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**CONSERVATION ELEMENT**

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**I. PURPOSE**

The purpose of this section of the Evaluation and Appraisal Report is to examine the Conservation Element of the Washington County Comprehensive Plan for its successes and shortcomings. While discussed briefly in this section, identified major issues will receive further examination in the Identified Issues Section of the report.

**II. INTRODUCTION**

This document has been prepared by the Washington County Planning Commission and the Washington County Planning Department in cooperation with other County agencies. While many issues will be presented in this section, those identified at the scoping meeting will be presented and further elaborated on in the Identified Issues Section the report.

**III. THE EXISTING SYSTEM ANALYSIS**

An increase in development and growth in Washington County has served to emphasize the importance of protecting and conserving the natural resources while enhancing the public health, safety, welfare and the quality of the environment.

A. Waters Resources.

Approximately 16,488 acres of the County's area are surface waters, all of which are geologically and hydrologic ally significant to Washington and Bay counties. These areas include the Choctawhatchee River forming the western border of the County, along with other smaller streams that include Holmes Creek, Pine Log and Econfina Creek. In addition to these streams there are many lakes within the County that add to the overall attractiveness of the County. All of these water sources serve as the habitat of numerous plants and animals that are threatened as the result of development. . Surface water makes its way into the ground to reach the aquifer systems which becomes the water supply for all uses in Washington County. As surface water is a direct link to the Florida Aquifer, not only is prevention of contamination vital to ensure pure drinking water needs for current needs are met, but to ensure adequate supply for the future. This matter will be discussed in detail in the Identified Issues section of this report. The preservation and protection of all of these areas will be discussed in detail in the Identified Issues section of this report.

1. Creeks and Rivers. Table 11-1 should be considered a partial listing of the number of fresh water streams in the County. The list is included in this report to demonstrate the vast amount of streams that must be considered environmentally and hydrologically significant to the groundwater resources of the County.

Alligator Creek	Holmes Creek
Bear Bay Creek	Hudson Branch
Boggy Branch	Jones Rice
Bonnet Pond	Mill Branch
Botheration Creek	Kersey Branch
Broad Branch	Little Dram Branch
Brock Mill Branch	Little Hard Labor Creek Little
Carlisle Lake	Reedy Branch
Carter Branch	Long Branch Mill Branch
Chalk Hill Branch	Mill Creek
Chapel Branch	Mitchell Branch
Choctawhatchee River	Mitchell Mill Creek
Cypress Creek	Open Creek
Cypress Slough	Palmer Branch
Daniels Branch	Piney Branch
Davis Branch	Pippin Mill Creek
Dead River	Poley Creek
Dip Vat Branch	Pond Creek
Ditch Branch	Potter Branch
Double Branch	Red Head Branch
Double Pond Branch	Reedy Branch
Dram Branch	Reedy Creek
Econfina Creek	Roach Branch
Fanning Branch	Sand Mountain Branch
Flat Creek	Shaky Joe Branch
Gap Branch	Smutty Sweet
Gin Branch	Gum Creek
Godwin Branch	Spence Branch
Graveyard Creek	Street Branch
Greenhead Branch	Ten mile Creek
Gully Branch	Thorny Head Branch
Gully Creek	Wells Mill Creek
Gum Creek	White Oak Creek
Hard Labor Creek	Williams Branch
Harrell Branch	Yates Mill Creek
Helm Branch	

- a. Econfina Creek. The Econfina is located in the southeastern corner of Washington County and is north of SR 20. Most of the Econfina's 300 million gallons of water per day is from the Florida Aquifer and flows into Deer Point Lake. Deer Points supplies 45 million gallons of water to the drinking supply of Bay County. That, combined with the fact that rare plants and species are present makes the area environmentally significant. To protect this highly significant area, West Florida Water Management District (WFWMD0 purchased 29,603 acres in Washington and Bay counties to protect the only Class I potable water supply body. This is a critical area of concern, not only for Washington County, but for Bay County as well. The protection and preservation of this unique area will discussed further in the Identified Issues section of this report.

- b. Holmes Creek. Holmes Creek begins in Alabama and flows through areas with high sandy banks and beautiful swamps and confluences with the Choctawhatchee River. The stream has high limestone walls, sand bluffs and lush vegetation and serves a habitat for a wide range of animal species. Pollution is received by the creek in the form of wastewater treatment plants from Bonifay, Graceville, and Chipley. Conversely, the Town of Vernon has successfully corrected a long standing pollution problem with an upgrade of the wastewater treatment plant and the installation spray fields with no waste water being directed to Holmes Creek. Chipley's upgrade to its wastewater treatment has been engineered and funded as has the spray field. It is expected that this upgrade and spray field will be complete by 2009 with no water being directed to Holmes Creek. There are not other wastewater systems in the County that pose a threat to these surface waters. This will be discussed further in the Identified Issues section of this report.
  
- c. Choctawhatchee River. With its headwaters in Alabama, the river flows 96 miles from the Alabama state line into the Choctawhatchee Bay, and forms the border between Walton and Washington counties. Holmes Creek in Washington County and Wrights Creek in Holmes County are major tributaries of the river as is a portion of the Sand Hill Lakes in Washington County including a recharge area from the Floridan Aquifer springs discharging into Holmes Creek. As described in the 1996 Choctawhatchee River and Bay SWIM plan, the Choctawhatchee River and Bay watershed supports a wide array of aquatic and wetland resources and provides numerous benefits for the human community. Among the environmental resources are a variety of aquatic and wetland habitats, extensive forests, Floridan Aquifer springs, steephead streams, and many species of flora and fauna. Human benefits provided include commercial and recreational fisheries, marine transportation, military uses, outdoor recreation, tourism, aesthetic qualities, and economic benefits associated with all of these. While the Choctawhatchee River and Bay watershed continues to support outstanding resources, it has also experienced many of the impacts that are common to Florida estuaries. These include urban stormwater runoff and other nonpoint sources of pollution, widespread sedimentation, domestic and industrial wastewater discharges, and habitat loss and degradation. Cumulatively, these impacts have degraded the productivity of the river and bay system and diminished the benefits it provides. Preservation and protection of this area will be discussed further in the Identified Issues section of this report.
  
- d. Lakes and Ponds. The County has many large and beautiful lakes with pristine qualities that are being endangered as population grows and development continues along their shores. This threat is from septic tanks and the clearing of vegetation from the banks that allow erosion into the lakes. The development along the lake shorelines is a major concern and

will be discussed in detail in the Identified Issues section of this report. This subject will be discussed in greater detail in the Identified Issues section of this report.

Lake	Area in Sq Acres
Porter Lake	788
Big Blue Lake	504
Gap Lake	482
Lucas Lake	402
Hicks	365
Deadening	332
Pate	225
Dunford	220

2. Floodplains. Flooding is the primary emergency concern along the Choctawhatchee River, Holmes Creek, and associated tributaries, sloughs, river oxbow lakes, sinkhole lakes, and isolated swamps (locally called “bays.”). Serious flooding occurred in 1928, 1929, 1960, 1975, 1990, 1994, with two floods in 1998. Urban runoff also causes flooding in the County. The city of Chipley experiences this problem the most. Urban development on former wetlands, combined with the storm water runoff from homes, streets and commercial districts, has caused devastation to homes and businesses in Chipley.

Along with a new flood ordinance adopted in 2005, the rules of the Land Development Code discourage development within the floodplains within both the municipalities and the unincorporated areas of Washington County. When the possibility of the existence of flood plains are identified using the Flood Insurance Rate Maps (FIRM) as published by FEMA, the developer is required to submit an elevation certificate prior to the issuance of a permit. Septic, electrical, and well systems must then be elevated along with the structure to prevent damage from flooding. Many times, this serves to discourage development due to the additional costs being prohibitive. Most of the flood zones are in swampy areas and are not suitable for urban type development. During periods of extreme drought, the land is often appealing to potential buyers and it has served the County well to stress that the property is indeed in a flood zone and caution should be taken when purchasing land they might not be able to use for their desired purposes. While negligible development occurs in the floodplains, timber cutting and clearing of vegetation allows further erosion. This issue will be discussed in further detail in the Identified Issues section of this report.

