002543

THE DESIGN MANUAL FOR SUBDIVISIONS AND SITE PLANS

Prepared by the Public Works Department
City of Gainesville, Florida
May 27, 1992
Revised May 26, 1998

TABLE OF CONTENTS

Part III - Site Plan

**** Section 1 STORMWATER MANAGEMENT ****

1.0 General

The design concepts of a drainage system shall be consistent with sound engineering principles and practices and shall be consistent with applicable rules, regulations and policies of the Water Management District and the Florida Department of Environmental Regulation. In all instances, the drainage design calculations shall be submitted along with the engineering plans. These drainage calculations shall consider all relevant information that would affect the stormwater management system including, but not limited to, the following: drainage basin characteristics, system hydraulics, operating conditions and other external influences upstream and downstream from the stormwater system that may impact or be impacted by the proposed system.

The design and operation of retention and detention storage facilities shall be in accordance with the criteria set forth in the Florida Administrative Code and Rules of the Water Management District. Permits shall be received from the appropriate jurisdiction prior to the development of the proposed project, although conditional approval of the design may be granted subject to evidence of the permits having received preliminary approval or has been received by agency. If the permit application is rejected by the governing agency, then the conditional approval granted by the City shall be rescinded. Conditional design approval shall not authorize construction of the stormwater facility to commence.

2.0 Design Criteria

2.1 Design Storm

The stormwater system shall be designed so that the post developed peak flow rate of stormwater off the site does not exceed the predeveloped peak flow rate, based on the 100 year critical duration storm event. Within the Hogtown Creek basin, the post developed volume of runoff leaving the site cannot exceed the predeveloped volume released within the first 72 hours of the storm event. Retention basins (closed basins) must be designed to retain the entire 100 year critical duration event.

2.2 Redevelopment of Existing Site Plans

If the proposed redevelopment is disturbing 4000 or more square feet of existing impervious surface then, the first 1/2" of stormwater runoff from the redeveloped area must be treated.

CHAPTER 40C-42

ENVIRONMENTAL RESOURCE PERMITS:
REGULATION OF STORMWATER MANAGEMENT SYSTEMS

40C-42.011 Scope.

(1) This chapter governs stormwater management systems which are designed and constructed or implemented to control discharges necessitated by rainfall events. These systems may incorporate methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, overdrainage, environmental degradation and pollution, or otherwise affect the quality and quantity of discharges. Standard general and individual environmental resource stormwater permits are required under this chapter for construction, operation, maintenance, alteration, removal, or abandonment of systems that are not permitted under provisions of chapters 40C-4, 40C-40, or 40C-400, F.A.C. Permits issued under this chapter must be consistent with the objectives of the District and not cause harm to the water resource.

(a) Local governments may have concurrent jurisdiction with the District over a stormwater system. The permittee is not relieved by this rule of the responsibility to comply with any other applicable rules or ordinances which may govern such system.

(b) The permittee provides reasonable assurance that there will not be a violation of state water quality standards as set forth in chapter 62-302 and 62-550, F.A.C.;

(c) The permittee provides reasonable assurance that adjacent or nearby properties not owned or controlled by the applicant will not be adversely affected by drainage or flooding; and

(d) The permittee must apply to the District for and receive written authorization from the District prior to abandonment of the system.

Specific Authority 373.044, 373.113, 373.171, FS. Law Implemented 373.413, 373.416 FS. History--New 9-15-91. Amended 4-11-94, 11-22-94.

40C-42.0225 Exemptions From Permitting for Stormwater Management Systems. The following types of stormwater management systems are exempt from the notice and permit requirements of this chapter:

(1) Systems designed to accommodate only one single family dwelling unit, duplex, triplex, or quadruplex, provided the single unit, duplex, triplex or quadruplex is not part of a larger common plan of development or sale.

(2) Systems which are designed to serve single family residential projects, including duplexes, triplexes and quadruplexes, of less than 10 acres total land area and which have less than 2 acres impervious surface and if the systems:

(a) Comply with all regulations or ordinances applicable to stormwater management adopted by a city or county;

(b) Are not part of a larger common plan of development or sale; and

(c) Discharge into a stormwater management system exempted or permitted by the District under this chapter which has sufficient capacity and treatment capability as specified in this chapter and is owned, maintained, or operated by a city, county, special district with drainage responsibility, or water management district; however, this exemption does not authorize discharge to a system without the system owner's prior written consent.

(3) Systems that qualify for a noticed general permit pursuant to chapter 40C-400, F.A.C. and which comply with the requirements of such noticed general permit.

Specific Authority 373.044, 373.113, 373.171, 373.413 FS. Law Implemented 373.413, 373.416, 403.812 FS. History--New 9-25-91. Amended 3-21-93, 10-3-95.

40C-42.023 Requirements for Issuance.

(1) To receive a general or individual permit under this chapter the applicant must provide reasonable assurance based on plans, test results and other information, that the stormwater management system:

(a) will not result in discharges from the system to surface and ground water of the state that cause or contribute to violations of state water quality standards as set forth in chapters 62-302, 62-4, 62-302 and 62-550, F.A.C., including any antidegradation provisions of sections 62-4.242(1)(a) and (b), 62-4.242(2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in sections 62-4.242(2) and (3), F.A.C.;

(b) will not adversely affect drainage and flood protection on adjacent or nearby properties not owned or controlled by the applicant;

(c) will be capable of being effectively operated and maintained pursuant to the requirements of this chapter; and

(d) meets any applicable basin criteria contained in chapter 40C-41, F.A.C.

