Leon County
Board of County Commissioners

Cover Sheet for Agenda #8

May 26, 2015

To: Honorable Chairman and Members of the Board

From: Vincent S. Long, County Administrator

Title: Request to Schedule Two Public Hearings on a Proposed Ordinance to Amend the Stormwater Standard for the Lake Jackson Basin for June 9 and July 7, 2015 at 6:00 p.m.

County Administrator Review and Approval:	Vincent S. Long, County Administrator
Department/ Division Review:	Alan Rosenzweig, Deputy County Administrator David McDevitt, Director, Development Support and Environmental Management
Lead Staff/ Project Team:	John Kraynak, Director, Environmental Services Division

Fiscal Impact:
This item has no fiscal impact to the County.

Staff Recommendation:

Option #1: Schedule two required Public Hearings to consider a proposed Ordinance to amend the stormwater standard for the Lake Jackson Basin (Attachment #1) for June 9 and July 7, 2015 at 6:00 p.m.

Report and Discussion

Background:

The Lake Protection Future Land Use category has been in the Comprehensive Plan since the Plan's inception in 1990. It was created in response to concerns regarding water quality in Lake Jackson. It is important to note that Lake Jackson has been designated both an Outstanding Florida Waterway and Aquatic Preserve by the Florida Department of Environmental Protection (FDEP).

At the time the Comprehensive Plan was being written, the lake had been recently impacted by development within its watershed, including the construction of Interstate 10 and the large-scale commercial developments along North Monroe Street (U.S. Highway 27). This development degraded the water quality of Lake Jackson by allowing large quantities of untreated stormwater containing organic sediment and undesirable nutrients to flow freely into the lake.

In response to the Lake Protection initiative in the Comprehensive Plan, the Land Development Regulations (LDRs) were amended in the Environmental Management Act (EMA) to adopt Special Development Zones (SDZs) around Lake Jackson and to adopt a new stormwater standard for non-single family residential uses. Subsequently, the Lake Jackson 50-year stormwater retention standard was adopted on January 28, 1992.

At their regular meeting on January 29, 2013, the Leon County Board of County Commissioners ratified actions taken at the December 10, 2012 Annual Retreat. These actions included establishing a new Strategic Initiative within the Board's Strategic Plan to "develop solutions to promote sustainable growth inside the Lake Protection Zone."

This proposed Ordinance is essential to the following revised FY2012-2016 Strategic Initiatives that the Board approved at their January 27, 2015 meeting:

- Implement strategies that protect the environment and promote orderly growth, including develop solutions to promote sustainable growth inside the Lake Protection Zone (2013)

This particular Strategic Initiative aligns with the Board's Strategic Priorities - Environment and Governance:

- Protect our water supply, conserve environmentally sensitive lands, safeguard the health of our natural ecosystems, and protect our water quality, including the Floridan Aquifer, from local and upstream pollution. (EN1 – rev. 2013)
- Promote orderly growth which protects our environment, preserves our charm, maximizes public investment, and stimulates better and more sustainable economic returns. (EN2 - 2012)
- Sustain a culture of performance, and deliver effective, efficient services that exceed expectations and demonstrate value. (G2)

With the guidance of these Strategic Priorities, staff from the Planning Department, Development Support and Environmental Management (DSEM), and Public Works developed recommendations intended to implement this Strategic Initiative. At a workshop held on November 19, 2013, the Board directed staff to move forward with these recommendations as part of the Lake Jackson Sustainable Development Project. A joint workshop with both City and County Commissions was conducted on March 10, 2015, that culminated in the proposed Text Amendment in Attachment #2. This Amendment was approved by both City and County Commissions for transmittal on April 14, 2015, and is scheduled for adoption by both Commissions on May 26, 2015.

Analysis:

Currently, there are two stormwater treatment standards for development within the Lake Jackson Basin:

1) single family residential, which must meet the base Minimum Countywide Environmental Standard which would typically treat the first 1.125 inches of runoff (there are four options to this minimum standard, but the 1.125 is the option most commonly used); and,

2) non-single family residential uses, which must retain post-development stormwater on-site for all storm events up to and including the 50-year, 24-hour duration storm.

