access easement.

2. Access design. Access driveways shall be designed to intersect with the street as nearly as possible at right angles.

3. Driveway separation. Driveways should align with existing driveways on the opposite side of the road. Where that is not feasible, major driveways on opposite sides of the road should be offset no less than 150 feet measured along the roadway centerline from the centerline of the driveway to the centerline of the driveway.

4. Continuation of existing street pattern. The proposed development shall be coordinated with the street systems of the surrounding area. The proposed development shall not preclude the connection of streets in adjacent areas where required to provide for proper traffic circulation. Where the streets required to be connected are public streets the connection shall also be a public street.

5. Street access to adjoining property. Street stubs to adjoining areas shall be provided to give access to such areas or to provide for future traffic circulation. Street stubs in excess of 250 feet shall be provided with a temporary cul-de-sac turnaround within the platted right-of-way complying with the cul-de-sac standards contained herein. When adjoining lands are subsequently developed, the developer of said adjoining land shall bear the expense of extending the street and restoring it to the original design cross-section.

6. Partial width streets. Where an existing partial width street is adjacent to a new development, the unimproved portion of the street shall be improved and dedicated by the developer.

7. Transportation mitigation and dedication requirements.

a. In order to mitigate the adverse impacts of proposed development on County transportation facilities and ensure that development does not proceed in the absence of facilities adequate to serve such development, a developer shall be required consistent with the requirements of this section to provide at no expense to Sarasota County for the dedication of on-site road right-of-way sufficient to ensure that streets providing access to a proposed development conform to minimum County right-of-way standards. Land dedicated for any on-site public or private right-of-way shall not be counted in satisfying the yard or area requirements of the Zoning regulations.

b. Where the proposed development includes or is adjacent to a platted street, public right-of-way or planned extension of a street which does not conform to the minimum right-of-way design and construction requirements of these land development regulations, the Thoroughfare Plan, or other regulations related to road right-of-way standards, the developer shall be required to dedicate on-site road right-of-way to the extent on-site road right-of-way is necessary to bring the platted street, public right-of-way or planned extension of a street into conformity with the appropriate right-of-way standards, and to the extent the dedication of on-site road right-of-way complies with Subsection d. of this section. If a proposed development abuts only one side of road, only the remaining portion of the required right-of-way for that side of the street shall be dedicated to the extent the dedication of on-site road right-of-way complies with Subsection d. of this section.

c. Any right-of-way dedicated pursuant to the provisions of this section shall be in

addition to and shall not affect the obligation of the developer to provide other on-site and site related improvements necessary to accommodate the proposed development including, but not limited to, access roads, turn lanes, acceleration and deceleration lanes, traffic signalization and other improvements required by these regulations or any ordinance or regulation of Sarasota County.

d. The amount of land required to be dedicated for on-site road right-of-way shall not exceed a proportionate fair share representing the amount of additional roadway reasonably necessary to accommodate the anticipated impacts of the proposed development at buildout.

e. A developer dedicating right-of-way pursuant to the provisions of this section shall be entitled, subject to the provisions of the Sarasota County Road Impact Fee Ordinance, to a) a credit against road impact fees for the value of any dedicated road right-of-way or b) reimbursement for the value of any dedicated road right-of-way through a Capital Contribution Front Ending Agreement pursuant to Section 380.06(16), Florida Statutes, if the development is a Development of Regional Impact; or both. The amount of the credit shall be based on value of the right-of-way at the time of:

- 1) Submission of preliminary Site and Development Plan, or
- 2) Commencement of construction of the roadway for which credit is sought;

whichever occurs first.

f. In the event the County determines there is a need for additional road right-of-way for future County road purposes adjacent to or within a site for which development approval is sought and the owner is not required to dedicate said right-of-way pursuant to this section, the County may require that all setbacks be measured from the edge of the projected future right-of-way line provided a notice of intent to acquire right-of-way is issued to the owner before preliminary Site and Development Plan approval. Within 90 days following issuances of the "First letter" for the development by the County Engineer, the County shall commence proceedings to acquire the additional right-of-way by purchase or condemnation and shall proceed in good faith to acquire said property.

g. A developer whose proposed development contains an existing, on-site road improvement that fails to comply with the minimum standards of the Subdivision Technical Manual for construction and design shall improve said road to the minimum construction and design standards set forth in these Land Development regulations. Said on-site road shall be dedicated at no expense to Sarasota County, unless it is approved by Sarasota County as a private roadway.

h. Shared access or joint use driveways are encouraged to serve adjoining parcels in order to increase average spacing of access points and reduce the number of access points and increases the spacing between driveways.

i. Dedication of on-site road right-of-way pursuant to this section shall not be required where the dedication of right-of-way would deprive the landowner of all beneficial use of the property or provide no reasonable benefit to the proposed development.