(2)(a) A showing by the applicant that the stormwater management system complies with the applicable criteria in sections 40C-42.024, 40C-42.025, 40C-42.026, and 40C-42.0265, F.A.C., shall create a presumption that the applicant has provided reasonable assurance that the proposed activity meets the requirements in paragraphs (a), above.

(b) A showing by the applicant that the stormwater management system complies with the criteria of subsections 40C-42.025(8) and (9), F.A.C., shall create a presumption that the applicant has provided reasonable assurance that the proposed activity meets the requirements in paragraph (b), above.

(c) A showing by the applicant that the stormwater management system complies with the applicable criteria of sections 40C-42.027, 40C-42.028, and 40C-42.029, F.A.C., shall create a presumption that the applicant has provided reasonable assurance that the proposed activity meets the requirements in paragraph (c), above.

Specific Authority 373.044, 373.113, 373.171, 373.418 FS. Law Implemented 373.413, 373.416 FS. History--New 9-25-91. Amended 3-21-93, 10-3-95.

40C-42.024 Standard General and Individual Permits.

(1) Any person proposing to construct, alter, operate, maintain, remove, or abandon a stormwater management system, which requires a permit pursuant to sections 40C-42.022, F.A.C., except those exempted pursuant to section 40C-42.0225, F.A.C., or noted in section 40C-42.061, F.A.C, shall apply to the District for a standard general or individual environmental resource stormwater permit, prior to the commencement of construction, alteration, removal, operation, maintenance, or abandonment of the stormwater management system. No construction, alteration, removal, operation, maintenance, or abandonment of a stormwater management system shall be undertaken without a valid standard general or individual environmental resource stormwater permit as required pursuant to this section.

(2) The following types of stormwater management systems qualify for a standard general environmental resource stormwater permit and shall be processed according to the administrative procedures set forth in chapter 40C-40, F.A.C.:

(a) Systems which discharge into a stormwater management system which is permitted pursuant to paragraph 40C-42.024(2)(b), (c), or (d), F.A.C., or subsection 40C-42.024(3), F.A.C., or which was previously approved pursuant to a noticed exemption under section 62-25.030 where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt system are not exceeded by the discharge; however, this does not authorize discharge to the permitted or exempt system without the system owner's prior written consent.

treatment volume and off-line treatment) pursuant to section 40C-42.026, F.A.C., or an alternative demonstrated by the applicant to be equivalent.

(c) Systems which do not meet the applicable criteria of sections 40C-42.025, 40C-42.026, or 40C-42.0265, F.A.C. An affirmative showing by the applicant based on plans, test results, calculations, or other information that an alternative design is appropriate for the specific site conditions will create a presumption in favor of satisfying the applicable standards in subsection 40C-42.023(1), F.A.C.

(4) In otherwise determining whether reasonable assurance has been provided for paragraphs (3)(b) and (c), above, the District shall, where appropriate, consider:

(a) Whether best management practices are proposed, such as those described in "Stormwater Management Manual (October, 1981)," "The Florida Development Manual: A Guide to Sound Land and Water Management (June, 1988)," or best management practices described in manuals adopted by the Environmental Regulation Commission pursuant to section 62-25.050, F.A.C., or other appropriate best management practices (the manuals listed above by name are adopted and made a part of this rule by reference. Copies of these documents may be inspected at all District offices);

(b) The public interest served by the system;

(c) The probable efficacy and costs of alternative controls; and

(d) Whether reasonable provisions have been made for the operation and maintenance of the proposed system.

(5) The standard general or individual environmental resource stormwater permit which is granted will include a specified period for which the permit will be valid. Such period, unless the permit is modified or revoked, is generally:

(a) five years for permits to construct, alter, or remove a system; and

(b) permanent for permits to operate, maintain, or abandon a system.

(6) Procedures governing transfers, permit revocation, permit modifications, and extensions are found in chapters 40C-1 and 40C-4, F.A.C., and apply to permits obtained pursuant to this chapter. Procedures governing converting construction to operation permits and transferring the system to the operation and maintenance entity are found in section 40C-42.027, F.A.C., below. *Specific Authority 373.044, 373.113, 373.118, 373.171, 373.418 FS. Law Implemented 373.413, 373.416, 403.813 FS. History--New 9-25-91. Amended 3-21-93, 4-11-94, 10-3-95.*

40C-42.025 Design and Performance Criteria for Stormwater Management Systems. The following criteria shall apply to stormwater management systems unless otherwise noted:

(1) Erosion and sediment control best management practices shall be used as necessary during construction to retain sediment on-site. These management practices shall be designed and certified by an appropriate registered professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system. The registered professional shall furnish the contractor with information pertaining to the construction, operation and maintenance of the erosion and sediment control practice. Sediment accumulations in the system from construction activities shall be removed to prevent loss of storage volume.

(2) Stormwater management systems which either receive stormwater from areas with greater than 50 percent impervious surface or are a potential source of oil and grease contamination in concentrations that exceed applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism suitable for preventing oil and grease from leaving the stormwater management system in concentrations that would cause or contribute to violations of applicable water quality standards in the receiving waters. For purposes of this subsection, the calculation of the amount of impervious surface shall not include water bodies.

(3) Unless applicable local regulations are more restrictive, for purposes of public safety the following requirements apply:

(a) Normally dry basins designed to impound more than two feet of water or permanently wet basins shall be fenced or otherwise restricted from public access, or shall contain side slopes that are no steeper than 4:1 (horizontal:vertical) out to depth of two feet below the control elevation; and,

(b) Control devices that are designed to contain more than a two foot depth of water within the structure under the design storm and have openings greater than one foot minimum dimension shall be restricted from public access.