The 50-year standard is retention-based and requires a significantly larger volume to be retained on site. A comparison of these two standards is shown in Attachment #3 for a one-acre site. The 50-year standard for commercial (non-single family residential) provides more than six times the volume compared to the base minimum standard for single family residential. More importantly, the base minimum standard for single family residential allows the volume to be discharged through a sand filter, which is inefficient at removing nitrogen and phosphorous compared to a retention standard, as shown in Attachment #4.

The stormwater treatment standard proposed for the Lake Jackson Basin is based on volume control. Volume control in the LDR refers to a volume of stormwater runoff in excess of the pre-development runoff volume generated by a particular storm event (usually the 100-year, 24-hour event) that is retained onsite. In general, as a development increases its impervious area, there is a corresponding increase in the volume of stormwater that is allowed to discharge downstream from the detention stormwater ponds. However, a volume control based pond would retain this corresponding increase on site.

Volume control is not a new concept for stormwater management. Both City and County codes require volume control for all closed basins. Closed basins are naturally depressed or artificially closed off portions of the earth's surface for which there is no natural and normal outlet for runoff other than percolation, evaporation, or discharge into a karst feature. Volume control is required to prevent the floodplain at the bottom of the closed basin from increasing its flood elevation. If you subtract the City of Tallahassee and the Apalachicola National Forest from the land area of Leon County, the closed basin areas encompass approximately 30% of the remaining land area within the County. Consequently, volume control regulations apply to 30% of the land regulated by Leon County.

As previously mentioned, detention with filtration does not provide the pollutant removal necessary to protect our lakes. The best form of stormwater treatment is retention, which is utilized in volume control type ponds. It is the best option because the pollutants are kept in the pond and either percolated in the ground or re-used for irrigation purposes. The Bradfordville Stormwater Study showed that to produce no new loading downstream, retention of 4-inches over the impervious area was needed, and retention was required as the primary method to achieve this goal. The size of the volume control type retention pond would exceed this Bradfordville standard as shown in Table 1.

Research on comparisons of treatment efficiencies for stormwater management systems showed retention (also referred to as "dry retention") is the best treatment option for achieving maximum pollutant removal efficiencies (Attachment #4). A volume control based pond for both residential at 20% impervious and commercial at 50% impervious would exceed the pollutant load efficiencies for the largest dry retention pond (1.25-inch). This would provide excellent water quality treatment and protect Lake Jackson.

The proposed Ordinance was drafted to implement the stormwater treatment requirement in the proposed Comprehensive Plan Text Amendment #PCT150104. The stormwater portion of this Amendment was highlighted in yellow for easy recognition. The proposed Ordinance will amend the Minimum Countywide Environmental Standards; therefore, the City will also be amending their Environmental Management Ordinance for stormwater treatment standards inside the Lake Jackson Basin to be consistent with both the Minimum Countywide Environmental Standards and the Comprehensive Plan.

The Planning Commission found that the Ordinance was consistent with the proposed Tallahassee-Leon County Comprehensive Plan Text Amendment #PCT150104 at a Public Hearing on May 5, 2015. The Comprehensive Plan Amendment is scheduled for adoption by both Commissions on May 26, 2015.

Options:

1. Schedule two required Public Hearings to consider a proposed Ordinance to amend the stormwater standard for the Lake Jackson Basin (Attachment #1) for June 9 and July 7, 2015 at 6:00 p.m.
2. Schedule two required Public Hearings to consider a proposed Ordinance to amend the stormwater standard for the Lake Jackson Basin for an alternate date.
3. Board direction.

Recommendation:
Option #1.

Attachments:

1. Proposed Ordinance Amendment
2. Proposed Comprehensive Plan Amendment
3. Stormwater Pond Treatment Volumes
4. Comparison of Treatment Efficiencies for Stormwater Management Systems

ORDINANCE NO. 15- _____

AN ORDINANCE OF THE BOARD OF COUNTY COMMISSIONERS OF LEON COUNTY, FLORIDA, AMENDING CHAPTER 10 OF THE CODE OF LAWS OF LEON COUNTY, FLORIDA, RELATING TO THE LAND DEVELOPMENT CODE; AMENDING SECTION 10-4.301. WATER QUALITY TREATMENT STANDARDS; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF LEON COUNTY, FLORIDA, that:

SECTION 1. Section 10-4.301 of the Code of Laws of Leon County, Florida, is hereby amended to read as follows:

10-4.301 Water Quality Treatment Standards

(1) *State Stormwater Treatment Requirement Adoption.* Water quality treatment shall be provided as a part of all development activity which requires a stormwater application under this article. Treated stormwater shall meet the applicable water quality standards set forth in F.A.C. chs. 62-4, 62-302, 62-520, 62-522, 62-550 and 62-346, and in this division. Design and performance standards set forth in such F.A.C. chapters are hereby adopted and incorporated in this article by reference. However, design and performance standards more stringent than those specified therein are also required in this section.