The following summarizes flooding issues in the municipalities and the unincorporated areas of the County.

- a. Caryville. Flooding in Caryville is caused by excessive rainfall events occurring within the Choctawhatchee River basin. Nearly 80 percent of

the municipality is prone to flooding according to FEMA Flood Insurance Rate Maps. Caryville has experienced frequent flooding from the river, with a high chance of reoccurrence. An example of this can be seen in the historical flood data. In 1990 the river rose to approximately 21.21 feet, which is well above the river flood stage of 12 feet. In the 1994 flood, it rose to 27 feet. In the March 1998 flood the river rose to 19.65 feet and 17.50 feet in the October 1998 flood. This demonstrates Caryville's high vulnerability to flooding. Recognizing the impact of the Caryville flooding and the high vulnerability of the community to rising water, officials set about initiating one of the largest buyouts in Washington County's history.

An \$11 million mitigation program provided by the U.S. Department of Housing and Urban Development in 1995 permanently solved many of the structural flooding problems in Caryville. The flood was one of many events throughout the Town's history. The funds were provided as a result of the Tropical Storm Alberto flood disaster of 1994 (a 131 year event). Essentially, the majority of the Town's residents accepted a voluntary buyout offer and moved from the primary core of the community (along U.S. 90 and CR 279) to other locations outside of the Choctawhatchee floodplain. Some residents did not accept buyout funds. Several businesses, including a convenience store, the post office, a state prison work camp, and Town Hall itself remain in the core of the floodplain. Properties acquired under the buyout program are to remain as open space in perpetuity.

- b. Ebro. Flooding in Ebro is caused by excessive rainfall events occurring within the town or in environs closely surrounding the town. The floodplain of the Choctawhatchee River covers one quarter of a square mile of the northwest corner of Ebro. The floodplain of Pine Log Creek flows through Pine Log State Forest and the northern boundary line of the forest form the southern boundary of the town. All of Pine Log Creek's floodplain is located within Pine Log State Forest. Development is limited to recreational uses by the State of Florida in this area. Ebro is vulnerable to flooding in areas where swamps or sinkholes are present or were historically present before development. Additionally, urban runoff can increase the likelihood of flooding in locations not otherwise prone to flooding. For the most part, FIRMS accurately show flood-prone locations, although revisions may be needed during the FIRM update scheduled for 2008. .

Because of the low intensity of urban development, stormwater runoff (parking lots, rooftops, cleared land/fill, etc.) is generally a minor problem with regards to flooding. However, attempts at development of the old Arnold property and Blueberry Farms may affect the flooding potential of this area. Localized flooding can occur during thunderstorms on streets as well. Ten (10) structures in Ebro are documented within the 100-year floodplain (according to comparisons of FEMA Q3 flood data with County

911 addressing overlays). Zero (0) structures are within the 500-year floodplain. Of the ten structures, two (2) are businesses.

- c. Vernon. Flooding in Vernon is caused by excessive rainfall events occurring within the town or in environs closely surrounding the town. Vernon is vulnerable to flooding primarily as a result of the presence of Holmes Creek. The floodplain and floodway of Holmes Creek covers the entire northern boundary of the town. Smaller tributaries to Holmes Creek are found with the town. Homes west of the downtown area and along Spool Mill Road, Lazy Bone Drive, and other side streets are vulnerable. Additionally, urban runoff can increase the likelihood of flooding in locations not otherwise prone to flooding. For the most part, FIRM'S accurately show flood-prone locations, although revisions may be needed in some areas.

Several homes have been purchased in buyout programs sponsored through Hazard Mitigation Grant Program funds. This includes structures purchased in neighborhoods named in the above paragraph. This has removed many of the most vulnerable structures in Vernon. Many that remain have already been mitigated for flooding due to structural elevation at the time of construction.

Because of the low intensity of urban development, stormwater runoff (parking lots, rooftops, cleared land/fill, etc.) is generally a minor problem with regards to flooding. Some street flooding can occur during thunderstorms or extended rainy events (flooding unrelated to rising water in Holmes Creek).

One hundred five (105) structures in Vernon are documented within the 100 year floodplain (according to comparisons of FEMA Q3 flood data with County 911 addressing overlays). Twelve (12) structures are within the 500 year floodplain. Of the 105 total structures, ten (10) are businesses. These figures may be higher or lower when official National Flood Insurance Program (NFDP) Flood Insurance Rate Maps (FIRM) are used in overlays.

- d. Wausau. Flooding in Wausau is caused by excessive rainfall events occurring within the town or in environs closely surrounding the town. No major river flows through the community. Reedy Creek is the largest water body (flowing from south to north just east of SR 77). Wausau is vulnerable to flooding primarily as a result of the presence of Reedy Creek and another tributary of Hard Labor Creek to the west of SR 77. Structures vulnerable to flooding are generally located too close to these two creek systems. For the most part, FIRM's accurately show flood-prone locations, although revisions may be needed in some areas during the scheduled update of the FIRM in 2008.

Because of the low intensity of urban development, stormwater runoff (parking lots, rooftops, cleared land/fill, etc.) is generally a minor problem

with regards to flooding. Some street flooding can occur during thunderstorms or extended rainy events (flooding unrelated to rising water in Holmes Creek).

Fourteen (14) structures in Wausau are documented within the 100 year floodplain, including one (1) business (according to comparisons of FEMA Q3 flood data with County 911 addressing overlays). Zero (0) structures are within the 500 year floodplain. These figures may be higher or lower when official National Flood Insurance Program (NFEP) Flood Insurance Rate Maps (FIRM) are used in overlays

- e. Chipley. Flooding in Chipley is caused by excessive rainfall events occurring within the city or in environs closely surrounding the city. No major river flows through the community. Approximately 233 acres (10% of the total land) in the city are subject to flooding. These areas occur mostly around the small, intermittent streams in the city. Most of these are not developed, as soils are not suitable for construction in this location. Some watercourses in the floodplains have been channelized to facilitate drainage to nearby creeks after rainfall.

One hundred seventeen (117) existing structures in Chipley are documented within the 100-year floodplain according to comparisons of FEMA Q3 flood data with County 911 addressing overlays. Of the one hundred seventeen structures, eleven (11) are businesses. Zero (0) structures are within the 500-year floodplain. These figures may be higher or lower when official National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM) is updated in 2008.

Some form of flooding occurs at least once per year in Chipley. Chipley is vulnerable to flooding in areas where swamps are present or were historically present prior to development. Additional flood-prone areas include portions of the City of Chipley near various drainage system ditches. Additionally, urban runoff can increase the likelihood of flooding in locations not otherwise prone to flooding. Development in filled wetlands in combination with storm water runoff from homes, streets, and commercial districts, has caused devastation to homes and a few businesses in Chipley. Mitigation purchases of properties as well as ditch cleaning efforts have solved some of these problems, but some homes continue to be victims of flooding.

For the most part, FIRM'S accurately show flood-prone locations, although revisions are needed in some locations, especially near 7<sup>th</sup> Avenue between South Boulevard and US 90. The following locations are notable for flooding in Chipley; 7<sup>th</sup> Avenue (between US 90 and South Boulevard; 4<sup>th</sup> Street near South Boulevard; and South Boulevard (about 1/3 mile west of the County office complexes).

In the mid-1990's, funding was secured by the city to correct some of the flooding problems. The city purchased some homes as a mitigation project. Flooding continues to be an occasional, but persistent issue in other areas.

Urban runoff is more pronounced in Chipley, than in any of the other municipalities in Washington County. Urban runoff (parking lots, rooftops, cleared land/fill, etc.) contributes to the cubic foot volume received by low-lying areas. This is particularly a concern in the 7<sup>th</sup> Street basin between South Boulevard and US 90.

The city's wastewater system is vulnerable to flood damage. It is located on the edge of a known floodplain, Alligator Creek. Flooding at the city's wastewater treatment plant or lift stations can result in wastewater backing up into homes or businesses. The scheduled update of the system over the next two to three years should alleviate some of these problems.

- f. Unincorporated County. Washington County's greatest vulnerability is from flooding. Major river courses and floodplains (including the Choctawhatchee River, Holmes Creek, thousands of swamps, and tributaries to these rivers and creeks) creates a myriad of possibilities for structural and infrastructure flooding and associated damages. Flooding near and around numerous lakes and sloughs is also a possibility.