(4) All stormwater basin side slopes shall be stabilized by either vegetation or other materials to minimize erosion and sedimentation of the basins.

(5) Stormwater management systems must be designed to accommodate maintenance equipment access and to facilitate regular operational maintenance (such as underdrain replacement, unclogging filters, sediment removal, mowing and vegetation control). Operational maintenance and operation easements shall be provided when necessary to facilitate equipment access.

(6) The applicant must obtain sufficient legal authorization as appropriate prior to permit issuance for stormwater management systems which propose to utilize offsite areas to satisfy the requirements in subsection 40C-42.023(1), F.A.C.

(7) Stormwater management systems (except retention and exfiltration trench systems) shall provide gravity or pumped discharge that effectively operates under one of the following tailwater conditions:

(a) Maximum stage in the receiving water resulting from the mean annual 24-hour storm. This storm depth is described in "Rainfall Analysis for Northeast Florida;" St. Johns River Water Management District Technical Publication No. SJ 88-3 (May, 1988). Lower stages may be utilized if the applicant demonstrates that flow from the project will reach the receiving water prior to the time of maximum stage in the receiving water;

(b) Mean annual high tide for tidal areas;

(c) Mean annual seasonal high water elevation. This elevation may be determined by water lines on vegetation or structures, historical data, adventitious roots or other hydrological or biological indicators, design of man-made systems, or estimated by a registered professional using standard hydrological methods based on the site and receiving water characteristics; or

(d) As an alternative, the applicant may propose any applicable criterion established by a local government, state agency, or stormwater utility with jurisdiction over the project.

(8) Stormwater management systems which require a permit pursuant to subsection 40C-42.022(1), F.A.C., and which serve new construction area with greater than 50 percent impervious surface (excluding water bodies) must demonstrate that the post-development peak rate of discharge does not exceed the pre-development peak rate of discharge for one of the following:

Minutes
Development Review Board
Site Plan Review Meeting

City Hall
First Floor Auditorium
200 East University Avenue

February 8, 2001
Public Hearing
Thursday, 6:30 PM

Members Present
Terrence Bailey
Edward Borden
Abraham Layon
Stephen Boyes
Pat Polopolus (Chair)
Richard Fobair (Student Adjunct)

Members Absent
Robert Cameron

Planning Staff
Lawrence Calderon
Carolyn Morgan
Margie Roland

I. ROLL CALL

II. APPROVAL OF AGENDA (NOTE: Order of business subject to change)

Motion By: Mr. Borden	Seconded By: Mr. Bailey
Moved To: Approve the agenda as presented.	Upon Vote: Motion Carried 5-0 Yeas: Bailey, Borden, Layon, Boyes, Polopolus

III. REQUEST TO ADDRESS THE BOARD

There were no requests to address the board.

IV. APPROVAL OF MINUTES

Motion By: Mr. Borden	Seconded By: Mr. Bailey
Moved To: Approve the minutes of January 11, 2001 as presented.	Upon Vote: Motion Carried 5-0 Yeas: Bailey, Borden, Layon, Boyes, Polopolus

V. DEVELOPMENT PLANS

A. OLD BUSINESS

1. Petition 142SUB-00 DB — Kelley Engineering, Inc., agent for Luther E. Blake, Jr. and Irene Blake Caudle. Design plat review for 138 lots on 30.021 acres MOL. Walnut Creek. Zoned: PD (planned development district). Located in the 2500 block of Northwest 39th Avenue, south side.

Ms. Carolyn Morgan was recognized. Ms. Morgan indicated that the petition involved a design plat review and was subject to the zoning ordinance for the Walnut Creek Planned Development adopted on October 9, 2000. She indicated that the petition was submitted to staff in September, 2000, continued in October, 2000 and withdrawn from the agenda in November, 2000. She presented a drawing of the adopted PD layout plan for the development and pointed out some of the features of the PD ordinance.

She explained that the preliminary plan for design plat would go forward to construction phase drawings with Gainesville Regional Utilities (GRU), the Public Works Department, the Alachua County Environmental Protection Department (ACEPD) and City Planning. She explained that the design plat would go to the City Commission for a hearing and approval. She indicated that the final plat would go back to the City Commission for adoption.

Mr. Jerome Kelly, agent for the petitioner, was recognized. Mr. Kelly presented a drawing of the proposed design plat and described it and the surrounding area in detail. He noted that there were many heritage oak trees on the site and he had worked with the City Arborist to preserve as many trees as possible. He discussed the paving, drainage plans, traffic access and street connections to NW 39th Avenue, NW 31st Avenue, and NW 27th Street. He offered to answer any questions from the board.

Mr. Borden asked if the proposed fencing would only be along areas where an alley abutted other properties.

Mr. Kelly explained that the fencing would be along the property line where it abutted single-family residences, unless a fence already existed in those areas. He noted that there would be no fences where there were retention areas. He explained that the retention areas would act as a buffer.

Mr. Layon, referring to a letter from the ACEPD, asked if there were any hazardous materials on the site and how they would be handled. He also asked if Mr. Kelly had spoken to the neighborhood organizations in the area.

Mr. Kelly explained that there had been no meetings with the neighborhood organizations, but a notice had been sent out requesting their preferences on sidewalks and other concurrency issues. Regarding hazardous materials, he indicated that he knew of none except that there was a used LP gas tank on the site which would be removed and properly disposed of. He pointed out that the survey referred to the tank as an underground tank, but it was actually an LP gas tank.

Mr. Layon asked if Mr. Kelly planned on conversing with the neighborhood organizations about the development.

Mr. Kelly indicated that, if there was an opportunity to do so, he would. He explained that, as the plan progressed, there might be meetings.