(2) *Stormwater treatment.* The following are minimum acceptable methods for stormwater treatment, provided that the discharges meet state water quality criterion. More stringent treatment methods may be required by the county administrator or designee if discharges fail to meet state water quality standards. The drainage area for determining treatment volumes shall include all areas draining to the facility (on-site and off-site).

(i) *Wet detention.* Wet detention treatment volume shall be, at a minimum, the runoff from the first three inches of rainfall, or as an option for sites with drainage areas less than 100 acres, the first 1 1/2 inches of runoff. One-half of the treatment volume must be discharged in 60 hours. Subsequently, the remaining one-half of the treatment volume must be discharged in 60 hours or more.

(ii) *Off-line retention.* Off-line retention treatment volume shall be provided

equal to 50 percent of the runoff from the first 3.0 inches of rainfall, or as an option for sites with drainage areas less than 100 acres, the first 3/4 inch of runoff. The full treatment volume shall again be available within 72 hours following a storm event, with appropriate on-site soils tests submitted to verify the infiltration rate.

(iii) *On-line retention.* For on-line retention or detention with filtration, treatment volume shall be equal to 75 percent of the runoff from the first 3.0 inches of rainfall, or as an option for sites with drainage areas less than 100 acres, the first 1.125 inches of runoff. For the filtration option, only systems that are capable of recovering the treatment volume within 36 hours shall be allowed.

(iv) *Swales.* Swale treatment volume shall be percolation of 80 percent of runoff from a three-year, one-hour (2.6 inches) storm event. Calculations demonstrating percolation of this volume within the swale within 72 hours shall be submitted with the permit application.

(v) If site constraints require another method of water quality treatment, such other method may be approved by the county administrator or designee if such method provides a level of treatment equivalent to off-line retention as specified in subsection (ii).

(3) Closed basins and standards.

(a) Closed basins meeting the following criteria shall be regulated in accordance with this subsection:

(i) Any closed basin which has been identified and mapped as a regulated closed basin by the Board of County Commissioners; or

(ii) Any closed basin for which it can be shown by hydrologic analysis that cumulative increases in runoff volume from potential development patterns will cause a significant adverse impact on the frequency, duration, or extent of flooding.

(b) *Volume control required.* Runoff volumes within regulated closed basins in excess of the pre-development runoff volume shall be retained for all storm events up to a 100-year, 24-hour duration storm, except that if multiple development sites are located within the closed basin, the excess volume may be discharged from individual sites to an approved regional detention or retention facility located within the closed basin as may be allowed under other subsections of this section and pursuant to section 10-4.305. Recovery of the retention volume shall comply with one of the following:

Option (1): On the basis of a subsurface geotechnical analysis demonstrate the functionality of the retention facility through a continuous hydrologic simulation. The analysis shall clearly demonstrate that the increase in runoff volume above

the predevelopment condition is retained within the on-site stormwater facility. Additionally, the rate of discharge shall not exceed predevelopment rates for all duration and return frequencies up to and including the 25-year critical duration storm. The continuous hydrologic simulation can be accomplished by developing a stage/storage/infiltration relationship based on the proposed retention facility configuration and reported design infiltration rate. This relationship can be used to model the retention facility over an extended period of rainfall.

Option (2): One-half the required pond volume shall be recovered within seven days, and the full volume shall be recovered within 30 days.

(4) *Additional stormwater retention standards for the Lake Jackson Drainage Basin.* ~~Non-single-family residential uses which are approved for development (as specified in the comprehensive plan) subsequent to March 15, 1992, shall retain post-development stormwater on-site for all storm events up to and including the 50-year 24-hour duration storm.~~ Runoff volumes in excess of the pre-development runoff volume shall be retained for all storm events up to a 100-year, 24-hour duration storm, except that if multiple development sites are located within the basin, the excess volume may be discharged from individual sites to an approved regional retention facility located within the basin. For redevelopment, pre-development runoff volume calculations shall be based on a natural condition. The retained volume shall be recovered in accordance with subsection (3)(b) above.

