

**MEMORANDUM  
FROM  
DEPARTMENT OF COMMUNITY DEVELOPMENT  
DIVISION OF ENVIRONMENTAL SCIENCES**

**Date:** May 5, 2010

**To:** Brandon Dunn, Planner

**From:** Doug Griffith, Environmental Planner  
Phone: (239)533-8323  
e-mail: [dgriffith@leegov.com](mailto:dgriffith@leegov.com)

**Project:** Alico West  
**Case:** CPA2009-00001

**PROJECT:**

The applicant is requesting to amend the Future Land Use Map from Density Reduction/Groundwater Recharge (DR/GR) to University Community to allow for the development of 1950 dwelling units, 1,622,000 sq ft of commercial and a 250 room hotel.

**PROJECT SITE:**

A mining operation was initiated on the ± 919 acre property in the 1970s before permitting approvals were required. According to historic aerials the property was entirely cleared at one time even though the entire site was not mined. Since then portions of the property have been left to naturally revegetate introducing exotic species, predominately melaleuca and Brazilian pepper. Compaction of the soil has created scattered areas where hydric conditions exist introducing wetland plant species also predominately exotic. Because mining started before permitting approvals were required little if any reclamation of the site has occurred.

The ± 919 acre site is a combination of disturbed lands left over from the mining operation and a ± 263 acre lake or borrow pit. Of the total site approximately 350 acres were never mined, while the remainder of the site resulted in uplands being excavated and a lake being created. During the last 40 years, the mining lake has changed shape numerous times as a portion of the site was mined for aggregate and then backfilled with "fines," a by product of the aggregate production, to allow additional areas to be mined until all that remains onsite is overburden or fill dirt with no commercial or environmental value.

**ENVIRONMENTAL ASSESSMENT:**

A vegetative community assessment and protected species survey for Lee County listed species meeting the requirements of Lee County Land Development Code (LDC) Section 10-473 was conducted by Wilson Miller, Inc. in September 2009. The assessment and a Florida Land Use, Cover and Classification System (FLUCCS) map was submitted by the applicant.

Due to the extremely disturbed conditions onsite resulting from years of mining and associated activities there is very limited natural habitat remaining on the property. The remaining habitat has been highly disturbed by alteration of the surface water flows and the removal of a majority of the native vegetation. As such, other than water dependent species, there is limited potential habitat present for use by listed wildlife species. The following listed species were observed during the survey: American alligator, tri-colored heron, little blue heron, snowy egret, and wood stork.

County Staff conducted a site inspection on March 19, 2010 and noted the following:

The site was heavily disturbed and consisted of scattered nuisance and exotic vegetation with large piles of mining material remaining stockpiled on the property. The areas of stockpiled mining material were devoid of any vegetation and consisted of sand, rock and “fines,” or spoil material left over from the mining operation. The northern and eastern perimeter of the property has remnant pine flatwoods and wetlands that were disturbed from the mining operation. There is a ± 263 acre lake located onsite that was the remains of the mining pit. The portion of the lake County Staff was able to reach consisted of a banked slope with planted littorals, the water had minimal turbidity and appeared clear without any water quality issues observed.

ES Staff noted evidence of wildlife onsite including deer, black racer, the tracks of bobcat and wild hogs. No other species were observed, however there is the potential for periodic opportunistic foraging by listed species of wading birds within the littoral zone of the lake and canals.

#### **PROPOSED RESTORATION:**

The applicant is proposing restoration in conjunction with the development. The ± 350 acres that were not mined will be used as uplands for development. The lake will be used for recreational activities as permitted in the Miromar Development of Regional Impact (DRI), The lake will be enlarged when a portion is excavated to remove the “fines.” The southern and eastern portion of property abutting the lake is where the majority of the “fines” are located, these areas will be excavated creating a larger lake and the “fines” disposed of. Some of the fine material will be used for fill for the development, however a portion of this by-product of the mining operation is useless for fill and will either be hauled away or deposited into the lake. The applicant is proposing to deposit the fines that can not be used for fill into a portion of the lake, that will be excavated during the removal of fines, to create an island for a bird rookery. The applicant will coordinate with the University in the creation of the bird rookery and will be used by the university as a study area. This will create a wildlife habitat for listed wading birds and a university study area in compliance with Policy 18.1.12:

The creation of an island for a bird rookery as proposed by the applicant is consistent with the following Lee Plan Policy:

**Lee Plan Policy 18.1.12:** To encourage a variety of wildlife habitats and university study sites, special consideration will be given in the Conceptual Master Plan to the preservation of portions of the most pristine and diverse wildlife habitat areas (such as, pine flatwoods, palmetto prairies, and major cypress slough systems) as an incentive to reduce, on a one-for-one basis, open space

requirements in other developments within the University Community. The implementation of this policy will occur at the time of zoning and development review.