Mr. Boyes asked about the location of the water well that was of concern to ACEPD. He also asked about the previous use of the well.

Mr. Kelly pointed out the location on the drawing. He explained that he was unsure of the use since the well had been in place for many years. He indicated that the petitioner proposed to use the well for irrigation, if possible.

Mr. Boyes noted that the plan proposed dry retention basins and the elevations of those basins had a depth of about six feet.

Mr. Kelly indicated that the high end of one basin would be six feet, but the lower end would be four feet deep. He explained that the soil in the area was very good. He noted that borings and permeability tests had been performed.

Mr. Boyes asked when the water table was measured.

Mr. Kelly indicated that it was done last year. He pointed out that the seasonal high water table was also noted on the plans.

Mr. Boyes stated that his concern was the location of the basins adjacent to other properties. He asked what impact the basins would have on the water table beneath adjacent houses. He indicated that it seemed possible that the proposed basins would place a significant volume of water in the ground and elevate the water table in the immediate vicinity of the closest houses.

Mr. Kelly explained that the issue would require more investigation by the engineers. He suggested that there wouldn't be any impact because of the nature of the sand.

Mr. Boyes pointed out that the proposed development was very large and the basins were small.

Mr. Kelly indicated that the basins were designed for the 100-year event according to City regulations and the St. John's River Water Management District's treatment volume requirements.

Mr. Boyes asked if dry retention basins were not possible, could a wet system be used.

Mr. Kelly expressed doubts about a wet detention system. He explained that the normal pool would not be high enough to allow a wet system.

Mr. Boyes suggested that the pools could be lined.

Mr. Kelly indicated that he believed lining the pools would have greater impact on the groundwater.

Mr. Boyes disagreed. He stated that, if a pool were lined, it would not impact the groundwater.

Mr. Kelly pointed out that it would prevent the normal discharge into the groundwater.

Mr. Boyes stated that he had a concern about the impact of a rising water table on lots 66 through 76 in the adjacent Hidden Pines Subdivision. He indicated that the matter needed to be taken into consideration in the stormwater permitting process.

Chair Polopolus asked how the impact to those lots would be measured.

Mr. Boyes explained that the petitioner would have provide some type of modeling to project impact. He explained that when the water table was measured was a concern. He explained that, if it were measured during a dry time, it could rise during a normal wet season. He suggested that the basins were too close to adjacent houses and there could be an impact to that property.

Mr. Bailey asked if Mr. Kelly had contacted the Water Management District regarding permitting or other issues that had been brought to the board.

Mr. Kelly indicated that contact with the Water Management District would come later in the development process, when the construction plans were completed. He explained that the site did have good soil. He reiterated that the plans would have to satisfy the City's Public Works Department and the Water Management District.

Mr. Boyes pointed out that the plan proposed moving water to someone else's property. He suggested that, if the basins were in the middle of the property, there wouldn't be a potential impact to an adjacent development. He explained that, according to the plan, the basins were on the borderline of the water level indicated on the project. He noted that the water table occurred about six feet below the ground surface; the basins approached six feet below ground surface; and were relatively small compared to the total size of the property. He explained that, since a great deal of water would enter the basins, because of the percolation rate of the sand, the water table would rise up in close proximity to the basins.

Mr. Kelly pointed out that the six-foot depth was only on one end of one of the basins. He explained that the normal average depth was less than five feet.

Mr. Boyes noted that Mr. Kelly was indicating a water level six feet below the ground surface during a drought.

Mr. Kelly stated that he would confer with WMD, the engineers of record on the project, on the issue.

Chair Polopolus asked how the proposed wood fencing would be maintained after it was installed.

Mr. Kelly indicated that the homeowners association would be responsible for the fencing.

Mr. Bailey noted that, while Mr. Kelly had stated that there was no clay on the site, the borings did show clay at the seasonal high water table.

Mr. Kelly explained that there was no clay within two to three feet.

Mr. Bailey pointed out that, when the basin was excavated, it could possibly sit directly on the clay layer and, therefore, would not percolate.

Mr. Boyes explained that he worked a project across the street where there was a problem with the stormwater basins and clay. He noted that those basins would not percolate correctly at a development relatively near the subject site. He stated that there would be a water table problem.

Ms. Morgan indicated that the petition involved a preliminary plan, a design plat. She explained that the petitioner would have to provide engineering drawings of the stormwater system at the level discussed by Mr. Boyes and apply for permits from the Water Management District. She pointed out that, if it was determined that the stormwater system would not function properly in the proposed configuration, the plat

would be redesigned and returned to the board for approval. She explained that the final plat had to be similar to the design plat when it was adopted. Ms. Morgan indicated that, except for the review of minor traffic circulation problems, the Public Works Department had approved the design plat as submitted. She noted that the design plat would be required to meet the 100-year critical duration storm event and require a St. John's River Water Management District stormwater permit. She indicated that the stormwater treatment volume must be recovered in 72 hours. Ms. Morgan reviewed staff comments from other departments. She indicated that Ordinance 991267 was the governing ordinance for the PD. She explained that the ordinance allowed 138 single-family dwelling units, specified lot layout and size and location of stormwater basins. She stated that the plan was consistent with the original adopted Planned Development. Ms. Morgan indicated that planning staff had an issue with the configuration of lots 108 and 109 which contained three grand live oak trees with a very lateral spreads. She pointed out that the PD brought the common area up to a point, but the trees, even on the lot line, spread across the two lots. She stated that it was planning staff's recommendation that lots 108 and 109 become a part of the common area. She indicated that the spread of the tree limbs was so close to the ground that placing a house on the lot would not protect the trees. She noted that protection of the trees required both lots. She explained that staff did try to work the matter out with the petitioners. Ms. Morgan noted that staff was concerned about the rounded corners of some of the lots. She indicated that the site was fully wooded and staff would be looking at the preservation of more of those trees during the construction phase. She indicated that the PD ordinance did not provide for a phased plan as proposed by the petitioner, but the petitioner could request an extension from the City Commission when the plan was presented. Ms. Morgan offered to answer any questions from the board.