(5) *Stormwater treatment standards within the Bradfordville Study Area.* Stormwater runoff from new development in the Bradfordville Study Area shall meet the standards set forth in this section in addition to other standards within Article IV.

(a) Stormwater runoff shall be treated to one of the following standards below:

(i) Systems utilizing on-line dry retention only. A volume of runoff calculated as four inches times the total impervious area that will be situated on the site shall be retained on the site or in an approved master stormwater facility. This calculation can exclude the wetted area of the pond/stormwater facility. This volume of runoff shall be collected from the entire developed portion of the site and directed to on-line dry retention storage. Retention can occur in cisterns, ponds, shallow swales, landscaped areas, or natural areas.

(ii) Systems utilizing a combination of off-line dry retention and detention:

a. Off-line retention shall be provided with a treatment volume calculated as two and one-half inches times the total impervious area on the site.

b. Detention portion of system--In addition to the dry retention volume, one of the following detention options shall also be provided:

1. Dry detention systems will provide a treatment volume calculated as two inches times the total impervious area on the site, or

2. Wet detention system with a permanent pool volume equivalent to two and nine-tenths inches times the impervious area onsite.

c. The calculation of the above volumes can exclude the wetted area of the stormwater facility.

d. Runoff from the entire developed portion of the site shall be directed in sequence to each of the above facilities.

(b) Drawdown requirements:

(i) For on-line dry retention (Subsection (5)(a)(i) above), the entire treatment volume must recover within 72 hours.

(ii) For off-line dry retention (Subsection (5)(a)(ii)a. above), the entire treatment volume must recover within 24 hours.

(iii) For dry detention systems (Subsection (5)(a)(ii)b.1.above), the treatment volume must recover within 72 hours. Dry detention systems will not include underdrains but will utilize an orifice or V-notch weir for drawdown. The bottom of the drawdown device will be a minimum of six inches above the pond bottom.

(iv) For wet detention systems (Subsection (5)(a)(ii)b.2. above), the bottom of the weir crest will be a minimum of 12 inches above the normal water level (seasonal high groundwater table elevation).

(v) Regardless of the method of volume recovery, the entire retention volume must recover within the time frame established above unless an approved continuous analysis, using Tallahassee Airport rainfall data from January 1, 1959 to December 31, 1998, demonstrates that the total volume retained within the stormwater system over the 40-year period is greater than or equal to that retained by a dry retention system as set forth in subsection (5)(a)(i) based on the above described recovery times. For systems

requiring a combination of retention and detention, this analysis shall only be used for the retention portion of the system. The detention portion of this combination system will still be required in full pursuant to Subsection (5)(a)(ii)b.

(c) For calculating the treatment volume required for pervious pavements and graveled areas, initially such surfaces shall be assumed to be 100 percent impervious, then deductions in the required treatment volume for such areas can be taken that is equivalent to:

(i) The porosity of the pavement material times the thickness of the paving material times a safety factor of five-tenths.

(ii) If, and only if, the soils immediately underlying the pavement for a depth of 18 inches have a permeability of three inches per hour or greater, as demonstrated by onsite percolation tests, then a further deduction can be taken equivalent to the porosity of the soil strata times four inches times a safety factor of five-tenths.

The above deductions will be allowed provided that the applicant specifically commits, in his Stormwater Operating Permit, to regularly sweep/vacuum the area covered with pervious pavement and to verify the pavement's percolation capacity when the operating permit is renewed.

(d) Groundwater table:

(i) Where volume recovery is to be by percolation, groundwater mounding calculations to demonstrate recovery of the retention volume pursuant to the requirements set forth in subsection (b) above shall be required unless the applicant conclusively demonstrates by other engineering methods that pond recovery will not be adversely affected by an elevated groundwater table. If the bottoms of all retention areas intended to percolate stormwater are shown by soil borings to be less than three feet above the historical wet-season high water table, a mounding analysis shall be required.

(ii) For dry detention systems, the bottom elevation of the detention basin shall be a minimum of one foot above the historical seasonal high groundwater table.

(e) Where volume recovery is to be by irrigation, the rate of land application shall not exceed one and one-half inches per week unless the applicant can conclusively demonstrate that the on-site soil conditions and vegetation warrant a higher

application rate. Under no circumstances shall irrigation water be allowed to discharge from the irrigation-site.