One thousand three hundred twenty three (1,323) structures in the County are documented within the 100 year floodplain, including ninety two (92) businesses (according to comparisons of FEMA Q3 flood data with County 911 addressing overlays). Forty three (43) structures are within the 500 year floodplain. Of the 1,323 total structures, ninety-two (92) are businesses.

The County is vulnerable to flooding primarily as a result of:

- Construction that has occurred within or too close to rivers, swamps, or lakes.
- Construction that has occurred on fill that was once wetland
- Urbanization of rural areas, resulting in increased and unmanaged stormwater in localized situations.
- Rural flooding along unpaved (and sometimes paved) County roads and bridges.

The unknown factor throughout the County relating to potential damages is the number of structures that have already been constructed with mitigation in mind. For example, structures built before the adoption of the NFIP were permitted to build near ground level. With the adoption of the NFIP, structures must now build to at least the base flood elevation. The Black Bear permit tracking program utilized by the County building department should be tracking the flood elevation certificates that are requested. It is not clear that this is being done.

Mitigation of stormwater situations and urban flooding has been occurring through the requirement of stormwater retention pond construction. This has reduced the overall amount of unmanaged stormwater in urbanizing areas. Construction occurring before stormwater regulations were implemented, however, contributes to stormwater management problems whose cost is often borne by the County. Opportunities for mitigation exist for stormwater management issues. It is incumbent on the County to ensure that stormwater management problems and the costs associated must be borne by the developers.

The County also faces a flooding vulnerability along County maintained roadways. Unpaved roads are especially vulnerable to gulying and damages. Paved roads and bridges can also be damaged by high or excessive waters. Following wet seasons or tropical weather events, damage can cause the County to fall weeks or months behind in maintenance. Often, residents are stranded at or away from homes until road crews are able to rework roadways.

Vulnerability to flooding of residential *properties* (as opposed to structures, which are required to be elevated to base flood elevation) is increasing. This is due to development around lakes and near rivers and other water bodies. This development is being caused by a desire of local and especially out-of-town residents to purchase and live on waterfronts. Washington County's sand hill lakes region south of Wausau is a prime example of a location where development on waterfront is occurring.

Potential flood damages are being reduced not only through participation in the NFIP, but also through purchases of floodplain property. The Washington County Parks and Recreation Department has purchased a variety of lands to provide public access to waters. These parks are on both lakes and rivers. Additionally, the Northwest Florida Water Management District has purchased thousands of acres of floodplains, lakefront, and riverfront properties in the County. Large sections of the Choctawhatchee River floodplain, Holmes Creek floodplain below Vernon, and lakes and riverfront lands in the southeastern portions of the County (associated with the Econfina Creek and an upland aquifer recharge areas that supplies Bay County with potable surface waters) has been purchased by Water Management District. These lands cannot be developed except for recreational purposes, thus mitigating flood vulnerability in these areas.

4. Groundwater Resources. All of Washington County's water resources come from groundwater found in the Floridan aquifer system, which is one of the most productive aquifers in the world. This is a sediment/rock formation that is capable of holding and releasing water. It covers an area of about 100,000 square

miles and generally provides water for cities as far north as Savannah, Georgia and as far south as Miami, Florida. The Florida Aquifer is near the surface in Washington County. The water quality in the recharge area is of prime concern because of its direct connection to the Florida Aquifer. If the surface water is contaminated with pollutants, there is a quick and rapid downward water movement, which can be as much as hundreds of feet a day, quickly polluting ground water provided by the aquifer. This groundwater found in the aquifer is Washington County's sole source of water for consumption. In recent years this source has come under stress due to increasing population, depletion of water resources, and bad management practices. This subject will receive further discussion in the Identified Issues section of this report

5. Springs. Many beautiful springs exist in Washington County, but have the potential to be adversely impacted by human activities. They are probably the most unique and defining quality of the county and must be protected at all costs. Unfortunately, the County has not been in the position financially to purchase them nor have grants been applied for to acquire springs when available. Some springs have been carelessly used over the years, becoming the resting place for litter and debris. However, as the importance of these springs is accentuated, responsible land owners have taken the initiative to clean them up and protect them from further man-made intrusions. Springs are vulnerable to the activities that occur on the land around them as well as the increased use of their waters.

One of Washington County's most beautiful springs, Cypress Springs located north of Vernon on SR 79, was sold in 2003 to a water bottling plant. Due to concerns regarding the alteration of the springs in their natural state, withdrawal was limited to a well adjacent to the springs rather than the basin itself. The water is then transported to a county to the east of Washington County where it is bottled. There has been considerable land acquisitions by Northwest Florida Water Management with more planned for the future. The State has made it a priority to protect Florida's springs by funding research, monitoring of water quality, education and springs restoration. The County is committed to protecting the unique aspect of its natural springs. This subject will be discussed further in the Identified Issues section of this report.

A policy change is needed to mitigate contaminate runoff from disturbed land. If the vegetative buffer is increased and the vegetation itself is left intact, then runoff is less likely to infiltrate the surface water, and in the case of lands adjacent to natural springs, the groundwater as well.

Springs, Groundwater and Surface Water protection. The County needs to establish policies to ensure that springs, groundwater and surface water continue to be protected as well as they have been while massive development of the county has been a prospect, as it becomes a reality. This can be achieved through accurate identification and careful control of adjacent land use to sensitive aquatic resources.

*Recommendations:*

*Recommendation: Conservation of wetlands: The county should continue to work with the Water Management District to find land to convert to a “Conservation” land use designation. In order to identify these lands the Wetlands Map from the Future Land Use Map series should be overlapped with the Future Land Use Map and any land not yet converted to a “Conservation” land use designation should be identified as a candidate for future conversion.*

*Recommendation: Approximately one quarter of the total land in the county has a “Conservation” land use designation. This is especially significant as almost all of it follows the wetland boundaries in the county. This method of singling out a significant resource throughout the county and placing it under protection should continue. Any further conversion of land into conservation should follow this pattern.*

B. Floral and Fauna.

Floral. In Washington County, there are three different ecological communities as defined in 26 Ecological Communities of Florida (July 1989), by the Soil Conservation Society of America.

1. Longleaf Pine-Turkey Oak Hills. In the county, these areas are used for improved pastures, pine plantations, and some more intensive farming operations. Soil conditions are favorable for urban development. This community has not special protection status that is given to wetlands by federal and state laws.
2. Mixed Hardwood and Pine. These areas are important for flood control and watersheds, timber production, with little limitation to urban development. This community has no special protection status that is given to wetlands by federal and state laws.
3. Bottomland Hardwoods. These areas are usually wetlands and its perpetuation is due to the seasonal flooding. The area has high potential for timber production and is not conducive to urban-type development. The Bottomland Hardwoods community is important because it receives floodwaters, sediments, pollutants and nutrients and assimilates them into the system through redistribution. The associated riverine system is part of the dynamics of this community and acts as a transport mechanism of organic detritus to receiving estuaries. These communities are valuable recreation and scenic systems with high aesthetic quality and have special protection status that is given to wetlands by federal and state laws.

The Longleaf Pine-Turkey Oak Hills, and Mixed Hardwood and Pine, are more likely to become vulnerable to development than wetlands communities. These communities do not have the special protection status that is given to wetlands by federal and state laws.

Drought and the threat of wildfires is an ever present danger. Rainfall was below normal for 2006 and the year ended with about an 18 inch shortfall. This stresses the vegetative growth and heightens the danger of wildfire as dry conditions continue.

Fauna. There is a wide variety of wildlife within the County -- a wide variety of birds, ducks, deer, beaver, rabbit, coyote, turkey, boar, fox, to name a few. Some types are hunted during the appropriate hunting seasons, while others are the subject of photography and admiration by humans. Falling Waters State Park is listed as a site included in the Panhandle Section of the Great Florida Birding Trail, a collection of 445 sites throughout Florida selected for their excellent birdwatching and education opportunity. The Choctawhatchee River swamps located within Washington County has been named as perhaps the last bastion of the ivory-billed woodpecker Avian (*Campephilus principalis*), long believed to be extinct. Some authorities state that the evidence to support this presence of the Ivory-billed Woodpecker has probably been confused with another type woodpecker. However, according to other experts, there appears to be credible evidence that this once believed extinct species may be present in the Choctawhatchee swamps.