Mr. Layon asked if there was an underground tank on the site.

Ms. Morgan indicated that there was an existing tank on the site and the petitioner has indicated that it was an LP gas tank. She explained that the petitioner would have to remove the tank according to Alachua County requirements. She noted that it was shown on the survey as an underground tank.

Chair Polopolus explained that the board understood from Mr. Kelly's testimony that it was shown as an underground tank on the plan, but was actually an above ground tank.

Mr. Kelly stated that the tank was underground.

Mr. Boyes indicated that he had a concern about the water table impact on the adjacent Hidden Pines Subdivision. He asked how could the concern would be addressed.

Ms. Morgan explained that the concern would be addressed in the minutes conveyed to the City Commission. She noted, however, that the concern would also be examined in detail in the construction phase of the project. She pointed out that, the only thing required in the present plans was soil borings, and the actual engineering work was done in the construction phase of the project. She reiterated that, if the basins shown were not adequate and the design plat changed significantly, it would come back before the board.

Mr. Boyes indicated that his concern was that, while the stormwater could go in the basins as designed, the water table on the adjacent properties might rise up to near land surface.

Mrs. Morgan indicated that the Public Works Department and Water Management District would be reviewing the design of the stormwater system.

Mr. Kelly pointed out that he had to demonstrate to Public Works and the Water Management District that the basins would dry up within 72 hours.

Chair Polopolus asked if it was staff's recommendation that lots 108 and 109 be removed to save heritage trees on the lot.

Ms. Morgan stated that staff had worked and would continue to work with staff on the matter. She noted that, while the trees were on lot lines, they were very lateral and low to the ground. She pointed out that the drip line of the trees was the width of both of the lots. She reiterated that it was staff's recommendation that the lot lines be amended and the trees become part of the common area.

Mr. Bailey suggested that the alleys shown on the plans looked like major traffic arterials. He asked how the configuration would work.

Ms. Morgan discussed the alleyways and how turn-a-rounds would take place. She noted that there was a hammerhead turn which would allow for fire trucks.

Mr. Bailey asked if the alleys would be posted with signs to prevent general traffic movement.

Ms. Morgan explained that the alleys were private property and the petitioner could provide signs that indicated them as such. She indicated that staff could make the condition in the construction phase of the plan.

Chair Polopolus noted that Ms. Morgan stated that it would continue to be staff's recommendation that lots 108 and 109 become common area to save the heritage oaks. She asked if the recommendation was written in the staff report.

Ms. Morgan explained that the recommendation was in an earlier report, but not in the current one.

Chair Polopolus asked, if the board voted to recommended that the lots become common area, would it appear in the report.

Ms. Morgan indicated the board would have to act upon the recommendation as verbally stated by staff in the record of the present meeting.

Mr. Layon asked why staff would make a recommendation and not include it in the report.

Ms. Morgan explained that staff had worked with the petitioners on two different ways of amending the lot lines to place a house on a lot without damaging the trees. She noted that the petitioner did make lots larger, which allowed the houses to move away from the trees, but staff still recommended that the area become common area.

Mr. Borden noted that one recommendation involved an oak in one of the drainage basins. He asked, if soil were left around that tree to save it, would that space have to be recouped somewhere else.

Ms. Morgan indicated that it would if the volume was critical to drainage. She reiterated that the basins were part of a preliminary plan and the calculations were in the construction plan phase of the project.

Mr. Boyes asked if the petitioner could accept a condition on the petition that the stormwater plan may not cause a water table rise at anytime within 18 inches of land surface on adjacent properties.

Mr. Kelly pointed out that the plan had to meet City and Water Management District requirements for a 100-year critical event. He stated that those requirements should cover the board's concern.

Mr. Boyes indicated that he did not believe a water table rise on adjacent property was in those regulations.

Mr. Kelly pointed out that there was a requirement that the water not mound. He indicated that no one present could state that the water would not rise to 18 inches below the ground at the property line.

Mr. Boyes stated that he referred to adjacent properties.

Mr. Kelly stated that there was no way to address the issue at the present stage of the development but they would be addressed in the permitting phase.

Mr. Boyes explained that, by requesting that the board place the condition on the approval, would indicate that the issue would be reviewed.

Mr. Kelly indicated that he did not believe the board could tie the petitioner to conditions beyond the normal permitting process.

Mr. Boyes explained that the issue was one of nuisance. He indicated that he would like to see a recommendation on the approval of the petition that the matter was reviewed.

Mr. Kelly indicated that he could accept the recommendation. Regarding lots 108 and 109, he requested the opportunity to continue to discuss the situation with the Arborist and Ms. Morgan.

Chair Polopolus opened the floor to public comment.

Mr. Fredrick Peterkin was recognized. Mr. Peterkin requested that the PUD be delayed or some condition attached to ensure that there would be no damage to structures on lots next to the retention ponds.

Mr. Richard Murphy, resident of Hidden Pines Subdivision, was recognized. Mr. Murphy indicated that in previous rainy seasons there was some sheet flow of water into NW 27th Street.