(f) The requirements in this section shall not preclude the applicant from voluntarily choosing to design and construct the on-line dry retention facility as an off-line facility.

(g) Facility design standards.

(i) Facility configuration: All on-line facilities shall have a flow-path-length to flow-path-width ratio of 2:1 or greater. The inlets and outlets shall be on opposite ends of the facility. If this is not possible, the effective flow length shall be increased by adding diversion barriers within the facility as necessary to provide this minimum flow length.

(ii) Retention ponds/areas shall have 4H:1V maximum side slopes on a sufficient length of the perimeter to allow adequate maintenance access to the bottom of the facility. If any of the side slopes are steeper than this, a security fence shall be placed completely around the perimeter of the facility and located exterior to the maintenance access ways. The fence shall not be required if the pond depth is less than 18 inches.

(iii) Wet detention ponds shall have 6H:1V maximum side slopes to two feet below the normal water level, then a maximum side slope of 2H:1V to the bottom.

(iv) Retention facilities shall have flat bottoms in order to maximize the surface area for percolation.

(v) Maintenance access requirements:

a. For every facility, the owner or developer shall provide, at a minimum, a 15 feet wide clear and stable access to the facility from the nearest "public" right-of-way or road. Such access shall be evidenced by a recorded reservation or grant of an easement, which shall run with the land. If the facility is to be dedicated to a local government, then such access shall be evidenced by the grant of an easement, which shall run with the land, to the benefit of the local government.

b. For retention facilities with an overall depth greater than 18 inches, provide, at a minimum, a 20 foot wide clear, level and stable access around a sufficient portion of the perimeter of the facility,

that is inside of any fences and external to the top-of-bank of the facility, to allow adequate maintenance from dry land. For retention facilities with an overall depth of 18 inches or less, provided the facility has side slopes of four horizontal to one vertical (or less) on at least one side of the facility, the applicant can provide the above access on the sloped side of the facility only. Any access required by the provisions of this subsection shall be evidenced by a recorded reservation or grant of an easement, which shall run with the land, to the benefit of the county.

c. The minimum inside radiuses of all access ways shall be 20 feet.

d. Adequate access for both personnel and mechanized equipment shall be provided to all inlet and outlet structures.

e. If Leon County is proposed to be the maintenance entity for any stormwater management facility permitted under this section, either by dedication, or by reservation of an easement, or by any other process, the applicant shall submit the engineering design for the facility directly to the Leon County Department of Public Works for its review and approval as to the adequacy of maintenance access to the facilities. An environmental permit shall not be issued until the applicant demonstrates, in writing, the approval of the department of public works.

(vi) Skimmer/trash rack requirements:

a. Trash/leaf traps with easy maintenance access shall be provided at key inlets and all outlets from a facility unless the applicant can conclusively demonstrate that it is not possible.

b. All outlet structures shall have an oil skimmer that extends above and below any outlet structure opening.

(vii) Energy dissipation requirements:

a. Energy dissipation devices sufficient to prevent erosion and resuspension of loose sediments shall be placed on all inlets to retention facilities.

b. Energy dissipation devices sufficient to prevent downstream channel erosion shall be placed at the outlets of all retention facilities.

(viii) Stabilization of stormwater treatment facilities: All berms and side slopes shall be stabilized with pinned sod. Pond bottoms can be seeded and mulched. Restabilization by the contractor or owner shall be necessary until such time that the sod is fully rooted and otherwise well established.

(ix) Rate control as required in Subsection 10-4.302 can be provided within any of the above water quality treatment facilities provided that the water quality treatment as required within this section is fully satisfied prior to any overflow/discharge from the facility.

(h) Nothing in this section shall affect the redevelopment standards for the incorporated area of the Bradfordville Study Area, which shall remain subject to the requirements of Chapter 5, Environmental Management, of the Tallahassee Land Development Code, as it may be amended from time to time.

(6) Retention for all post-development runoff. No newly concentrated or increased concentration of stormwater flow, including discharge from detention and retention facilities, shall be discharged off-site before or after treatment as required by subsection (2), unless such discharge is into an adequate conveyance, watercourse, wetland or waterbody of sufficient capacity at the time of discharge to sustain the effects of, and to convey such discharges, without detriment to the continued natural function of the resource and in accordance with the requirements of this division. Design of stormwater management systems should not allow changes in rate or course in a manner substantially different from pre-development conditions. If there is no adequate conveyance, floodplain or easement available, full retention of the stormwater for all events up to and including the 100-year, 24-hour duration storm is required.