**LANDSCAPING:**

The Alico West Project is currently located within the DRGR Future Land Use category and the applicant is requesting to change to University Community. Both the University Community and DRGR address concerns with ground water recharge and water management. Policy 2.4.2 and Policy 2.4.3 determine the short-term and long-term availability of irrigation and domestic water sources, and assess whether the proposed land uses would cause any significant impact on present or future water resources. Policy 18.1.9 states that any development within the University Community land use will maintain or improve the currently existing quality and quantity of groundwater recharge.

With the property located at the edge of the DRGR and the request to change the future land use to University Community County Staff recommends that a policy be included to limit the amount of irrigation that will be required by incorporating language to promote the use of xeriscape landscaping.

County Staff recommends the following Policy Language to University Community land use category be included as an additional design standard for Alico West to ensure the use of xeriscape landscaping for water conservation:

*All plantings used in buffers and landscaping must be installed using xeriscape principles. Xeriscape principles include water conservation through drought-tolerant landscaping, the use of appropriate plant material, mulching, and the reduction of turf areas.*

The inclusion of the above Policy Language is consistent with the following Lee Plan Policies in the DRGR and University Community Land Use Category.

**Lee Plan Policy 2.4.2:** All proposed changes to the Future Land Use Map in critical areas for future potable water supply (Bonita Springs as described in Policy 1.7.10; Lehigh Acres as described in Policy 54.1.9; and all land in the Density Reduction/ Groundwater Resource land use category) will be subject to a special review by the staff of Lee County. This review will analyze the proposed land uses to determine the short-term and long-term availability of irrigation and domestic water sources, and will assess whether the proposed land uses would cause any significant impact on present or future water resources. If the Board of County Commissioners wishes to approve any such changes to the Future Land Use Map, it must make a formal finding that no significant impacts on present or future water resources will result from the change.

**Lee Plan Policy 2.4.3:** Future Land Use Map Amendments to the existing DR/GR areas south of SR 82 east of I-75, excluding areas designated by the Port Authority as needed for airport expansion, which increase the current allowable density or intensity of land use will be discouraged by the county. It is Lee County's policy not to approve further urban designations there for the same reasons that supported its 1990 decision to establish this category. In addition to satisfying the requirements

in 163 Part II Florida Statutes, Rule 9J-5 of the Florida Administrative Code, the Strategic Regional Policy Plan, the State Comprehensive Plan, and all of the criteria in the Lee Plan, applicants seeking such an amendment must:

1. analyze the proposed allowable land uses to determine the availability of irrigation and domestic water sources; and,
2. identify potential irrigation and domestic water sources, consistent with the Regional Water Supply Plan. Since regional water suppliers cannot obtain permits consistent with the planning time frame of the Lee Plan, water sources do not have to be currently permitted and available, but they must be reasonably capable of being permitted; and,
3. present data and analysis that the proposed land uses will not cause any significant harm to present and future public water resources; and,
4. supply data and analysis specifically addressing the urban sprawl criteria listed in Rule 9J-5.006(5) (g), (h), (i) and (j), FAC.

**Lee Plan Policy 18.1.9:** Prior to the commencement of development within the University Community land use category, an area-wide Conceptual Water Management Master Plan must be submitted to and approved by Lee County and South Florida Water Management District staff. This water management plan will be integrated with the Conceptual Master Plan and be prepared through a cooperative effort between the property owner, Lee County, and South Florida Water Management District. This master plan will insure that the water management design of any development within the University Community will maintain or improve the currently existing quality and quantity of groundwater recharge. This plan must be consistent with the drainage basin studies that were prepared by Johnson Engineering, and approved by the SFWMD. Lee County will amend the county land development regulations to require all new development to be consistent with the appropriate basin study.

**ENDANGERED SPECIES:**

The property does not have habitat for upland listed species and no upland listed species was observed however, with the large man made lake and associated wetlands the site does have habitat for listed wading birds and associated wetland species and listed wetland dependent species have been observed onsite. The existing and proposed enlargement of the lake and the creation of the bird rookery will create habitat for listed wading birds and the American alligator. No impacts to these listed species is expected to occur.