Mr. John Dame, resident of Hidden Pines Subdivision, was recognized. Mr. Dame indicated that his home was on one of the lots adjacent to one of the proposed retention basins. He cited a concern about a rise in the water table near his home. He discussed a meeting held with the Public Works Department the previous evening. Mr. Dame read a statement regarding the concerns about an increase in traffic on Glen Springs Road. He asked if the proposed connection between the Walnut Creek Subdivision and the Hidden Pines Subdivision could be stopped.

Chair Polopolus explained that the connection was written in the ordinance and the board had no control over the matter.

Ms. Mary Williams was recognized. Ms. Williams noted that the original September 28, 2000, PUD report mentioned brick and stucco exteriors for the homes in Walnut Creek. She pointed out that the report before the board mentioned brick, stone, wood, stucco, textured concrete, fiber cement or cement approbated siding. She asked if the board was accepting the new construction elements.

Ms. Morgan explained that the other construction materials were placed in the ordinance at the time of adoption by the City Commission.

There was discussion of traditional neighborhood design.

Chair Polopolus closed the floor to public comment.

Mr. Layon indicated that he had asked if the neighborhood associations had been contacted on the development and was told that they had not. He indicated that he would be concerned if the board did not add conditions to the petition regarding the retention ponds and discussions with the neighbors around the site.

Chair Polopolus noted that the board was dealing with an existing PD ordinance.

Mr. Layon indicated that Mr. Calderon had spoken to him with regards to development that would enhance neighborhoods.

Mr. Calderon asked if Mr. Layon was speaking to the health, safety welfare of the community issue.

Mr. Layon indicated that he was speaking to that issue. He suggested that, if a development caused a problem for neighbors who had been in the area for a number of years, he did not see how it could enhance the area. He requested that it be taken into consideration.

Mr. Calderon pointed out that the present meeting was not the first meeting on the petition. He pointed out that the neighbors had been notified of those meetings.

Mr. Layon noted that the petitioner's agent had stated that the neighborhood associations had not been contacted and the neighbors in the audience had stated that they had not been notified. He requested that staff prove that the neighbors had been consulted about the development.

Ms. Morgan explained that the City's notification process required public hearings before the appropriate boards and the City Commission for different stages of development. She pointed out that the Code did not require meetings with neighborhood associations. She noted that, if the petitioner wished to schedule meetings they may, or may not. She explained that the Walnut Creek development involved a Planned Development which went before the City Plan Board then on to the City Commission. She noted that there had been two hearings before the City Commission and the ordinance was adopted in October, 2000. She indicated that the present hearing before the Development Review Board was a scheduled, noticed hearing on the design plat. Ms. Morgan pointed out that the petition would also have another noticed, public hearing before the City Commission for the design plat, and would then return to the City Commission for final plat approval. She reiterated that there were no current requirements in the City Code for any other development process meetings with neighborhoods, therefore, no conditions could be place on petitions to require those meetings. Ms. Morgan explained that the City Commission had shown some interest in requiring developers to meet with the neighbors and staff was working on amending the Code to add language that could potentially require such meetings. She indicated that the Development Review Board and the City Plan Board were citizen boards and their meetings were public meetings held for any project. She noted that concept plans were occasionally brought before the boards but they were at the option of the developer.

Mr. Layon asked how health, welfare and safety were addressed.

Ms. Morgan indicated that health, welfare and safety were addressed in the implementation of the Land Development Code. She explained that the development had to meet the Code requirements and those requirements were designed to meet the health, welfare and safety issues. She noted that stormwater management, hazardous materials, endangered species and other concerns were included in the Code requirements. She explained that the petition involved a design plat to determine if the petitioner's had met the Code requirements.

Mr. Layon indicated that he did not believe it was to the benefit of the developers or the neighborhoods to ignore persons who had lived in that area and were concerned.

Mr. Calderon explained that staff presented a report and made recommendations to the board. He indicated the Board's decision had to be based on the requirements of Code.

Chair Polopolus agreed that the process worked better when the developers made some effort to address neighborhood concerns. She suggested that persons should look to the betterment of the community as a whole. She agreed that the board could request and recommend that meetings between developers and neighbors take place, but could not require those meetings.

Mr. George Dekle was recognized. Mr. Dekle indicated that the previous developer did meet with the neighborhood at the Girl's Club in April of 2000.

Motion By: Mr. Boyes	Seconded By: Mr. Borden
Moved To: Approve Petition 142SUB-00 DB, with staff conditions and recommendations, including the recommendation that: 1) the final design plat require the stormwater plan not cause a water table rise at any time within 18 inches of land surface on adjacent properties. 2) That lots 108 and 109 be dropped to save the large oak trees in those locations.	Upon Vote: Motion Carried 5-0 Yeas: Bailey, Borden, Layon, Boyes, Polopolus This recommendation has essentially been dropped

Mr. Calderon indicated that the plan would go to the City Commission for design plat review after construction drawings had been provided.

Ms. Morgan indicated that the plan would go to the City Commission in March and notice would be sent to persons living within 400 feet of the site.

B. NEW BUSINESS No items.

VI. BOARD MEMBER COMMENTS

VII. ADJOURNMENT

There being no further business, the adjourned at 8:15 PM.

Secretary, Development Review Board — Date: 5/10/01

Clerk, Development Review Board — Date: 5/17/01

These minutes are not a verbatim account of this meeting. Tape recordings from which the minutes were prepared are available from the Community Development Department of the City of Gainesville.

GeoSolutions Inc.