(7) *Treatment for direct discharge to active karst features.* Runoff to be discharged to active karst features shall be treated to comply with F.A.C. 62-520.420 prior to discharge.

* * *

SECTION 2. Conflicts. All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed to the extent of such conflict, as of the effective date of this Ordinance, except to the extent of any conflicts with the Tallahassee-Leon County Comprehensive Plan, as amended, which provisions shall prevail over any parts of this Ordinance which are inconsistent, either in whole or in part, with the Comprehensive Plan.

SECTION 3. Severability. If any section, subsection, sentence, clause, phrase or portion of this article is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions of this Ordinance.

SECTION 4. Effective date. This ordinance shall be effective according to law.

DULY PASSED AND ADOPTED BY the Board of County Commissioners of Leon County, Florida, this ____ day of _____, 2015.

LEON COUNTY, FLORIDA

BY: _____
MARY ANN LINDLEY, CHAIRMAN
BOARD OF COUNTY COMMISSIONERS

ATTEST:
BOB INZER, LEON COUNTY CLERK OF THE COURT AND COMPTROLLER
LEON COUNTY, FLORIDA

BY:_____

APPROVED AS TO FORM:
LEON COUNTY ATTORNEY'S OFFICE

BY:_____
HERBERT W.A. THIELE, ESQ.
COUNTY ATTORNEY

Policy 2.2.18: [L]

LAKE PROTECTION *(Rev. Effective 12/22/95; Revision Effective 7/26/06; Renumbered 3/14/07)*

Intent

Lake Jackson, designated both an Outstanding Florida Water (OFW) and Aquatic Preserve, is one of the most unique waterways in Florida. Historically, the lake has suffered from water quality issues associated with rapid urbanization and large-scale roadway projects. Lake Jackson's water quality has improved since adoption of the Comprehensive Plan, due in large part to the adoption of stringent stormwater treatment standards and the implementation of capital projects; however, nutrient levels in the Lake remain elevated and the Lake continues to be designated "Impaired" by the Florida Department of Environmental Protection.

The intent of the Lake Protection category is to ensure that development within the Lake Jackson basin occurs in a sustainable and environmentally sound manner with minimal impact to water quality. The Lake Protection category is the basis for regulation and, where appropriate, limitation of development and redevelopment of land within the Lake Jackson Basin. The bounds of this category are to be the Lake Jackson basin boundary adjusted to include contributing watersheds but excluding existing, more intensely developed areas south of Interstate 10 and areas outside the Urban Service Area.

Allowable Uses, Densities, and Intensities

Residential

The Lake Protection category shall allow for single family residential uses at a base density of one (1) dwelling unit per two (2) gross acres.[1] To encourage compact and efficient development, two density bonus options are available for properties within the category:

1. A residential density of up to two (2) dwelling units per gross acre may be permitted within developments designed as a Clustered Subdivision.
2. A residential density of up to eight (8) dwelling units per gross acre may be permitted within the Lake Protection Node (LPN) zoning district.

[1] (Leon County) Any development affecting real property located in whole or in part within the Lake Protection Future Land Use Map category west of US 27 North for which an initial Planned Unit Development Concept or Final Development Plan was approved before January 1, 2005 shall be vested for all uses, intensities and densities set forth in the PUD Concept Plan Ordinance. Said PUD shall be entitled to rely on the closed basin exemption previously set forth in this section if the Commission determined prior to January 1, 2005 that the PUD met the requirements for such closed basin exceptions and that such determination has not been overturned by a court of competent jurisdiction at the time vested rights are sought under this provision. If a court of competent jurisdiction invalidates such a PUD due to reasons unrelated to whether the property met the requirements for the closed basin exception, any new or modified PUD application relating to the same real property shall be vested for the uses, intensities and densities of the previously approved PUD. All development within said certified closed basins approved pursuant to this provision shall be approved through the PUD amendment process, except that in unincorporated Leon County a one-into-two residential lot split exemption shall be processed according to the established County procedures instead of the PUD process.