j. In order to promote the safety of the County transportation system, roads that provide access to development shall meet existing County road standards or be adequate to accommodate the types and volume of traffic to be generated by the proposed development. Where an existing or proposed road right-of-way intended to provide access to a proposed development does not meet County standards or is inadequate to accommodate the types or volume of traffic anticipated to be

generated by the development, plus existing or projected background traffic, Sarasota County shall deny site plan, subdivision plan, rezoning or special exception approval until such time as the deficiencies in the transportation facilities are corrected unless such denial results in a taking of all beneficial use of the property. Deficiencies which may warrant denial of approval include unsafe condition of the road surface, inadequate pavement width, unsafe condition of shoulders of the road, inadequate turning radii or frontage roads for the type of traffic may create safety hazards for pedestrians and other conditions creating safety hazards on the road facility.

k. The Board of County Commissioners shall adopt after public hearing administrative guidelines to implement the provision of this section, which guidelines shall establish a methodology for determining the amount of road right-of-way required to be dedicated consistent with the requirements of this section. In the interim before guidelines are adopted, the County Engineer shall determine on a case by case basis consistent with the requirements of this section the amount of right-of-way to be dedicated based on the projected traffic impact of a proposed development at buildout. Any determination of the County Engineer may be appealed to the Board of County Commissioners for a final determination.

l. The Board of County Commissioners shall have the authority to grant a variance from any requirement of this section upon application of an owner or agent pursuant to the variance procedures set forth in Division D. By variance, the Board shall have the authority to adjust the amount of road right-of-way required to be dedicated pursuant to this section to ensure that an owner is required to dedicate no more than a proportionate fair share of road right-of-way reasonably necessary to accommodate the anticipated impacts of the proposed development at buildout.

C. *Requirements for protecting preservation, conservation and buffer areas.*

1. All preservation, conservation and buffer areas shall be staked or otherwise marked clearly prior to and during construction. Silt screens, hay bales or other suitable sediment control devices shall be installed along the landward edge of required wetland buffers prior to construction. These devices shall remain in place until construction is completed.

2. All activities involving filling, excavating, disturbing of vegetation (both trees and understory) and storing of materials shall be prohibited within preservation or conservation areas and buffer areas. Exceptions may be granted by Resource Protection Services only to facilitate implementation of approved management plans, or construction of structures such as boardwalks, nature trails, bicycle paths, or selective removal of nuisance/invasive vegetation by hand or hand-operated tools.

3. Resource management events shall be implemented within the timeframes outlined within the approved management plan.

D. *Requirements for protecting trees.* The proposed development must comply with the requirements of the current Tree Protection Ordinance.

E. *Open spaces and recreation areas.*

1. Private open spaces and recreation areas. Developers may include private parks, lakes and recreation areas provided the following are met: Native habitat has been used to fulfill open space requirements in accordance with the policies in the Environment Chapter of Apoxsee; the proposed area shall be clearly identified on the site plan; the areas shall be adequate for the intended purposes and shall have satisfactory access; assurance shall be given (deed restrictions or maintenance agreements that are legally acceptable to the Board after review by the County Attorney) that the areas shall be adequately maintained and that all owners or tenants shall be required to belong to and financially support the operation and maintenance of said facilities. Private parks and recreation areas shall be identified on the

plan as "Common Areas for the Owners or Tenants" of property in the development.

2. Other open space and recreation reservations. The provisions of this section are minimum standards. None of the paragraphs above shall be construed as prohibiting a developer from dedicating other land for open space and recreation purposes in addition to the requirements of this section.

3. Recreation level of service. The recreation level of service (LOS) of no less than seven acres per 1,000 resident population, as established in the Recreation and Open Space Chapter of Apoxsee, shall be maintained throughout the unincorporated area of the County in accordance with the Concurrency Management regulations. The seven acres shall be allocated among five park classifications, with the following minimum acreage allocations, which are based on the 1992 distribution of existing developed parks in Sarasota County:

0.3 acres of Neighborhood park;

0.3 acres of Community park;

0.9 acres of Metropolitan park;

1.7 acres of Highly Specialized park; and

3.8 acres of "Other" park, including, but not limited to, parks designated as Future Capacity, Conservation Lands, and Water Access.

To qualify for inclusion as one of the park classifications in the above cited Recreation LOS, a park site must meet the minimum criteria established in the County's "Recreation Guiding Principles".

F. *Dedications*. Public easements and rights-of-way shall be dedicated to Sarasota County at no expense to the County. Suitable maintenance areas for appurtenant drainage structures shall be provided. All easements public or private shall be recorded prior to construction authorization.