602 South Main Street, Gainesville, Florida 32601-6718
(352) 378-7026

March 12, 2002

Glen Springs Preservation Association, Inc.
Sharon Dame, President
3321 NW 26th Terrace,
Gainesville, Florida 32605

RE: Proposed Walnut Creek Subdivision Stormwater Basin Design

The hydrogeologic setting provided in the Walnut Creek Subdivision permit application for the proposed stormwater basins is inaccurate. The water table occurs during non-drought conditions above the elevation/depth indicated in the application's (six feet below land surface) supporting documentation. The investigation performed by Geoengineering & Testing, Inc. and used for the proposed development was performed during a period of extreme drought when the water table was depressed. The investigation was conducted in April 2000 and never detected a water table beneath the site. The proposed stormwater basin designs used for the Walnut Creek Subdivision development plan are too deep and will intersect the water table during the wet season in times of normal rainfall (52 inches/yr).

The Geoengineering & Testing, Inc. report was used by Kelley Engineering for design of the proposed Walnut Creek Subdivision stormwater system. The report dated April 4, 2000, titled Geotechnical Engineering Services Report for: Tract of Land located off NW 39th Avenue Gainesville, Alachua County, Florida indicates the following:

1) Section 3.2 (page 2 of 5) of the report states the seasonal high water table to be 6.0 ft and 7.0 ft below existing ground surface; and,

2) Section 4.0 - Table 1 (page 3 of 5) indicates laboratory permeability test data for the clayey sands underlying the site have a horizontal hydraulic conductivity of 15 feet per day or greater.

The values of hydraulic conductivity reported for the clayey sands (15 ft/day) are two orders of magnitude above text book values for the expected range ($\leq$ 0.4 ft/day) of clayey sands (Fetter, C.W., 1988). In 1988 GeoSolutions Inc. investigated a property with failed dry design stormwater basins along the north side of NW 39th Ave., just east of the proposed development site. The investigation included insitu field testing to measure the hydraulic conductivity of the surficial aquifer system. Two monitoring wells were slug tested to measure the hydraulic conductivity (K) of the sands that compose the permeable section of the surficial aquifer and the clayey sands which compose an aquitard immediately underlying the permeable sands. The fine sands overlying the clayey sands indicate hydraulic conductivity values of approximately 8.5 ft/day. The clayey sands underlying the

fine sands indicate hydraulic conductivity values of approximately 0.4 ft/day. Slug testing is a more accurate method of measuring hydraulic conductivity of the subsurface than laboratory testing of disturbed cores extracted from the subsurface.

In December 2001, GeoSolutions hand augered two borings (SB-1 and SB-2) immediately west of the proposed Walnut Creek Subdivision development. The borings were placed to confirm the hydrogeologic setting of the surficial aquifer system. The borings encountered a similar geologic profile as found in 1988 north and east of the proposed development site. Attached are the geologic logs from borings SB-1 and SB-2 which were augered by GeoSolutions on December 15, 2001. The logs indicate the location of the borings and a hydrogeologist's description of the materials encountered.

The hydrogeologic setting of the area indicates the proposed stormwater impoundments will intersect the water table and contain standing water during the wet season in times of normal rainfall (52 inches/yr). The natural high water table is higher than that indicated in the permit application. The hydrogeologic character of the surficial aquifer promotes a high water table within a few feet of land surface during normal wet periods. The clayey sands which underlie the thin, five-to-six foot-thick well sorted, permeable sands, exhibit a high specific retention and are much less conductive than the overlying sands. During periods of normal rainfall the water table naturally occurs above the clayey sands because the clayey sands exhibit a lower hydraulic conductivity and a much higher specific retention.

GeoSolutions is concerned the proposed location (immediately adjacent) and design of the stormwater system will impact the water table beneath the in ground swimming pool at the Dame's property at 3321 NW 26th Terrace. If the water level in the pool were to fall below the water table the integrity of the pool might be impacted.

Should you have any other questions or require additional information, please call.

Sincerely,

Stephen R. Boyes, P.G.
Florida License No: 184
Pricipal Hydrogeologist
Date: 3/12/02

GeoSolutions Inc.

602 South Main Street, Gainesville, Florida 32601-6718
(352) 378-7026

Boring Log **SB-1**
Date **12/15/01**
Location 3321 NW 26th Terrace, Gainesville FL 32605 - John Dame
2 ft east of power pole NE corner of property

Depth Feet BLS	Description
1	Tan, very fine to coarse (vfU to cU), rounded to subrounded, moderately sorted, quartz SAND
2	Tan to white, fine to coarse (fL to cL), rounded to subrounded, moderately sorted, quartz SAND
3	White (clear grained), fine to coarse (fL to cU - mostly cL to mU), rounded to subrounded, well sorted, quartz SAND
4	White (clear grained), fine to coarse (fL to cU - mostly cL to mU), rounded to subrounded, well sorted, quartz SAND
5	White (clear grained), fine to coarse (fL to cU - mostly cL to mU), rounded to subrounded, well sorted, quartz SAND
6	Yellow to brown and tan mottled, CLAYEY, very fine to coarse vfL to cL), subrounded, very poorly sorted SAND
7	Yellow to brown and tan mottled, CLAYEY, very fine to coarse vfL to cL), subrounded, very poorly sorted SAND
7.5	same - eob

Boring Log **SB-2**
Date **12/15/01**
Location 3511 NW 26th Terrace, Gainesville FL 32605 - Amy Sue Beckner
2 ft southeast of power pole NE corner of property

Depth Feet BLS	Description
1	Tan, fine to coarse, rounded to subrounded, moderately sorted, quartz SAND
2	Tan to white, fine to coarse, rounded to subrounded, moderately sorted, quartz SAND
3	White (clear grained), fine to coarse (fL to cU - mostly cL to mU), rounded to subrounded, well sorted, quartz SAND
5	White (clear grained), fine to coarse (fL to cU - mostly cL to mU), rounded to subrounded, well sorted, quartz SAND
5.8	Yellow to brown and tan mottled, CLAYEY, very fine to coarse vfL to cL), subrounded, very poorly sorted SAND
7	same - eob

Hand auger borings and logs by
Stephen R. Boyes, P.G.
Florida License No: 184

SRB
3/12/02

STATE OF FLORIDA
DIVISION OF ADMINISTRATIVE HEARINGS

DOAH CASE NO.: 01-3798

GLEN SPRINGS PRESERVATION ASSOCIATION, INC., and ELIZABETH T. FURLOW,
Petitioners,
vs.
LUTHER E. BLAKE, JR., IRENE BLAKE CAUDLE, and ST. JOHNS RIVER WATER MANAGEMENT DISTRICT,
Respondents.