Mixed-use & Non-residential
Non-residential and mixed-use development (including, but not limited to, office and commercial uses) within the Lake Protection category may only be permitted within areas designated with the Lake Protection Node (LPN) zoning district. Within this district, single use, non-residential development shall be allowed at a maximum intensity of 10,000 square feet (s.f.) per acre. Projects containing a vertical mixture of uses, including any combination of office, commercial and residential uses, may receive a bonus of 2,500 s.f. per acre, for a total of 12,500 s.f. per acre.

Community and Recreational Facilities
Community facilities and recreational uses, including, but not limited to, schools, parks, police and fire stations, and religious facilities, shall be permitted within the Lake Protection (LP) and Lake Protection Node (LPN) zoning districts. These uses shall be allowed at a maximum intensity of 10,000 square feet (s.f.) per acre.

Special Conditions

The following special conditions shall apply to the Lake Protection Future Land Use category:

1. The Lake Protection Node zoning district shall only be permitted at the following intersections:
    - Highway 27 North and Sessions Road
    - Highway 27 North and Capital Circle NW/Old Bainbridge Road
    - Highway 27 North and Fred George Road
    - Bannerman Road and Bull Headley Road

    The exact extent of these Nodes shall be specified in the City of Tallahassee and Leon County land development regulations, but generally shall not extend beyond ¼ mile from the respective intersection and shall not include areas within a Special Development Zone (SDZ) or existing single-family subdivisions.

2. As an alternative to large-lot developments, Clustered Subdivisions shall be permitted within the Lake Protection zoning district. Clustered Subdivisions shall:
    - Contain a minimum of 60% contiguous open space preserved in perpetuity and comprised of such things as preservation and conservation features, Special Development Zones, undeveloped uplands, passive recreation areas, and storm water facilities designed as a community amenity;
    - Be developed at a maximum density of two (2) dwelling units per gross acre; and,
    - Be served by central water and sewer systems.

3. A volume control based stormwater treatment standard shall be required for all development and redevelopment within the Lake Protection land use category. This standard shall ensure that runoff volumes in excess of the pre-development runoff volume shall be retained for all storm events up to a 100-year, 24-hour duration storm.

To encourage redevelopment in the Lake Protection category, a partial credit may be applied toward existing impervious surface on previously developed sites.

4. Additional development standards deemed necessary to protect Lake Jackson from further degradation and/or improve existing water quality may be included in the land development code.

5. Existing, lawfully established, non-residential uses within the Lake Protection land use category that are compatible with surrounding uses and meet all water quality standards for the Lake Jackson Basin shall be considered permitted uses.

~~This is a protection category that is specific to the well documented scientific concerns regarding the degradation and continuing pollution of Lake Jackson. The category is based on the lake basin boundary adjusted to include contributing watersheds but to exclude existing, more intensely developed areas south of Interstate 10. Consistent with the purpose of this category, Lake Protection densities and intensities shall be applied to undeveloped areas within the Lake Jackson drainage basin when such properties are developed.The Lake Protection category allows residential uses of one unit per two acres1. An option to develop at a density of one unit per gross acre is available within the City as long as the resultant development clusters the units on 25% of the property and maintains the remaining 75% in natural open space. In the unincorporated portions of the Lake Protection category clustering is allowed on 40% of the site at a net density of two (2) units per acre on the developed portion of the property. The remaining 60% of the property must remain in natural open space. The cluster options are intended to preserve green space within this land use category and be designed to minimize non-point pollution from the site. Cluster of residential development in areas designated for Lake Protection land use shall be permitted only on those portions of parcels not located within the Lake Jackson Special Development Zone and lying below one hundred ten (110) feet NGVD, and for higher elevations not determined to be severely limited by environmental constraints. Such constraints may be determined by on-site environmental analysis, building or soil limitation ratings in the Leon County Soil Survey, or other natural resource inventory determined appropriate by the local government.Industrial, office and commercial uses are prohibited in the Lake Protection category within the city limits. In the unincorporated areas of the Lake Protection category, minor office and minor commercial uses may be approved through the PUD process only if development retains its resultant stormwater on site. All industrial, commercial and office uses other than minor are prohibited in the unincorporated areas of the Lake Protection category as well. Urban services are intended for this category inside the Urban Service Area.~~

~~Additional requirements based on scientific studies and deemed necessary to protect the lake from further degradation, as well as improve existing water quality, will be included in the land development code. Existing non-residential uses within the Lake Protection land use category that meet all water quality standards required in the comprehensive plan by the time frames required in the plan, will be considered permitted uses.~~