At the end of this section of the Evaluation and Appraisal Report is a chart entitled, "State and Federal Threatened, Endangered, and Other Species of Concern Likely to Occur in Washington County Florida," as published by U. S. Fish and Wildlife Service in April 2007. This lists includes both floral and fauna species.

*Recommended: It is recommended that this list be included in the EAR-based amendment to the Conservation Element of the Plan.*

C. Air Quality.

Overall, the air quality of the County is excellent. During periods of drought, there are some problems around the large sand pit located in the southeastern section of the County, but usually a water truck is dispatched and the problem subsides. Forest fires from as far away as Valdosta, Georgia was particularly noticeable in the past year, but that was temporary and did not present any problems of a long-term nature. There is no major air polluters located in Washington County.

D. Commercially Valuable Materials.

There are three major minerals in Washington County, with some commercial value:

1. Clay. At present, there are no commercial clay mines in Washington County, but there are some clay pits. The clays found there are useful for making brick, sewer pipe,
2. Limestone. Limestone occurs at or near the surface in Washington County in the Marianna Lowlands area. The presence of limestone in the County has been known for many years, at the present time, there are no commercial limestone operations in Washington County.

3. Sand. There are approximately 15 active sand pits in the county with approximately 10 having been approved during the planning period using the special exception process. The inventory list of pits within the Comprehensive Plan will need to be updated. The largest pit is the Sikes Pit at SR 77 and SR 20: a plan to enlarge the pit has been denied by the County due its close proximity to residential development. Pits approved during the planning period should be added to the list of pits for the County.

E. Soil Erosion.

Two types of land erosion can be encountered in the County. This includes water erosion on vulnerable sloping soils and a slight possibility of sinkholes. Rainfall events combined with surface disturbances (lot clearing, vegetation and soil cover removal, trenching, etc.) are the primary causes of soil erosion. This can lead to sedimentation in drainage ditches, small streams, or swamps, which could increase the coverage of floods. Sedimentation barriers (hay bales, plastic silt fencing) used at development sites are an effective means of control used in the County.

The best available data with regards to soil erosion potential is the 1965 Soil Survey of Washington County. The information is not municipality-specific, however 34% of the soils within Washington County possess characteristics of "Highly Erodable (HE)" or "Potentially Highly Erodable (PEH)" soil types. Agricultural operations are the most vulnerable to erosion. Erosion can expose foundations, undermine roadways and sidewalks and result in cracks. In addition, vulnerable structures include those situated on slopes, subject to high water runoff, and those on cleared lots with little surface vegetation.

According to the Natural Resources Conservation Service (NRCS) Average Annual Soil Erosion by Water and Wind revised in 2000 on croplands and Conservation Program lands, erosion due to water in Washington County, including municipalities, was estimated at 3-5 tons/acre per year primarily located in the western river valley and the northern half of the county. Less than 1 ton/acre per year is attributable to erosion by wind.

Estimates of potential loss to existing and future structures are difficult to gauge. A straight application of the countywide estimate of 34% chance of encountering "Potential Highly Erodable" or "Highly Erodable" soils applied to Washington County's 2003 value of real property of \$243,402,687 yields \$82,756,914 of property potentially vulnerable to soil erosion to some degree. Application of a 4.23% increase in assessed values annually yields a potential future exposure of \$110,599,573 by the year 2010. Total loss to the structure is possible, but not likely. A more realistic planning assumption would be that 10% of the exposed properties experience damage that actually impacts the structure to some degree. Such an assumption reveals an estimated future loss of \$11,059,957 by 2010.

F. Sinkholes.

Two types of sinkhole districts exist in the County. The most obvious district includes the Sand Hill Lakes Region. This region is found across a geological formation called "Grand Ridge." Grand Ridge is located across the southern half of the County. The ridge consists of a large

amount of sandy soils on top of limestone. This is the perfect combination for deep sinkhole structures. When underground limestone becomes so eroded by the movement of water it collapses, the sandy overburden collapses into a fallen cavern, creating a sinkhole. The Sand Hill Lakes region contains hundreds of isolated drainage basins formed by the karst activity. This is considered to be a young karst landscape. Some sinkholes are filled with water, forming small and large lakes. Others are simply depressions in the landscape. Others form swamps. Mature systems have developed drainage patterns where streams lead from lake to lake, and eventually to rivers.

A second, more mature or even old age sinkhole district lies in the northern half of the County. This area is characterized by a more defined (but broad) drainage pattern. Old age sinkholes have been filled with sediments and now contain palustrine swamps. Locally, these swamps are called "bayheads". Springs can occur in either of these districts. Often, limestone formations are visible at the surface near the springs.

The most likely area of sinkhole development would be the Sand Hill Lakes district. A large development has been constructed over the last thirty years (Sunny Hills). Additional development is occurring in the area. Some 38,000 acres have been purchased in the Sand Hill Lakes region (for water management purposes, not for sinkhole mitigation).

Although it is not without possibility, the likelihood of active sinkholes developing in the County is considered to be moderate or low. There are no known incidents of a home or business being consumed by a sinkhole in Washington County.

The best available data from the Florida Geological Survey Sinkhole Database indicates that only a few small sinkholes have occurred (usually ten to twenty foot width). It also indicates that there are no recent active sinkholes in the County. This data shows that no homes have been impacted, although roadways have been impacted. Despite this, in January 2005, an active collapse sinkhole approximately 25 feet in diameter and 20 to 22 feet deep opened up within fifty feet of a residence near Hwy 79 close to the Town of Ebro. One has also become active in the Crystal Lake area. There is speculation however, that the installation of a water well nearby and the subsequent draining of water, may have contributed to the sinkhole collapse.

Washington County relies primarily on individual water wells as opposed to community water. The drilling activities associated with installing these individual water wells may serve to increase the occurrence of sinkholes in Washington County, and the vulnerability of the nearby structures. According to MEMPHIS, out of a potential "Low", "Medium", "High", "Very High" or "Extremely High" sinkhole risk potential, the unincorporated Washington County has locations lying within each hazard potential zone, except "Extremely High". MEMPHIS indicates 1894 structures are at low risk for sinkholes, 4725 are at "Medium" risk, 7 are at "high" risk and 6 are at "Very High" risk of sinkholes. All critical facilities are within the hazard zone. According to MEMPHIS an estimated \$288.85 million dollars of exposure, based on the 2000 Census data, are within the "Low" sinkhole risk area. An estimated 2.45 million dollars of potential future exposure are within the "Very High" category, \$1.02 billion dollars within the "Medium" sinkhole risk area, \$1.85 million dollars of exposure are within the "High" sinkhole risk area and an estimated \$288.85 million dollars of exposure, based on the 2000 Census data, are within the "Low" sinkhole risk area.

## G. Drought.

Drought, or below average amounts of annual rainfall, is particularly devastating to farmers, dairies, poultry operations, hay production, water wells, and the local economy. Closely associated with drought are increased wildfire risks and the impact to the silviculture economy of the county's private land owners. Irrigation of lawns can occasionally cause lower water pressure on public water systems, thus increasing the risk to firefighter's combating urban or wild land fires. Drought can also cause abnormal animal movement as wildlife begins to seek water sources near areas of human population and development. Overall, all residents, businesses, and governmental operations are vulnerable to drought. The greatest risks are considered to be in the agricultural community, and to those relying on private wells or public water systems as drinking water sources. The county anticipates the need for outside financial or resource assistance in during severe droughts especially when groundwater levels are affected and individual residential wells cannot provide sufficient water to accommodate the needs of households.