Santa Fe Community College Board Room
Gainesville, FL 32601

Mr. Rule's &
(excerpt of Dr. Fangs testimony + rules)

VOLUME I

TRANSCRIPT OF PROCEEDINGS had in the above-entitled matter on the 3rd of January, A.D. 2002, at 8:30 a.m.

BEFORE: Administrative Law Judge
Donald Alexander

REPORTED BY: CANDICE ARENS, RPR, IL CSR
JOHNS, STEPHENSON & DUNNE/
ADVANTAGE COURT REPORTERS
515 North Main Street, Suite 300-B
Gainesville, FL 32601
(352) 373-7778

water into the pond and it perked out at the rate that they've said, the pond would never get deeper than about a foot and a quarter.

Q Now, what do you mean? You mean the water would never go below --

A I mean their calculations would show, if you started the percolation at times zero when rainfall started, that the depth of the water in the pond would never get deeper than one and a quarter feet. That's absurd.

Q So does that bring into question any of the other information that's been provided, sir?

A Well, to me, it says that the calculations need to be redone. There's errors in three different parts, the volume of runoff, the way that the runoff hydrograph was calculated and the volume of storage assumed for the ponds.

Q Could I ask you to go over to the next material on Pond A on MODRET time runoff input data. This has a stress period number, an incrememt of time and volume of runoff. Do you have any concern about this material, sir?

A I wasn't able to really evaluate MODRET in the manner that I would like to. It's not a model that I am familiar with and wasn't able to obtain it in the time

that I had.

Q Do you know if the MODRET uses the same hydrograph that was produced on the TR-20?

A No. Basically, just looking at the results, they put -- they start out as if the pond is full, it looks like. They put all the water in and then run it, run the model to see how fast the water goes out. The part about this that concerns me in terms of the input data is the unsaturated vertical hydraulic conductivity, eight feet per day.

Q And that you believe is incorrect?

A After talking with Mr. Boyes, he confirmed my suspicion that that number was out of line.

Q So that the information then used in the MODRET model would be incorrect, would it not, sir?

A I would suggest that it needs to be rerun.

Q This shows a factor of safety of two. Does that mean anything to you?

A Without having -- you know, being able to look at the model documentation to see what that factor does, I can't say.

Q Mr. Reck, in your professional opinion as a professional engineer, can you come to any conclusion professionally based upon the information that has been submitted? (Mr. William Reck, P. E.)

A Yes. My conclusion is that Kelly Engineering used the information from the geology report that was in error in terms of the conductivities, the percolation rates. The runoff hydrograph that he calculated was in error, and the assumed volume of storage in the ponds is in error because he assumed that the water table would be right above the clay layer, which it should be much higher than that. So, you know, there's three errors in his engineering calculations.

Q Do you believe that an application -- or the application for a permit should be granted based upon the information that you know now?

A Based on this engineering report, I would say that they have not proved anything. The engineering calculations need to be redone.

MR. MUTCH: That's all I have for Mr. Reck, Your Honor.

THE COURT: Mr. Lobdell?

CROSS EXAMINATION

BY MR. LOBDELL:

Q Now, you live in the area, don't you, Mr. Reck?

A That's correct.

Q You actually live in the Glen Springs area itself?

A I live on Glen Springs Road.

A. Yes, I did.
Q. And how did you do that calculation?
A. Well, in that project evaluation summary --
Q. Could you show me on that?
A. Yes.
Q. I mean, you've got your program evaluation summary, sir.
A. On this row titled Mean Annual Rainfall Inch it is 4.2 inch rainfall. The runoff for each basin is listed here.
Q. And that's based upon your coefficient which is 75.27, for instance, for the first one?
A. Yes.
Q. All right.
A. And then based on the rainfall runoff there, I calculated runoff volume which is listed in this row.
Q. Yes, sir.
A. So now comparing these volumes to the storage volume provided in the basin, these basins can total retain the entire mean annual runoff because the total runoff volume is less than the storage volume.
Q. Right. Is it true then that it cannot

meet the 25-year, 24-hour total runoff volume? It exceeds that volume?

A. For Basin A, the 25-year, 24-hour total runoff volume exceeds the storage volume.

NOTE: This results in unauthorized discharge into our creek!

Q. And that's the same for the 100-year, 24-hour?

A. Yes.

Q. The 25-year, 96-hour?

A. Uh-huh.

Q. So for all these, it exceeds -- the amount of rain actually exceeds the storage volume provided?

A. No.

Q. Oh, I beg your pardon.

A. For Basin B and C, the 25-year, 24-hour total runoff volume is less than the storage.

Q. Okay. Thank you very much.

So you did do the calculation and you know that that is true and those numbers are based from the rainfall analysis for Northeast Florida?

A. Yes.

Q. Thank you, Dr. Fang.

Now, let's go on. On 8: Stormwater management systems which require a permit -- and