~~Within the Lake Protection Category, stormwater for non-single family and non-vested uses shall be retained on-site.~~

Stormwater Pond Treatment Volumes

	***Pond Volumes for a One Acre Site (inches over the site/total cubic feet)**	
Ordinance Provision Met	**Assume Residential at 20% Impervious**	**Assume Commercial At 50% Impervious**
**FDEP - 0.5" (State Min. Standard)	0.50" / 1,815cf	0.50" / 1,815cf
**FDEP -0.75" (Outstanding Florida Water Standard)	0.75" / 2,723cf	0.75" / 2,723cf
**Lake Protection - 1.125" (Base Min. Countywide Standard)	1.125" / 4,084cf	N/A
Bradfordville - 4" Over Impervious Standard	0.80" / 2,904cf	2.00" / 7,260cf
Volume Control -Pre/Post retention through the 100-year, 24 hour storm	**1.72" / 6,278cf**	**3.01" / 10,922cf**
Lake Jackson 50-year Post-development Retention Standard	N/A	7.39" / 26,826cf

*All of the values above are for stormwater facilities serving a 1.0-acre site developed with a post-developed pervious area CN of 66 – which has been constructed on an undeveloped site with an original CN of 60.
**Calculated as inches over the 1.0-acre drainage area – recovery by filtration is allowable.

POLLUTANT REMOVAL EFFICIENCIES FOR TYPICAL STORMWATER MANAGEMENT SYSTEMS IN FLORIDA

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Comparison of Treatment Efficiencies for Stormwater Management Systems

A comparison of treatment efficiencies for typical stormwater management systems used in the State of Florida is given in Table 8 based on information obtained in the literature review. In cases where a range of removal efficiencies are presented in technical reports related to a particular stormwater management technique, the mid-point of the range is given in Table 8 for comparison purposes.

The Florida State Water Policy, outlined in Chapter 17-40 of the Florida Administrative Code, establishes a goal of 80% annual reduction of stormwater pollutant loadings by stormwater management systems. Of the stormwater management systems listed in Table 8, only dry retention systems, with 0.5-inch of runoff retained, meet the State Water Policy goal of 80% reduction in annual pollutant loadings to the system. Off-line retention/detention facilities meet the 80% reduction goal for total phosphorus, TSS, BOD and total zinc, but provide only a 60-75% annual pollutant reduction for total nitrogen, copper and lead. Wet detention systems can meet the 80% reduction goal for TSS only, with removal efficiencies from 40-50% for total nitrogen, total phosphorus and BOD. Dry detention with filtration systems meet the 80% reduction goal for total lead only and provide virtually no pollutant removal for total nitrogen, total phosphorus and BOD. Based on the available literature, dry detention with filtration systems were found to exhibit a high degree of variability in estimated removal efficiencies. The actual removal efficiencies achieved by dry detention with filtration systems are a function of the relationship between the underdrain system and the seasonal high groundwater table.

TABLE 8

COMPARISON OF TREATMENT EFFICIENCIES FOR TYPICAL STORMWATER MANAGEMENT SYSTEMS USED IN FLORIDA

TYPE OF SYSTEM	ESTIMATED REMOVAL EFFICIENCIES (%)						
	TOTAL N	TOTAL P	TSS	BOD	TOTAL Cu	TOTAL Pb	TOTAL Zn
Dry Retention							
a. 0.25-inch retention	-60	-60	-60	-60	-60	-60	-60
b. 0.50-inch retention	-80	-80	-80	-80	-80	-80	-80
c. 0.75-inch retention	-90	-90	-90	-90	-90	-90	-90
d. 1.00-inch retention	-95	-95	-95	-95	-95	-95	-95
e. 1.25-inch retention	-98	-98	-98	-98	-98	-98	-98
Off-Line Retention/Detention	-60	-85	-90	-80	-65	-75	-85
Wet Retention	-40	-50	-85	-40	-25	-50	-70
Wet Detention	-25	-65	-85	-55	-60	-75	-85
Wet Detention with Filtration	-25	-60	-98	-99	-35	-70	-90
Dry Detention	-15	-25	-70	-40	-35	-60	-70
Dry Detention with Filtration	0	0	-75	0	-65	-90	-25
Alum Treatment	-50	-90	-90	-75	-80	-90	-80