(Ord. No. 2000-074, § 9, 2-27-2001)

GOLF COURSE TECHNICAL MANUAL

A. *Resource Management Plan*. The Resource Management Plan shall be prepared by experienced professionals familiar with golf course design, construction, agronomy, environment/natural resources, and water resources. The Resource Management Plan shall be a site-specific, comprehensive document submitted to the County detailing goals and Best Management Practices (BMPs) to include, but not limited to, vegetation management, fertilizer and pesticide management, stormwater management, water quality management, irrigation management and general management.

The Resource Management Plan shall consist of Water Resources (Water Quality and Water Conservation) and Natural Resources Components.

The Resource Management Plan shall be updated every five years and submitted to the County for review. Any significant changes to the golf course that do not require additional County development approval shall be submitted to the County as they occur. The approved golf course shall submit annual monitoring reports for the Resource Management Plan. The monitoring reports shall begin during the initial project construction phase and continue until five years after the issuance of a site certification for the entire project. The report shall provide discussion and documentation on the following activities:

1. *Water Resources Component*.

a. A Water Quality Plan shall be prepared and submitted for approval by the County Administrator or designee to insure on-going protection of ground and

surface water quality and shall address methods to avoid and minimize potential adverse impacts to surface water or ground water. The Water Quality Plan shall include Integrated Pest Management (IPM). The major components of IPM to be included are as follows:

- 1) Monitoring and inventory of pest populations;
- 2) Determination of pest-induced injury and action levels;
- 3) Identification of priority pest problems;
- 4) Selection and timing of least toxic management tools;
- 5) Site-specific treatment with minimized chemical use;
- 6) Evaluation and adjustment of pesticide applications.

b. A Water Quality Monitoring Plan also shall be prepared and submitted for approval by the County Administrator or designee. See Section B.4.a.1)d) for plan requirements.

c. A Water Conservation Plan shall be prepared and submitted for approval by the County Administrator or designee and shall include a drought-contingency plan that identifies alternate sources of water and areas where irrigation can be reduced, an Irrigation Water Resources Plan addressing water needs and sources, and a Soils Management Plan. See Sections B.4.b.1) and B.4.b.3)c) for plan requirements.

2. *Natural Resources Component.*

a. A Natural Resources Component shall be prepared and shall describe appropriate management techniques for natural vegetation areas based upon the existing and created plant communities. Management techniques addressed shall include, but are not limited to, the following:

- 1) Invasive exotic plant control;
- 2) Removal of any trash and debris;
- 3) Restoration of appropriate habitat-specific hydrology;
- 4) Prescribed fire or other means for fuel load reduction or habitat improvement;
- 5) Native plant restoration;
- 6) Discussion of flora and fauna;
- 7) Enhancement of wildlife habitat;
- 8) Retention of dead trees and snags;
- 9) Tree protection and removal;
- 10) Identification of areas for restoration, replanting, or enhancement of riparian habitat to re-establish wildlife migration corridors and linkages between fragmented habitat areas. Protection and planned restoration/enhancements for such areas during construction and ongoing operation is required. The Component shall protect drainage systems that support preserved vegetation.

b. A Natural Resources Monitoring Plan shall be prepared that includes the status of wetland mitigation or wetland/upland enhancement and/or restoration; littoral zone monitoring; wildlife monitoring; a discussion of wildlife and protected species activity and habitat management activities; land management activities including those used on the golf course as well as preserve or conservation areas. The plan should

include corrective actions if adverse impacts are identified. If after five years no significant adverse impacts are determined and no change in ownership has occurred, reporting may be terminated at the discretion of the County Administrator or designee.

B. *Design and Performance Standards.*

1. *Golf Driving Ranges.*

a. A site plan of the facility shall be submitted showing the layout of the property with all tees, roughs, side yards, structures, off-street parking areas, fencing and proposed plant materials and location.

b. The site shall be of such configuration so as to permit a minimum driving distance of 300 yards from each proposed tee. The minimum distance requirement may be modified upon satisfactory proof of special circumstances for "limited flight ball" type facilities such as aqua ranges.

c. Dimensional requirements shall be as generally illustrated in Figure 1. Minimum required yards on all sides of a driving range shall be 50 feet. Tees shall be as generally illustrated on Figure 2.

d. Lighting used at the site shall be designed, located and constructed so as to prevent glare and minimize reflection onto neighboring property.

2. *[Designed with Safety Considerations.]* The golf course shall be designed and configured with consideration of the safety of any adjacent residential development. The Developer and/or Owner shall provide a statement to the County that the golf course design will not create a hazard to public safety and is compatible with adjacent residential uses.

3. *Natural Resources.* Natural features, state and federally listed species' habitat areas, wildlife corridors, and environmentally sensitive areas as defined by Apoxsee and appropriate state and federal agencies shall be identified early in the site evaluation process. The preservation of these areas shall be a basis for site design of the course.

a. *Cart Paths and Trails.*

1) All cart paths shall be located and designed so as to minimize environmental impacts (e.g. length, width, location, grading, stream and wetland crossings, and visual impact).