*Recommendation: The County does not have a water conservation plan. The following policy should be added in the EAR-based amendments:*

*Policy: \_\_\_\_\_: By the year 2020, the County will develop water conservation policies that will serve to relieve drought conditions by the inclusion of water reuse plans for reuse of gray water generated by residential, commercial, government, and school buildings.*

*Policy: \_\_\_\_\_: It will be the policy of the County to incorporate into the Land Development Code to the extent possible, the use of native drought tolerant vegetation as recommended in the Florida Yards and Landscaping program to reduce the need for water irrigation.*

## H. Wildfires.

Wildfires are of great concern in Washington County. An average of 75+ grass or woods fires occurs in any given year in Washington County. Lightning causes many of the natural wildfires while other wildfires in the County are human-induced fires. This includes purposely-caused fire (arson) or accidental causes (escaping trash fires, cigarettes, sparks from passing railcars, motor vehicle fires on roadsides that spread to woodlands, or house fires that expand to wild lands).

Soils and plant communities contribute greatly to the potential for a fire in the sandhills region of the county, but fires may occur at practically any location. Although not the only identifying characteristic to identify wildfire-vulnerable areas, those locations with "Lakeland Fine Sand" (as shown in agricultural soil guides for the county) generally have fire dependent plant species growing in them. The Sunny Hills subdivision and surrounding environs, constructed in sand hills where natural vegetation is conditioned to burn and regenerate, is of particular concern. In addition, severe drought can create conditions favorable to swamp land fires.

All forestland, open areas, and rural interfaces of the county and municipalities are vulnerable to wildfires. According to the Florida Department of Forestry, approximately 85% to 90% of the land in the county is open forestland and most locations outside of the floodplains and swamplands consist of natural vegetation historically related to the Longleaf Pine or upland Southeastern forests (a fire dependent ecology). These lands are particularly vulnerable during periods of drought.

According to the Washington County Comprehensive Emergency Management Plan (May 5, 2003) Washington County averages over 75 grass and woods fires per year in unincorporated areas. However, according to the Florida Department of Forestry's "Significant Fires in Florida List", although numerous small grass fires have occurred, no significant wildfires have taken place in Washington County or the surrounding municipalities between the years 1981 to 2005. As more development occurs in rural, unincorporated areas, the potential for costly damage due to wildfire increases.

#### H. General Geology.

Washington County lies within the East Gulf Coastal Plain, a subdivision of the Coastal Plain. As noted already, Washington County is divided into the two physiographic regions of the Marianna Lowlands and the Gulf Coast Lowlands. Washington County has a mostly well-defined branching or dendrite drainage system. The Choctawhatchee River flows to the south through the center of the County, and the larger creeks empty into it. The drainage system becomes karsts in the Sand Hills Lakes region.

- a. The Gulf Coastal lowlands are a series of coast-parallel plains on terraces rising from the coast to successively levels in a landward direction. These terraces were formed during the Pleistocene Epoch or "Great Ice Age," when world-wide fluctuations of sea level were tied in with the growth and melting of ice caps. Rich red clay supports the growth of pine forest and hardwood hammocks. Vernon and Ebro are located in the Gulf Coast Lowlands, in the southern and western areas of the County.
- b. The Marianna lowlands occupy most of central and eastern Washington County and are as a result of steam erosion and solution activity. Limestone is near the surface of the ground and consequently, the area is one of karst development with many sinkholes. Many broad, shallow basins are present, some of which are filled with water, forming lakes. The Marianna Lowlands cover most of the county where Chipley and Wausau are located. Peanuts and soybeans are the main cultivated crop.
- c. Drainage. Washington County has a mostly well-defined branching or dendritic drainage system. The Choctawhatchee River flows to the south through the center of the County, and the larger creeks empty into it. The drainage system becomes karst in the Sand Hills Lakes region.

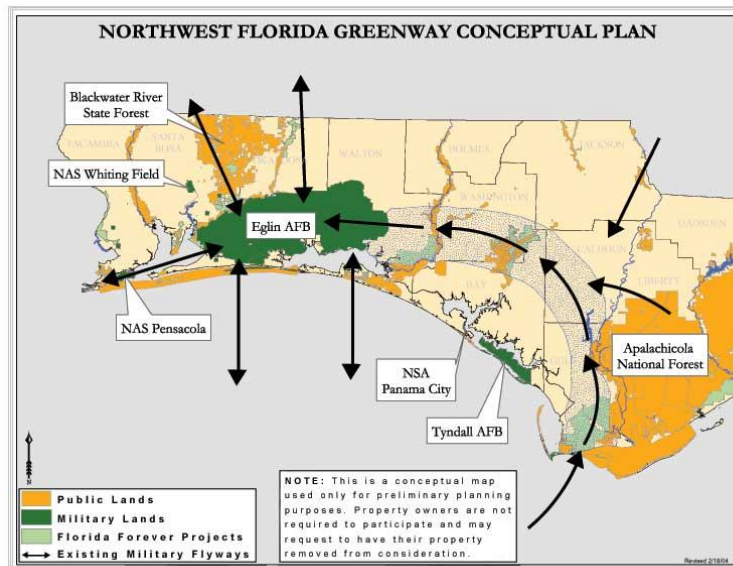
#### I. Vulnerability.

Vulnerability to the environment comes from many threats – wildfire, flood, wastewater treatment facilities, removal of vegetation, careless disposal of litter, junk automobiles, and development. These will be discussed further in the Identified Issues section of this report.

## J. Northwest Florida Greenway.

A large portion of Washington County lies within the Northwest Florida Greenway. Created in 2003, this is a proposed 100-mile strip miles protected corridor that connects Eglin Air Force Base and the Apalachicola National Forest. The Florida lands will be conserved through purchase from willing property owners and the acquisition of development rights using conservation easements. Conservation easements allow property owners and communities to continue to derive economic benefit from the land while protecting it from development. Land swaps and environmental mitigation may also be an effective means to preserve property. Not only will the diverse community of wildlife and plants be preserved, but this strip will preserve and protected land and airspace will also allow continued enjoyment of the land for recreation such as hunting, fishing, hiking, paddling, and nature study.

According to the Florida Nature Conservancy, The County is home to a plentiful variety of native animals such as deer, wild hog, The Northwest Florida Greenway is an unprecedented partnership of military, government and nonprofit organizations that will conserve critical ecosystems in one of the most biologically diverse regions in the United States, enhance the Panhandle's economy and help protect the military mission in northwest Florida.



## IV. GOALS, OBJECTIVES AND POLICIES FOR WASHINGTON COUNTY AND THE MUNICIPALITIES OF CARYVILLE, EBRO, VERNON AND WAUSAU

All goals, objectives and policies stated apply to all of the local governments mentioned in the title unless otherwise stated.

The following assessment of the Conservation Element is presented to analyze the Element as it relates to the major issues listed in the Identified Issues section of this EAR, as well as to assess the overall performance of the Element. Specific attention has been placed on Identified Issue 6, 8 and 9. These Identified Issues address the protection of open space, the revision of the

Comprehensive Plan and the Land Development Code and the Public School Facilities Element. Objective 3, below, called for policies to protect the areas within the 100-Year Floodplain. This Element details many Objectives to secure more protection of open space throughout the County. Each Objective of this Element has been assessed to determine if further revision is necessary for both the Comprehensive Plan and the Land Development Code.

**GOAL:** Preserve, enhance, and maintain the natural resources and environmental amenities of Washington County to a state of quality which is the highest possible attainable.

**Objective 1:** Throughout the planning period, the County and municipalities shall maintain air quality within their jurisdiction in conformance with State and federal air quality guidelines.

*Complaints on air quality during the planning period have been the result of extremely dry conditions within the County and the overall lack of rain during prolonged periods of time. The majority of the complaints come from residents that live along the numerous mile of County graded roads. While the County has no control over these conditions, during extremely dry periods attempts are made to temporarily alleviate the conditions with the use of water trucks. Placement of white rock on some of the roads to control flooding during periodic rains has exacerbated the problem and this practice has been discontinued. The main source of complaints has been from the large borrow pit located in the southeastern section of the County near the Bay/Washington county line. While the developer has taken some steps, it has not been sufficient to eliminate the complaints during the times that conditions worsen. A request to expand the pit in the last year has been denied, in part due to the air quality affecting the surrounding residential development around Crystal Lake.*

Policy 1-1: Land Development Regulations (LDRs) will continue buffer requirements between adjacent incompatible uses. Specifically, vegetated buffers will be required between adjacent incompatible uses. Specifically, vegetated buffers will be required between future industrial and/or commercial land uses and residential land uses.