**ENVIRONMENTAL CONCERNS:**

The property was an existing mine since the early 1970s before permitting or reclamation regulations were established. The borrow pit has been excavated, enlarged, backfilled with mining by-products, and enlarged again changing shape throughout the mine's history. Today the site is heavily disturbed

with stocked piled mining material that was never used, there are areas that were backfilled with “fines” a material left over after refinement of the aggregate. These areas were the “fines” were located have been left to revegetate, predominately with exotic vegetation.

There are ± 63.7 acres of wetlands located on the property, of the total, ± 35.8 acres will be impacted by the proposed project. The majority of the wetlands are located between the mining area and Alico Road right-of-way (ROW) and along the eastern property line adjacent to the powerlines. The wetlands along Alico Road are separated from the mining area by an existing berm and receive runoff from Alico Road. Under the proposed plan Residential and Office development will be constructed along Alico Road and will impact these wetlands. Native wetland areas are located along the eastern and southern boundary adjacent to the powerline ROW. The southern wetlands are isolated from off-site flows via berms and roadways and exhibit a high level of exotic infestation. These wetlands have been impacted as a result of past activities which have greatly reduced the hydrology and habitat function, and will be impacted further as a result of FGCU related development. The eastern wetlands have also been impacted as a result of past activities which have greatly reduced the hydrology and habitat function, these wetlands are outside of the limits of development.

### **Fines Material**

#### **Project History**

A processing plant was located onsite that processed the materials from the onsite and adjacent offsite mining operations. The “fines” left over after processing of the material from the mines was left to accumulate onsite, often simply backfilled into portions of the lake after mineral extraction. “Fines” are made up of fine sand, silt and clay. Test boring were conducted throughout the site to determine the extent of the fine material and proposals on ways to dispose of the “fines”.

Camp Dresser & McKee Inc. (CDM) completed a geotechnical study in 2002 to evaluate the suitability of the residue filled areas for redevelopment. The study included 16 test borings and physical testing of residue samples. The fill thickness from mining residue ranged from 8.5 feet thick to 68.5 feet thick. Recommendations were provided regarding the potential settlement and ground improvement for the proposed structures and areas of the site being considered for redevelopment. This feasibility study findings concluded that the majority of the residue was fine sand that could be used for structural fill, the residue includes fines (silt and clay) in lenses throughout the filled areas that can have a deleterious effect on fill properties. A method to separate the fines from the sand can be used during the removal of the residue.

A bathymetric survey was conducted of the lake to determine if it was feasible to redeposit the residue into the lake. The survey showed the average depth of the lake to be 20 feet. If all the fine material was deposited into the lake the lake bottom would rise approximately 10 feet. Other alternatives were also looked at including separating the sand from the fines for structural fill in order to redeposit less material into the lake and another alternative was redepositing the fines material offsite.

Because the fines material would require significant improvements in order to support construction associated with site development the applicant has proposed construction on the unmined areas only and proposes creation of an island preserve on the mining residue in the south central portion of the project. To create this island an 8-to-10 foot deep channel will be excavated in the fines to separate the proposed preserve from the developable area.

ES Staff has concerns with the amount of fines left on the subject property and the proposed disposal methods currently being considered. If fine sand is the predominate type of residue onsite and a majority of the fine sand can be separated from the residue to be used as fill, then disposal of the remainder of the fines into either the onsite or offsite lakes will be less of an environmental and water quality impact.

ES Staff has concerns with fine disposal and resuspension of the fine material due to wave action and recommends additional research on the possibility of resuspension of the material. CDM conducted sedimentation tests using the fine grain silts and clays to determine how quickly settlement would occur and turbidity levels would drop. The tests indicated that the residue settled and turbidity dropped to acceptable levels within three days. ES Staff still has concerns with disposal and resuspension of the fine material and recommended additional research. The applicant has provided policy language to the affect that a fines disposal plan will be provided prior to any local development order.

ES Staff recommends a revision to the Applicant's language for the proposed new Policy 18.1.9.1:

**POLICY 18.1.9.1: Development of Regional Impact, zoning and development order approvals on property within the University Community that were known as Alico West CPA2009-00001, must provide an environmental assessment that includes a fines relocation/disposal plan to be implemented at the time of development of the property. The burden of supplying a fines disposal/relocation plan acceptable to Lee County will be the responsibility of the developer. In addition, prior to zoning or development order approval on any portion of the Alico West property, the developer must demonstrate through modeling, accepted by Lee County staff, that proposed development will not create significant impacts on present or future water resources.**