2) Golf cart and pedestrian travel outside of paths shall not occur within or adjacent to sensitive habitat areas.

3) Cart paths approved in sensitive areas shall be constructed of permeable materials and be a maximum of ten feet wide.

4) Golf cart crossings of natural water bodies, watercourses, and flow-ways shall be elevated and shall be a maximum of ten feet wide.

5) Any nature trails approved within preserve areas are for pedestrian use only. All-terrain vehicles, dirt bikes and other motorized vehicles are prohibited within preserve areas.

b. *Vegetation.*

1) Every effort shall be made to route the golf course in such a way as to minimize the need to alter or remove existing native landscapes. The golf course routing shall identify areas that provide opportunities for restoration and/or enhancement of valuable habitat in the event of disturbance.

2) Any areas out of play should be utilized to retain or restore existing native vegetation, where possible. The design shall provide for restoration or

enhancement of environmentally sensitive areas.

- 3) A plan shall be provided for the initial removal, maintenance and control of nuisance and invasive exotic plants. Species to be addressed are as specified in Sarasota County's Exotic Plant Code, Section 54-621, state regulations (Chapters 5B-57.007 and 62C-52.011, FAC) and the Florida Exotic Pest Plant Council's list of Category I and II invasive species as appropriate to this geographic region. Nuisance and invasive vegetation shall be removed in accordance with the approved plan and properly disposed of in an approved landfill or other location or method approved by the county.
- 4) All landscape plans shall be signed and sealed by a Florida Registered Landscape Architect.
- 5) Tree protection and removal will comply with the Sarasota County Code, Chapter 54, Article XVIII, Tree Protection.
- 6) Plant species that are best suited to the local area shall be selected. Native, naturalized or drought tolerant plants shall be used wherever possible unless otherwise prohibited.
- 7) The design of the course and related facilities shall maximize the preservation of clusters or significant stands of native trees with consideration given to the playability of the golf course.

c. *Habitat.*

- 1) Golf courses shall be located, designed, and operated so that:
 - a) Critical habitat is conserved and the development does not adversely impact viable on-site occupied wildlife habitat for federal or state protected species, species of special concern, threatened, or endangered species unless authorized by the U.S. Fish and Wildlife Service or the Florida Fish and Wildlife Conservation Commission; and
 - b) As much natural vegetation as feasible is retained and vegetation is enhanced through supplemental planting of native trees, shrubs and herbaceous vegetation, such as along fairways and out of play, to provide wildlife habitat and along watercourses supporting fish and other water dependent species.
 - c) Perimeter fences or walls are not required or encouraged. If perimeter fences or walls are proposed, they shall be designed to:
 1. Permit wide-ranging small and large animals to traverse the site; and
 2. Provide a minimum of one-foot clearance between the ground and the lowest portion of a fence or wall, except where determined to be necessary to exclude feral animals.
 3. Alternatives to 2., above, that meet the intent of providing native wildlife the ability to traverse the site will be considered, but any alternative fence or wall is subject to the approval of the County Administrator or designee.
- 2) On proposed golf course sites where regional wildlife corridors have been identified, the golf course shall be configured to provide for the maintenance and/or enhancement of native habitat to facilitate the continued

use of the wildlife corridor. Existing and proposed crossings of the wildlife corridor for linear facilities associated with the golf course should be minimized. Unavoidable crossings must accommodate wildlife movement.

3) Retention of dead trees and snags is encouraged.

4) Habitat for wildlife species that help control pests (e.g., bats, bluebirds, purple martins, etc.) shall be conserved and enhanced. Additional habitat for these beneficial species should be created whenever feasible and environmentally desirable, including supplying nest boxes.

5) Native habitat shall be managed to maintain healthy populations of wildlife and aquatic species.

d. *Waterbodies/Watercourses/Flow-Ways.*

1) Natural waterbodies, watercourses, and flow-ways shall be left in a natural, unaltered condition and shall not be channelized or excavated for new lakes or ponds.

2) If a crossing of a natural water body, watercourse, or flow-way is necessary, the crossing shall be designed to minimize the removal of trees and other shading vegetation.

3) Crossings of natural water bodies watercourses, and flow-ways shall be bridged or otherwise provide for undiminished water movement or flow.

4) Crossings shall be designed in such a way as to minimize erosion and harmful effects to riparian and wetland habitats and recognized wildlife corridors.

5) Created or restored water bodies, watercourses, and flow-ways may be crossed by bridges or culverts, or a combination thereof, if approved by Sarasota County and the Southwest Florida Water Management District.

e. *Buffers.*

1) A 30-foot native vegetation buffer for wetlands and natural water bodies shall be provided from areas of managed turf within golf courses as measured from the edge of any managed turf to the wetland jurisdictional line, as determined by Chapter 62-340, FAC, or the top of bank of water bodies. Where justified by site physical conditions, a properly designed structural buffer may be utilized in lieu of the setback buffer from wetlands. A structural buffer may consist of a fence or native vegetation, which does not require irrigation or fertilization and planted at county-approved densities.