*This objective is being met by the County. Further discussion follows in the Identified Issues Section.*

Policy 1-2: The County and municipalities shall continue to reduce the potential for automobile emissions pollution by providing for developments such as PUDs in the adopted LDRs.

*This objective is being met by the County.*

Policy 1-3: The County and municipalities shall promote the use of bike and pedestrian paths in all new development (especially PUDs) to help reduce automobile pollution.

*This objective is being met by the County.*

Policy 1-4: In order to maintain air quality, all new developments with the potential to emit pollutants into the air will be required to obtain any and all necessary federal and state permits prior to authorization of a development permit by Washington County and municipalities.

*This objective is being met by the County.*

Objective 2: Throughout the planning period, the County and municipalities will conserve, appropriately use, and protect the quality, quantity, and natural functions of current and projected water sources and waters that flow into estuarine water.

*This objective is being met by the County. The only body of water that flows into the Gulf is the Choctawhatchee River.*

Policy 2-1: The County and municipalities shall continue implementing the comprehensive stormwater management ordinance consistent with 17-25 and 17-302, F.A.C. establishing:

- a. 25-foot waterline buffer zones adjacent to wetlands and surface water bodies to preserve natural vegetation which provides filtration of stormwater runoff;

*This policy is being met by the County; however, the County should look at increasing this buffer to 50 feet. This will be discussed further in the Identified Issues section of this report.*

- b. A 50-foot development setback from the ordinary high water line of water bodies;

*This policy is being met by the County; however, the County needs to consider increasing this buffer to 100 feet. This will be discussed further in the Identified Issues section of this report.*

- c. general design and construction standards for onsite stormwater management systems for new development (consistent with State and federal rules and regulations) to ensure that post-development runoff rates, volumes and pollutant loads do not exceed pre-development conditions.

*Recommendation: The County should continue to work with the Water Management District to find land to convert to a "Conservation" land use designation. In order to identify these lands the Wetlands Map from the Future Land Use Map series should be overlapped with the Future Land Use Map and any land not yet converted to a "Conservation" land use designation should be identified as a candidate for future conversion. The following policy should be added before the end of the 2009 year.*

*Policy 2-2: The County shall continue working with the Northwest Florida Water Management District to place wetlands into a "Conservation" Land Use Designation.*

*This policy is being met by the County. Development plans submitted for permits now require*

*that a stormwater plan be submitted for all commercial development. Currently, there is no requirement for a plan for individual residential building parcels, but a site visit is required by the building inspector prior to issuance of a building permit. A commercial site visit is waived if elevated drawings are submitted by a certified engineer. While a topography is not required on minor subdivisions, the need for one as determined by either the County planner or Engineer should be adopted as part of the Land Development Code.*

- f. best management practices for agricultural and silvicultural land uses, consistent with State and federal recommended standards, to reduce pesticide and fertilizer runoff and soil erosion.

*This policy is being met by the County; however, due to the increase in development pressures, this policy needs to be examined for sufficiency. This will be further discussed in the Issues section of this report.*

Policy 2-2: The municipalities with central sewer systems shall continue to comply with all effluent standards in the operation of their wastewater treatment plants.

*Chiplew, Vernon, and Aqua Utilities in Sunny Hills operate central sewer systems. Vernon's upgrade is complete with no further affluent emissions into Holmes Creek. Chiplew's upgrade has been engineered and funded. The results from Aqua Utilities are not so stellar and it is still not clear what the expansion status is at the current time.*

*This policy will be discussed in the Identified Issues section of this report.*

Policy 2-3: The County and municipalities shall coordinate with the NFWFMD and shall adopt and/or amend LDR's which serve to implement SWIM program recommendations.

*This policy is being met by the County.*

**Objective 3:** The County and municipalities shall protect the natural functions of areas within the 100-year floodplain.

*This objective is being met by the County. A revised Flood Ordinance for Washington County has been adopted by the County that incorporates all federal and state requirements.*

Policy 3-1: The County and municipalities shall continue to enforce minimum FEMA construction standards for the 100 year floodplain (as contained in presently adopted Floodplain Management Ordinances). In floodplain areas where base flood elevations have not be established, the County and municipalities require development setbacks from stream banks of 50-feet) or 5 times the width of the stream at to the top of the bank width, whichever is greater in accordance with the LDCs of Washington County. *When flood zones are evident, a flood elevation certificate is required to be submitted before a permit is issued.*

*This objective is being met by the County. This will be further discussed in the Identified Issues of this report, specifically with regard to increase of buffer.*

Policy 3-2: The County and municipalities shall continue to enforce Land Development Regulations which include provisions which establish and implement construction standards in accordance with the Federal Emergency Management Agency (FEMA) guidelines at a minimum.

*This objective is being met by the County.*

Policy 3-3: The County shall identify and recommend to the State and the NFWFMD floodplains and/or water bodies that would warrant acquisition under conservation, preservation, and recreation use acquisition grant programs.

*This objective is being met by the County. However, the County needs to take a more proactive role in grant acquisition programs to be seek funds for purchase of areas similar to Becton Springs located on SR 79 in the central part of the County.*

Policy 3-4: The County and municipalities hereby designate areas that fall within the 100 year floodplain as environmentally sensitive lands.

This has not been actively pursued by the County. The Planning Commission needs to look at these areas and make the necessary changes as allowed by the Comprehensive Plan and the Land Development Code.

Policy 3-5: In accordance with regional policy, the County will prohibit all construction, except piers, docks, and landscaping within 100 feet of mean high water mark of Econfina Creek. The County will amend the LDRs to include this provision within one year.

*This policy is being met by the County. This amendment to the Land Development Code has been accomplished. However, the issue of setbacks for this waterway will be further discussed in the Identified Issues section of this report.*

Objective 4: The natural functions of the County's wetlands shall be conserved and protected from physical and hydrologic alterations.

*This objective is being met by the County.*

Policy 4-1: The County shall continue to implement Land Development Regulations to ensure that:

- a. all wetlands are designated within the conservation land use district;

*The County needs to review this policy and ensure that these areas are properly designated. This will be further discussed in the Identified Issues section of this report.*

- b. silviculture on publicly managed lands will be restricted to non-wetland areas;

*There is currently no method in place to ensure that the County is award of silviculture harvest within these areas. This will be further discussed in the Identified Issues section of this report.*

- c. septic tank systems must be setback at least 75 feet from the wetland's edge;

*This policy is being met by the County; however, the need to increase this setback will be discussed in the Identified Issues section of this report.*

- e. site plans for new development will identify the location and extent of wetlands located on the property;

*This policy is being met by the County. Each development permit is reviewed by the County Planning Office to ensure that this policy is met. All plats are required to have wetlands, conservation, and flood areas clearly defined.*

- f. site plans will provide measures to assure that normal flows and quality of water in wetlands will be maintained after completion of development impacting wetlands.

*This policy is being met by the County. Each development permit is reviewed by the County Planning Office and County Engineer to ensure that this policy is met.*

- g. Such measures as culverting will be required where alteration of wetlands is necessary in order to allow reasonable use of property,

*This policy is being met by the County. Plans are reviewed by the County Engineer and the Public Works Department to ensure that no unnecessary alteration occurs.*

- h. either the restoration of the disturbed wetlands will be provided or additional wetlands will be created to mitigate any wetland destruction.

*The need for mitigation within the County has been minimal. The County Engineer reviews these requests and makes a recommendation as to the appropriateness of the request. Mitigation has usually involved County road paving projects.*

Policy 4-2: The County shall cooperate with the FDEP, NFWFMD, and the Army Corps of Engineers to improve compliance with the dredge and fill State and federal permitting system process.

*This policy is being met by the County.*

Policy 4-3: The County and municipalities hereby designate wetlands, as depicted on the Wetlands Map in the Future Land Use Map series, as environmentally sensitive lands.

*The County needs to reexamine this policy to ensure that this is consistently being accomplished.*

*Recommendation: Change this policy to include the following text.*

*Policy 4-3: The County and municipalities hereby designate wetlands, as depicted on the Wetlands Map in the Future Land Use Map series, as environmentally sensitive lands and will seek opportunities with the North West Florida Water Management District (NFWFMD) to have these wetlands converted to a “Conservation” land use designation where they have not yet done so.*

Objective 5: Throughout the planning period, the County and municipalities shall conserve the water supply and protect the quantity and quality of the current water source and any new water source.

