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Submitted by
Dian Deevey
#000882

To: Gainesville City Commission

From: Dian R. Deevey
1702 SW 35th Place
Gainesville FL 32608

Subject: Wetlands

The city commission is considering a revision in the comprehensive plan whereby developers will be allowed under unspecified conditions to drain and fill wetlands on their property, provided they "mitigate" the losses elsewhere in the county.

Wetlands are a critical component in the flood control strategies employed by the city, as described in the data and analysis section of the Stormwater Management Element of the comp plan passed last year. According to this document, only one of the 10 drainage basins in the city—Hogtown Creek—has existing capacity problems. Blues Creek and Turkey Creek drainage basins are described as having adequate capacity, as determined by the most recent study. This study evaluated future demand on the basis of estimated increases in the amount of impervious surface expected to be added at various points in the future.

However, it is obvious that if wetlands are drained by developers, and if development is allowed on the large areas of hydric soils present in the city, the existing projections will be in error, possibly seriously in error. This is because past history of flood heights is a critical source of information on which to base these estimates.

The loss of water storage capacity in wetlands, and in the hydric soils that surround most of our wetlands and will also be developed, will result in much more rapid drainage of rainwater through the existing drainage system. One result will be increases in flood height, and the net effect will be to invalidate the assumptions now being used to estimate capacity needs.

We can expect that more numerous and more expensive stormwater management facilities will be required as a consequence of this ill considered wetlands policy. Due to a recent change in the manner in which stormwater facility costs are assessed, the cost of these new facilities will fall largely on existing residents in the basins, and not on the developers who destroyed the wetlands and initiated the problems. Some costs may even be underwritten by taxpayers alone.

Before approving this extremely questionable policy change, the Commission should explore the additional costs it is likely to entail. Commissioners should also listen attentively to residents in the Blues Creek and Turkey Creek basins who have come before the commission to report serious flooding problems, and to oppose this senseless change in policy.

As the goals and objectives of the Stormwater Management Element appear to conflict with those of the Conservation Element as amended, I urge that there be a considered comparison and review of these two elements, to ascertain whether they are not, in fact, mutually contradictory.

I also believe you should compare the statements about current and future stormwater facilities adequacy with the justification offered to DCA for designating the entire city a redevelopment area.

The city claimed that any future development anywhere will necessitate major new stormwater infrastructure investments. If this is true, then a prudent government should act to restrict as far as possible the loss of essential stormwater storage capacity of wetlands and their associated hydric soils. They should also share with the public how much these infrastructure improvement will cost, before giving the green light to developers to institute the changes that will be so expensive for us all.

I attach a part of the data and analysis section of the Stormwater Management Element of the Comprehensive Plan. Thank you.

NEEDS ANALYSIS

DESIGN CAPACITY AND DEMAND

Stormwater management is unique among utility services in that the demand for service is not based directly on population projections. Instead, it is estimated on the basis of historical storm events and the amount of impervious surface added during development. Minimum levels of service for stormwater quantity and quality are dictated by state mandates. Because these mandates are intended to restrict post-development rates of stormwater discharge to pre-development rates for the design storm, further development during the planning period, should not reduce the capacity of the City's existing system to handle the design storm. Current deficiencies will require additional study and revenues to correct. They are not anticipated to be completely remedied during the 2000-2010 planning period.

Water Quantity

The City, with County participation, updated its Master Flood Control Planning Maps in 1990. These maps identify flood zone limits and rates of runoff for 10-, 25- and 100-year 24-hour storm events for the primary stormwater management systems in the City. The Flood Study Update¹ incorporated creek and open channel cross sections, as well as structure and land use data in its analysis. It also addressed major creek watersheds and 150 depression basins. The Flood Study Update found that floodplain limits and stormwater discharge rates had increased over those determined in an earlier study. The most significant reason for this increase was the soils information used. The earlier study, completed by Sverdrup and Parcel in 1974, had very limited soil information, as was noted in that study. The Flood Study Update incorporated data from the 1985 Soil Survey of Alachua County by the Soil Conservation Service. The major disparity in the soils data was that the earlier data assumed much more absorptive sandy soils than actually exist in basins draining through Gainesville. Hence, the runoff models predicted more stormwater than in the 1974 study. Increased flood zone elevations were consequently established.

Capacity

The City of Gainesville's stormwater management system is dependent on the natural creek network for a positive outfall (see geographic service area of each basin in Map 2). The City's Flood Study Update predicts the hypothetical impact of the 10-year and 100-year flood events on those

¹ Flood Study Update refers to a series of reports prepared by CH2M Hill which resulted in the Master Flood Control Planning Maps adopted in 1990.

systems. This information, when presented on the Master Flood Control Planning Maps define the extent of the 10-year and 100-year events. This information is useful for two purposes: 1) preserving basin capacity and 2) identifying potential threats to human life and property.

Preserving capacity for each basin is accomplished by evaluating the impact of development proposals on the flood channel (defined by the 10-year event) and flood plain (defined by the 100-year event) portions of the property. The criterion of no development within the flood channel preserves the flow capacity of the basin. The additional criterion of maintaining all flood storage within the flood plain preserves all storage capacity within a basin.

The capacity of each basin was determined by identifying the existing flood channel and floodplain elevations and the 10-year projected elevations at specific stations along each creek. (The flow and elevations both existing and future are given by creek basin in Appendix B.) As can be seen by reviewing the projected elevations (data shown in Appendix B) only minimal changes from the existing condition are expected. The system is adequate for the five-year and ten-year planning period. The study assumed full development of existing platted lots and minor increases in impervious area (200 square feet) on existing developed lots. The changes in projected flood channel elevations and floodplain elevations are minimal due in large part to the fact that the City is 83% built-out (Future Land Use Element, Data and Analysis 1991-2001 Comprehensive Plan), and therefore most lots already contain significant impervious surface area.

Additionally, major redevelopment of existing developed areas that were developed prior to current stormwater management regulations results in improvement to basin capacity. This improvement occurs because the new development must provide on-site storage of a portion of the stormwater, except in cases of redevelopment in the downtown area where an alternative means of stormwater treatment is allowed. With on-site storage an incremental amount of flow is taken out of flow and the basin capacity is not decreased.

Of the ten drainage basins in the City, only the Hogtown basin has existing capacity problems. A remedy developed to offset development impacts was implemented by a policy initiative in 1988. This policy limits the volume as well as the rate of runoff for the 100-year critical duration storm event. In the Hogtown basin no increase in volume from the pre-development condition is permitted to be released prior to 72 hours after the design storm event. Flooding in the basin has not been observed to have increased. This is due to the fact that the majority of basin has already been developed and more stringent development requirements have been implemented. A study conducted by CH2M Hill determined the most effective and feasible location for a regional stormwater basin within this basin. A regional basin is expected to greatly alleviate existing flooding problems. In addition to this study, work was completed to improve a berm located between the Sugarfoot Prairie and the Anglewood Subdivision to reduce the overflow of floodwater from the prairie into the neighborhood.

Water Quality