2) A 20-foot limited spray zone shall be established from the top of bank around all water management lakes. Chemicals may be applied in this 20-foot zone by spot treatment only on an as needed basis to reduce chemical and fertilizer run-off.

3) The wetlands, mesic hammock, and associated upland vegetative buffers shall be maintained as preserves and labeled as preserve areas on all plans. All activities including but not limited to filling, excavating, removing and altering of vegetation (including trimming of both trees and understory) and storing of materials shall be prohibited within the preservation areas, unless written approval is first obtained from the County. Proposed wetland and mesic hammock impacts are subject to review by the County during the Preliminary/Site and Development Plan review.

4) Any maintenance facility, irrigation pump or outdoor storage area, shall

provide visual screening around such facility that provides 0.7 (or 70%) opacity. Types of visual screening shall be consistent with the Zoning Ordinance.

5) Perimeter buffers shall be consistent with the zoning code.

4. *Water Resources.*

a. *Water Quality.* The golf course shall use the following Surface Water Protection, Ground Water Protection, Maintenance Facilities and Integrated Pest Management Design and Performance Standards.

1) *Surface Water Protection.*

a) Stormwater:

1. Stormwater run-off shall be treated/pretreated in accordance with County and State standards and permitted by the Southwest Florida Water Management District (SWFWMD) prior to discharge to any wetland system.

2. The golf course shall employ BMPs to control non-point source (stormwater) pollution.

3. Berms, terraces, vegetative buffer strips, grassed drainage swales, or other recommended technologies shall be used in parking areas for drainage controls to minimize pollution to nearby riparian areas and surface waters.

4. All greens shall utilize underdrains.

5. The golf course shall have a training and education program for employees in the proper BMPs to prevent runoff pollution and protect surface water quality.

b) *Irrigation Design Standards.* The golf course irrigation system shall be designed utilizing current best irrigation technologies to minimize overspray to surface waters.

c) *Nutrient Management Plan.* The golf course shall design and implement a Nutrient Management Plan to limit effluent, raw water, and fertilizer nutrient applications to levels equal to or less than turf grass and vegetation nutrient uptake in order to minimize nutrient transportation via runoff, inflow, or deep percolation, based on BMPs that include but are not limited to:

1. Maintenance of healthy turf grass using appropriate irrigation, pest, and compaction strategies.

2. Monitoring and maintenance of thatch level.

3. Periodic soil aerification.

4. Sampling to analyze soils to determine phosphorus content and to set fertilizer application rates to correspond to nutrient uptake.

5. Utilization of soil and plant tissue tests to establish proper application rates.

6. Nitrogen budgets for all sources of nitrogen and phosphorus.

7. Reduction of total fertilizer usage.

8. Utilization of appropriate application technology including multiple low rate applications, granular formulations, proper equipment calibration and maintenance, proper disposal of unused fertilizer, and no application to bare soil or impervious surfaces or surface waters, except at the time of grassing the course.

9. Utilization of buffer zones and setbacks from surface water and environmentally sensitive features.

10. Control of timing of fertilizer applications in relation to precipitation events and irrigation schedules.

11. Detailed records that identify all fertilizers used, application rates, application times, application methods, and application locations.

d) A Water Quality Monitoring Plan shall be prepared to ensure the on-going protection of ground and surface water quality. The Monitoring Plan can be modified based on site-specific conditions. A Monitoring Plan developed in partnership with the Audubon International Signature Program for new golf courses can be utilized in lieu of the requirements of this section. The Monitoring Plan shall include the following:

1. A predevelopment background (baseline) study with samples taken at the following locations:

a. Upstream and downstream of the golf course development on adjacent major rivers, streams, creeks, if present.

b. Flowing tributaries, wetlands, and water features draining golf course development, if present.

c. Any additional site-specific locations selected prior to development.

2. Sample frequency:

a. One set of dry season surface water quality samples and one set of wet weather discharge surface water quality samples will be collected prior to commencement of construction.

b. Post-construction surface water quality sampling will begin with the installation and maintenance of golf course turf and landscaping. Samples will be collected a minimum of three times per year with one sampling event scheduled during July (the beginning of the wet season), a second sampling event scheduled during October (the end of the wet season), and a third sampling event scheduled during February through May (dry season). Should there not be a discharge on the scheduled sample date, samples shall be taken during the next discharge event.

c. Post-construction surface water quality sampling will continue through three years of operation and can be discontinued at the end of that time period.

provided that all required water quality monitoring has been completed and the development continues to implement all current Management Plans.

3. Sampling parameters will be determined based on golf course operation and basin specific parameters of concern (identified by the Total Maximum Daily Load (TMDL) Program).