*There is no water conservation plan in the County and the West Florida Water Management Water District’s Water Plan for 2006 does not require a water supply plan. The report concludes that demands now and in the future are within the capacity of the Floridan Aquifer. Additionally, Holmes, Jackson, Calhoun, and Liberty County, also included in District IV, are not required to have a water supply plan.*

*Generally, in agreement with NFWFMD, the Board has taken the position in the past that a water conservation program is not necessary. However, the extremely long-lasting drought conditions serve as a cause for the County and municipalities to revisit the vulnerability of very dry conditions. The greatest risks are considered to be in the agricultural community and to those relying on private wells as a drinking water source or for public water systems. The county anticipates the need for outside financial or resource assistance in some severe droughts, and potential substantial help in all major drought events. This will be further discussed in the Identified Issues of this report.*

Policy 5-1: The County and municipalities shall continue to implement the water conservation ordinance which prohibits agricultural irrigation (other than drip irrigation) from 10:00 AM to 6:00 PM during times of drought, and shall keep the public informed of these restrictions.

*The reference to the ordinance is confusing. The planning office has not been able to locate this ordinance, but conservation is covered in the Land Development Code. The Code states, “Silviculture and agricultural uses shall be required to use best management practices pursuant to Silviculture: Best Management Practices Manual (State of Florida, Division of Forestry, June 1989) as may be revised, and to prevent drainage and pollution problems. This objective is being met by the County. There are no large farms that irrigate in Washington County.*

Policy 5-2: The County and municipalities shall continue to adhere to any emergency water conservation measures imposed by the Northwest Florida Water Management District.

*This objective is being met by the County.*

Policy 5-3: The County and municipalities shall require that all new construction and all remodeling activities utilize fixtures conforming to the following schedule of maximum water usage, thereby conserving the potable water resources.

Water closets, tank type	3.5 gallons/flush
Water closets, flushometer or flush valve	3.5 gallons/flush
Urinals, tank type	3.5 gallons/flush
Urinals, flushometer or flush valve	3.5 gallons/flush
Showerhead	3.5 gallons/ minute
Lavatory and sink faucets	2.5 gallons/ minute

*Pursuant to current Florida plumbing codes, the above requirements need to be updated as follows:*

Maximum Flow Rates and Consumption for Plumbing Fixtures and Fixture Fittings	
PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY"
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public, (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head"	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per (flushing cycle
Water closet	1 .6 gallons per flushing cycle
For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 <i>Urn</i> 1 pound per square inch = 6.895 kPa. a. A hand-held shower spray is a shower head. b. Consumption tolerances shall he determined from referenced standards.	
Source: Florida Building Code – Plumbing (as provided by the Washington County Building Department.	

Policy 5-5: The County and municipalities shall comply with any Northwest Florida Water Management District mandates concerning reuse of water.

*This objective is being met by the County.* Vernon has a spray field that is operational and Chipley has engineered and funded their new spray fields. Both of these conform to all state and federal regulations.

Policy 5-6: The County and municipalities shall allow septic tanks only in areas where public sewer is unavailable and only upon issuance of a Washington County Health Department permit.

*This objective is being met by the County. This will be further discussed in the Identified Issues section of this report.*

Policy 5-7: The County and municipalities shall continue to implement Land Development

Regulations (including wellhead protection zones) which include provisions for the protection of existing and future public water wells.

*This objective is being met by the County.*

**Objective 6:** Mining activities shall be regulated so that they do not adversely affect the quality of air, groundwater, surface water, land, or wildlife.

*This objective is being met by the County. Mines and borrow pits are allowed in Agriculture/Silviculture areas and are subject to the special exception approval process.*

Policy 6-1: The County and municipalities shall prohibit any mining activities within ecologically sensitive areas (e.g., wetlands or floodplains), except those associated with providing stormwater retention.

*This objective is being met by the County.*

Policy 6-2: All mining operations shall require site specific approval by the County.

*This objective is being met by the County.*

Policy 6-3: Phasing of extraction activities shall be used as a device to assure that only small areas are affected by such activities at one time.

*This objective is being met by the County.*

Policy 6-4: Buffers shall be required to be established and maintained between mining activities and adjacent existing and future uses to achieve an aesthetically pleasing landscape compatible with those land uses.

*This objective is being met by the County. This issue will be discussed further in the Identified Issues section of this report.*

Policy 6-5: A reclamation plan shall be submitted and approved by the County as part of the development review process before mining activities are permitted.

*There is no follow up on closed mines to see if reclamation plan has been put into operation. Due to the quick growth of pines in the County, some of the old pits have been reclaimed by a natural process.*

Policy 6-6: Before mining operations may be approved, the County shall require that a fee and/or bond be posted in amounts sufficient to compensate for any degradation of County maintained roadways.

*This has not been consistently done; the deficiency needs to be addressed within the planning process with the County requiring fees or bonds to protect the transportation infrastructure.*

*However, there is an informal process of notifying the mine owner that damage is being done to the roads by either ceasing use of the road or reimbursement to repair the roadway.*

Objective 7: The County shall, working with the Natural Resource Conservation Service, reduce the rate of soil erosion caused by agriculture, land development and other human activities to less than 5 tons per acre in all hydrologic units by 2005.

Policy 7-1: The County shall consider topographic, hydrologic and vegetative cover factors on the development review process of proposed developments.

*This policy is being met by the County.*

Policy 7-2: The County shall prohibit the use of off-road vehicles in areas that are susceptible to erosion.

*Due to political pressure from the public, there is no ordinance currently in place that specifically addresses this issue. However, in cooperation with the appropriate law enforcement agencies, the County does make every effort to ensure that this policy is enforced. This will be further discussed in the Identified Issues section of this report. During drought, damage is being done to exposed lake bottoms, and while State statues make it is unlawful to destroy the bottoms of these lakes, it is hard for law enforcement to enforce.*

Policy 7-3: The County shall assist the Natural Resource Conservation Commission in those activities (i.e. Best Management Practices) directed at minimizing soil erosion and protecting the natural functions of existing soils.

*This objective is being met by the County.*

Objective 8: The County and municipalities shall conserve and protect soils, native vegetative communities, forest lands, wildlife, and wildlife habitats from adverse effects, with emphasis on threatened and endangered species, and species of special concern.

*This objective is being met by the County. Environmental Assessments are required on developments larger than 10 acres and where any central water or wastewater treatment facility is placed. Areas where roads are constructed are also required to have the assessments performed. This matter will be further discussed in the Identified Issues of this report.*

Policy 8-1: The County shall continue to enforce Land Development Regulations which include provisions to protect ecologically sensitive communities in Washington County, specifically, the Longleaf Pine Community, by

- a. discouraging the fragmentation of large community associations during site development review

*This objective is being met by the County.*

- b. requiring buffering of sensitive ecological areas, such as establishing a 100-foot natural vegetative buffer around major damaged areas,
- c. allowing clustering of development on portions of a site which are not environmentally sensitive, in order to protect sensitive areas from the effects of development, and

*This objective is being met by the County.*

- d. restricting silviculture on publicly managed areas to non-wetland areas only on accordance with the Policies of the Future Land Use Element to 25 foot waterline buffer.

*This policy is being met by the County. However, it will be discussed further in the Identified Issues of this report.*

Policy 8-3: The County shall assist, through provisions in its LDR's in application of and compliance with all State and federal regulations which pertain to endangered and rare species.

*This policy is being met by the County. This will be further discussed in the Identified Issues section of this report. When required, environmental and endangered species studies are consistently required from developers.*

Policy 8-4: The County shall consult with the Florida Fish and Wildlife Conservation Commission prior to the issuance of a land use approval that would result on an adverse impact to any endangered are species, in order to identify possible mitigation measures.

*This policy is being met by the County.*

Policy 8-5: The County shall maintain a listing of the believed specific locations of endangered/threatened species developed by the Florida Natural Areas Inventory (source: Nature Conservancy), and shall consult this listing before issuing any development permit.