4. Corrective actions:

a. Resampling. Should a spike occur for any water quality parameter, the site shall be resampled for that parameter within ten working days or, if no discharge, during the next discharge event.

b. In the event that water quality monitoring indicates a chronic deviation above applicable State Water Quality Standards or background, the development shall take whatever corrective actions are necessary to achieve compliance within a reasonable period of time.

c. Golf courses that do not continue strict adherence to all current Management plans and do not implement corrective actions to achieve compliance when a water quality problem is identified will be subject to the loss of its stormwater credit(s).

5. Post-construction Monitoring Reports of surface water quality shall be submitted to Sarasota County for review. The reports shall include the following:

a. Surface water quality monitoring at primary outfall structure in each drainage basin.

b. Date, time, location of all sampling events, sample methodology and protocols and the results of all sampling.

2) *Ground Water Protection.*

a) A Wellhead Protection Plan that includes BMPs that meet state and local minimum required setback requirements for potential sources of contamination shall be prepared to provide for ground water protection. The Plan will include the following:

1. Location of all wells and delineation of one-quarter mile around each well within the golf course.

2. Identification of the aquifer that all wells are drawing from, depth of wells, and depth of casings.

3. Inventory of potential sources of contamination within the delineated area.

4. Location of all abandoned wells within the golf course. Abandoned wells shall be plugged in accordance with Chapter 54, Article XIII of the Sarasota County Code.

5. Location of all wells and potential sources of contamination within one-quarter mile of the golf course.

6. An emergency contingency procedure to address the response, containment, and remediation of any hazardous materials spilled.

b) All wellhead protection requirements of Sarasota County, SWFWMD, and the Sarasota County Department of Health shall be strictly adhered to.

c) If a golf course is proposed or requested in any wellfield protection zone, the portion of the golf course in these zones shall be located, designed, and operated to comply with the Wellfield Protection Ordinance.

d) Design, construction, operation, and maintenance of the golf course shall not adversely impact public supply wells.

e) Design, construction, operation, and maintenance of the golf course shall not adversely impact public individual residential wells.

3) *Temporary and Permanent Maintenance Facilities.*

a) The golf course shall comply with criteria outlined in the most current edition of the Florida Department of Environmental Protection (DEP) Best Management Practices for Golf Course Maintenance Departments.

b) Nothing in the DEP Best Management Practices for Golf Course Maintenance Facilities shall preempt other Sarasota County ordinances or provisions of the Sarasota County Code that impose stricter standards.

c) Temporary and permanent maintenance facilities shall be operational prior to grassing the course.

d) Equipment utilized in the maintenance of golf courses and associated developments shall be designed, used, maintained and stored in such a way to eliminate or minimize potential for pollution.

e) Equipment wash facility:

1. The equipment wash facility shall be located in a roofed structure to prevent exposure to stormwater.

2. Wash water generated from cleaning equipment other than pesticide application equipment shall be discharged to:

a. A wash water recycling system,

b. A treatment system that has been permitted under DEP Industrial wastewater rules, or

c. A domestic sewer system through an oil/grease and water separator (with written permission from the utility).

3. Wash water generated from activities described in 2. above shall not be discharged to any pervious surfaces, surface waters, ground water, or wetlands in accordance with Chapter 54, Article VII of the Sarasota County Code.

f) Chemical mixing, loading and storage facility:

1. Pesticides shall be stored in a lockable, concrete, or

metal building located a minimum of 50 feet from other structures to allow for fire fighting access; however, it may be a part of or adjacent to the chemical mixing center (CMC).

2. The pesticide storage area shall be separate from other buildings (except the CMC) or separated from areas used to store other materials, especially fertilizers.

3. The floor shall be an impervious surface sealed with chemical-resistant paint.

4. The floor shall have a continuous sill to retain spilled materials.

5. There shall be no floor drains that drain directly to stormwater facilities.

6. A CMC shall be used for the loading and mixing of all pesticides used on the golf course.

a. It shall be in a roofed structure to prevent exposure to stormwater.

b. The floor shall be a sealed, impervious surface.

c. There shall be a containment structure to prevent spill run-off to the ground, surface waters, or stormwater system.

d. No storm drains shall be installed at the CMC site.

e. A written spill protocol plan shall be on-site at the facility.

f. All employees shall receive proper training in the handling, mixing, loading of chemicals, and spill prevention.

g) Fertilizer storage and mixing facility:

1. Fertilizer shall be stored separately in a concrete building with a metal or other flame resistant roof.

2. Ammonium Nitrate fertilizer shall be stored securely and inventoried to prevent theft.

3. Any spill shall be immediately cleaned up using dry collection methods such as sweeping or vacuuming and the material shall be applied to the golf course as fertilizer.

4. No soaps or water shall be used to prevent runoff to storm drains or surface waters.

5. No storm drains shall be installed at the mixing or loading site.

h) Fueling site and fuel storage area:

1. The fuel dispensers shall be installed on a concrete surface large enough to prevent any spill from reaching the ground, stormwater system, or surface water.

2. Fuel pumps shall have automatic shut-off mechanisms.

3. Spills totaling 25 gallons or more in volume shall be immediately reported to the Department of Environmental Protection via the State Warning Point.

4. Any fuel spill or leak shall be immediately contained; the area shall be cleaned using absorbent or other acceptable materials; the fuel-contaminated material shall be properly disposed.

5. No soaps or water shall be used to clean any fuel spill or leak.

6. No storm drains shall be installed at the fueling site or fuel storage area.

7. Fuel storage tanks should be in compliance with DEP storage tank regulations (Chapter 62-761 F.A.C.)

i) Waste petroleum storage:

1. Used oil, and oil filters shall be collected and stored in separate marked containers and recycled.

2. Used antifreeze shall be collected, stored in a separate marked container, and disposed as hazardous waste.

3. Used batteries shall be stored under cover on an impervious surface and recycled.

j) Organic debris:

1. Grass clippings, tree limbs, and other vegetative debris shall not be allowed to accumulate at one location on the development.

2. Grass clippings, tree limbs, and other vegetative debris shall be disposed of appropriately and shall not be placed into surface waters, water bodies, or stormwater facilities.

3. Grass clippings, if collected, shall be composted or spread in a wooded area or rough.

4. Tree limbs and other vegetative debris other than grass clippings shall be chipped and used for mulch or transported to a legal landfill for disposal.

4) *Integrated Pest Management.* The golf course shall implement an Integrated Pest Management Plan (IPM) that is consistent with State requirements for the use of restricted use pesticides and that uses all suitable control measures to reduce pest related losses to an acceptable level with the goal of respecting genetic diversity and reducing risks to human health and the environment. A key concept of IPM is to manage turf to optimize its health, so it is more resistant to disease and damage. Golf course maintenance employees shall receive training and education in the implementation of the IPM. The IPM should be integrated with irrigation, nutrient, and chemical management plans and should include:

a) Selection of turf should be consistent with the goals of integrated pest management.

b) Utilization of insect traps or other devices or methods to aid in identification of potential pests.

- c) Development of action thresholds for pests below which no application is used to reduce the use of pesticides.
- d) Utilization of biological controls instead of chemical controls.
- e) Pesticide selection using pest specific products that are less toxic, less mobile, and less persistent or using alternate control strategies to reduce hazards to beneficial organisms.
- f) Minimization of applications to reduce hazards to beneficial organisms using information from label, chemical characteristics and site characteristics.
- g) Utilization of spot treatments wherever possible, rather than broadcast treatments.
- h) Control of timing of pesticide application in relation to local environmental conditions and irrigation schedules.
- i) Development of course monitoring and mapping plan to track pest infestation.
- j) Assessment of potential off-site transport prior to application.
- k) Detailed records that identify all pesticide types, application rates, application times, application methods and application locations.

b. *Water Conservation:* The golf course shall use the following Irrigation Water Sources, Irrigation Systems Utilized, Turf and Landscape Design and Performance Standards and use Best Management Practices.

1) *Irrigation Water Resources.*

a) Prior to rezone or special exception approval of any new golf course, an Irrigation Water Resources strategic plan shall be prepared and submitted to the County Administrator or designee for the course that addresses the following. It is recognized that a combination of sources may be required.

1. Irrigation water needs and proposed sources.
2. Use of reclaimed water or stormwater, if available, shall be the highest priority water source considered and evaluated.
3. Surface water systems and/or groundwater systems only should be considered and evaluated when it is demonstrated that reclaimed water and/or stormwater is not available to meet irrigation needs.
4. Confined aquifer systems will be the last source of water to be considered and evaluated.

b) The plan shall demonstrate no adverse impact to the natural environment, including surface water or groundwater systems, by use of proposed water sources.

c) The plan shall also demonstrate no adverse impact to existing legal water uses of proposed water sources.

d) The plan shall identify quantities of each water source needed on a regular basis and what water sources will be used on a stand-by basis only.