*While the County is aware of these areas, there is no formal process in place to catalogue these areas as they are identified by developers' endangered species and environmental assessments. The Planning Office, working in concert with the Administrative Offices, should collect this information and request the sites be overlaid on the county planning maps.*

Policy 8-6: When one or more of a threatened or endangered species is found on a development site, development activities which may cause harm to the species shall not be allowed until a management plan has been prepared and which once implemented, would result in no net loss of individuals of endangered or threatened species.

*This policy is being met by the County.*

Policy 8-7: Maximum allowable density ratios established in the Future Land use Element of

the Plan for Silviculture areas shall preclude intense development of forest lands, and the associated disturbance of large community associations.

*This objective is being met by the County. However, concerns regarding the protection of these areas will addressed in the Identified Issues of this report.*

Policy 8-8: Management of mature upland forests consisting of pinelands, sandhills, and hardwoods exceeding sixty (60) years of age shall include the following:

- a. avoidance of large block cutting;
- b. habitat needs of wildlife that requires mature forests;
- c. establishment of mature open stands via the selection of effective stand rotation and stocking rates;
- d. site preparation techniques that minimize soil disturbances (i.e. roller chopping and burning);
- e. the minimization of impacts to important habitat features such as stumps, snags, dens, and burrows;
- f. the use of prescribed fire on pineland sites in order to reduce hardwood encroachment and to rejuvenate understory vegetation.

*There is no method in place that will address whether these policies are being carried out. The general consensus of the County has been one of “do not go there.” While the Planning Office and Code Enforcement Office may be identified of such cutting, it is too late at that point to prevent the damage. The issue will be further discussed in the Identified Issues of this report.*

Objective 9: The County shall continue to promote the protection of natural reservations and will implement policies which will lessen any adverse effects which adjacent future developments might have on the reserved conservation areas.

*This objective is being met by the County. However, renewed efforts need to revise the methods used to protect these areas. This matter will be discussed further in the Identified Issues section of this report.*

Policy 9-1: The County shall cooperate with the Fish and Wildlife Conservation Commission, the NFWFMD, and the State Division of Parks and Recreation to continue to implement their management programs in Falling Waters State Recreation Area, Pine Log State Forest, and Choctawhatchee Water Management Area, and the NFWFMD/Rosewood Resources Wildlife Management Area.

*This objective is being met by the County.*

Policy 9-2: The County shall coordinate with the State Division of Parks and Recreation, the NFWFMD, and the Fish and Wildlife Conservation Commission to review developments that are adjacent to any of the major managed areas to assess possible adverse effects.

*This objective is being met by the County.*

Policy 9-3: The County shall continue to enforce in its LDR's the requirement for a 100 foot wide buffer area surrounding major managed area. Such buffer shall be retained in a natural condition. These regulations will include the designation of allowable adjacent development to lessen adverse effects from incompatible land uses.

*This objective is being met by the County. This policy will be further discussed in the Identified Issues section of this report.*

Objective 10: Throughout the planning period, the County and municipalities shall continue to prohibit the disposal of hazardous wastes into the public sewer system, canals, ditches and sanitary landfills, or any other unacceptable method of disposal of hazardous waste, and will promote acceptable hazardous waste disposal.

*This objective is being met by the County. However, lack of enforcement tools can cause this to continue unabated. While DEP will often respond to these types of complaints, it is often left up to Washington County Code Enforcement to enforce without the proper leverage and support that is required to be effective.*

Policy 10-1: Through intergovernmental coordination, the County and municipalities shall continue to hold hazardous waste amnesty days of at least once per year.

*This objective is being met by the County. Amnesty days are conducted twice a year – once in the spring and once in the fall. This has proved to be a very effective program for the county and should be continued and fully funded.*

Policy 10-2: The general public shall be informed of the dangers of hazardous waste materials and methods of safe disposal through annual newspaper notices.

*This objective is being met by the County.*

Policy 10-3: The County has, by accepting the 1985 Hazardous Waste Management Assessment, designated one or more hazardous waste transfer/temporary storage facilities.

*This objective is being met by the County.*

Policy 10-4: The County shall seek funding as needed from FDEP's local Hazardous Waste Collection Grants Program to manage hazardous wastes.

*This objective is being met by the county.*

Policy 10-5: The County Emergency Management Department shall continue to survey and assess the waste generation and management techniques of 20 percent of the hazardous waste generators on the County Master List annually. In this regard, all small quantity generators will be assessed once every 5 years.

*This objective is being met by the County. The West Florida Regional Planning Council is under contract with the State of Florida to do SQG in Washington County. A percentage the businesses are monitored every year with the master list of generators being maintained by the Planning Council.*

**Objective 11:** The County shall protect the natural functions of existing fisheries, rivers, lakes, and freshwater shores.

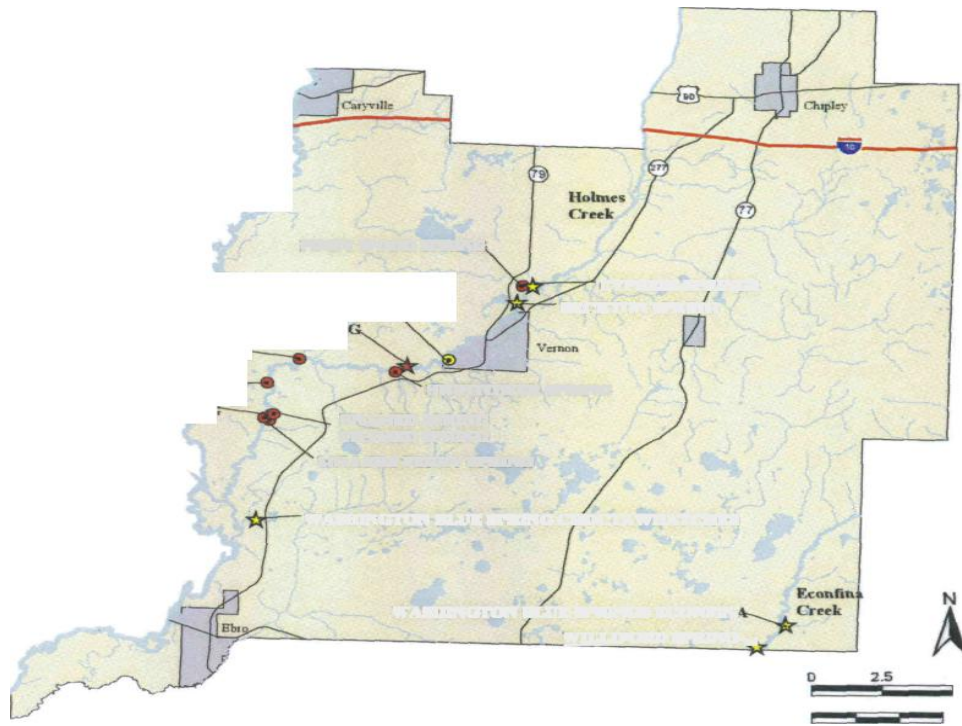
*This objective is being met by the County. A footnote at this point; the County was the recipient of a grant from the National Oceanic and Atmospheric Administration (NOAA), that resulted in an active restocking program. Efforts along this line of protecting and preserving the natural resources will continue into the future.*

Policy 11-1: The County will continue to enforce the stormwater management ordinance which incorporates a 25 foot waterline buffer zone.

*This objective is being met by the County. However, this policy will be further discussed in the Identified Issues section of this report.*

Policy 11-2: The County will continue to enforce Land Development Regulations which address the control of erosion, sedimentation, and runoff caused by new development.

*This objective is being met by the County. No development permits are issued through the County that has not been reviewed as to compliance with the Land Development Code.*



Springs Located in Washington County

## Keetch Byram Drought Index (KBDI)

The Keetch-Byram drought index (KBDI) is a continuous reference scale for estimating the dryness of the soil and duff layers. The index increases for each day without rain (the amount of increase depends on the daily high temperature) and decreases when it rains. The scale ranges from 0 (no moisture deficit) to 800. The range of the index is determined by assuming that there is 8 inches of moisture in a saturated soil that is readily available to the vegetation. Note that Washington County is shown at 0 – 99 on the index.