2) *Irrigation Systems.*

- a) The use of groundwater, stormwater or surface water for irrigation shall comply with all pertinent SWFWMD and State Health Department rules and regulations.
- b) The Developer and/or Owner shall identify the utility capable of providing reclaimed water to serve the golf course.
- c) The utilization of new and innovative technologies that provide highly efficient water usage, as well as the application of proven technology to decrease overall water use shall be encouraged and to prevent irrigation runoff to surface waters. The golf course irrigation system shall be designed to provide controls such as soil moisture sensors or weather stations for proper water management and conservation and to minimize over-watering.
- d) Golf course irrigation shall be supervised by a trained, full-time superintendent.
- e) Areas of irrigation shall be identified and prioritized in order to reduce routine irrigation and plan for periods of water shortages. All stand-by water sources shall be identified and potential water quantities needed identified.
- f) Irrigation system coverage shall be accurately mapped to determine wetted area and irrigation rates. Irrigation shall be responsive to existing conditions, rather than on a set schedule. The irrigation system shall operate on an "as needed" basis through the utilization of weather forecasting and ongoing assessment of the moisture content of the soils. Drawings will include all irrigated areas, flow rates, actual spray patterns, etc. for all heads and zones.
- g) An Irrigation System Maintenance Plan shall be submitted that includes programs to regularly inspect for leaks and to monitor usage.
- h) Irrigation management education will be provided for irrigation technicians, so that they are fully trained in water conservation and irrigation principles outlined as part of the Water Conservation Plan.

3) *Turf and Landscape Design.*

- a) Golf Courses must comply with all Florida Department of Environmental Protection and SWFWMD Water Conservation requirements and shall make water conservation a critical priority in course design. The requirements include not only the layout of turf areas but in turf grass selection as well as plant palette, water conserving appliances, fixtures and system in all course buildings and facilities.
- b) Turf grass selection should have water conservation as a primary goal while considering factors such as local conditions, water quality, and soil characteristics. Recommendations for golf course turf grasses can be obtained from the UF/IFAS Cooperative Extension Service or through the U.S. Golf Association Green Section.
- c) A Soils Management Plan shall be submitted with Construction Plans that includes:
 - 1. Demonstration of the efficient use of on-site soils relative

to water use and conservation.

2. The use of soil amendments to create more water efficient soils.

3. Creation of applicable functional root zones for turf grass and landscape needs.

4. A proper functional root zone will be required in landscape beds built on disturbed soils and with permanent irrigation system. Use of 12-inch root zone or documentation supporting the design root zone will be required.

5. The general location of all excavation and stockpiles of fill or strippings.

4) *Best Management Practices.* If the new golf course is part of a residential development, then Best Management Practices documents or pamphlets, available from the University of Florida (UF)/Institute of Food and Agricultural Sciences (IFAS), Florida Department of Environmental Protection (FDEP), Southwest Florida Water Management District (SWFWMD), etc., shall be distributed to new homeowners. For the education of homeowners, the documents should provide common sense applications that will decrease irrigation water needs, reduce the risk of pollution and, in many cases, improve the health and appearance of the yard. Information may include Xeriscaping information and the University of Florida/IFAS Florida Yards and Neighborhoods Handbook or similar publications.

5) *Water Conservation Monitoring.* A summary of the monthly irrigation withdrawal and irrigation sources is required to be submitted to the county.

C. *Operation and Maintenance.*

1. Appropriate erosion control measures shall be established in conformance with the County grading requirements, state regulations, and BMPs prior to commencement of construction activities.

2. The possibility of contamination of groundwater during construction and operation shall be minimized.

3. The golf course shall use current BMPs to perpetually maintain all golf course areas as well as any on-site native vegetation areas associated with other private recreational facilities. Upland preserve areas shall be protected from encroachment during construction activities by erecting barricades, which are highly visible. Such barricades shall be a minimum of three feet in height and shall not be attached to vegetation. The developer and/or Owner shall be responsible for maintaining such barriers until construction activities have concluded.

4. Preservation trees as shown on approved site and development plans that are removed, damaged or die as a result of grading or irrigation shall require replacement per Section 54, Article XVIII, Tree Protection Code.

5. The Operational Maintenance entity shall be required to maintain the appearance of and function of any private drainage facilities to be constructed on the site, including retention ponds and drainage ditches, at its own expense in accordance with applicable federal, state or local regulations. At the time of recording a plat or prior to final construction approval, the Developer and/or Owner shall be required to record in the public records a Notice to Purchaser, approved by Sarasota County, putting purchasers on notice that the maintenance of drainage facilities is a private responsibility.

D. *Monitoring.*

1. Construction Monitoring. Reports detailing construction activities, permitting, compliance with Audubon International Signature Standards or equivalent standards and percent of project completed shall be submitted annually.
2. Natural Resource monitoring reports shall be submitted annually as part of the annual Resource Management Plan monitoring report.
3. Water Quality monitoring reports shall be submitted within forty-five (45) days of each sampling event and become part of the annual Resource Management Plan monitoring report.
4. Post-construction Water Quality reports shall be submitted sixty (60) days following the Engineer's site certification.
5. Water Conservation monitoring reports shall be submitted as part of the annual Resource Management Plan monitoring report.

(Ord. No. 2003-069, § 5, 10-22-2003)

GRAPHIC LINK:[Golf Driving Range--Figure 1](#)

GRAPHIC LINK:[Golf Driving Range--Figure 2](#)