9J-5.011 INFRASTRUCTURE ELEMENT
SANITARY SEWER, SOLID WASTE, STORMWATER AND DRAINAGE MANAGEMENT, POTABLE WATER AND SUPPLY, AND NATURAL GROUND WATER AQUIFER RECHARGE ELEMENTS

WASHINGTON COUNTY, CARYVILLE, EBRO, VERNON, AND WAUSAU
2020 COMPREHENSIVE PLAN

This data and analysis is support data and is not adopted with the Goals, Objectives and Policies.

Section D – Table of Contents

LIST OF TABLES FOR INFRASTRUCTURE ELEMENT OF
2020 COMPREHENSIVE PLAN
Washington County, Florida

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SECTION PAGE NUMBER

LIST OF FIGURES FOR INFRASTRUCTURE ELEMENT
OF 2020 COMPREHENSIVE PLAN
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2020 INFRASTRUCTURE ELEMENT
SANITARY SEWER SUB-ELEMENT
SOLID WASTE SUB-ELEMENT
STORMWATER AND DRAINAGE MANAGEMENT SUB-ELEMENT
POTABLE WATER AND SUPPLY SUB-ELEMENT
NATURAL GROUND WATER AQUIFER RECHARGE SUB-ELEMENT

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Section C

I. PURPOSE

The purpose of the Sanitary Sewer, Solid Waste, Stormwater Management, Potable Water and Natural Groundwater Aquifer Recharge Sub-elements of the Infrastructure Element) is to provide for necessary public facilities and services correlated to future land use projections (Rule 9J-5.011, Florida Administrative Code), ensure that sanitary sewer will be provided concurrently with the demand for services, identify safe disposal methods for treated wastes, establish the level of service for sanitary sewer, and protect the unique natural resources of the County. There is a single goal with 5 objectives.

II. INTRODUCTION ~~Introduction, Purpose, and Organization~~

This element has been prepared to meet the requirements of the Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Florida Statutes. In the relevant part, the Act requires comprehensive plans to describe:

- Sanitary sewer, solid waste, drainage, portable water supply and aquifer recharge protection problems and needs.
- Ways to provide for future requirements
- General facilities that will be required for solution of the problems and needs. In addition, the element was prepared in accordance with Chapter 9J-5, Florida Administrative Code, "Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance."

~~Organization of the Element~~

The Infrastructure element is divided into sections containing:

- Support information that is the technical information summarizing the data and analysis on which the element is based. The support information is presented as sub-elements for the different types of facilities dealt with in the element and for natural ground water aquifer recharge areas.

- Goals, objectives and policies for the element as adopted in the comprehensive plan for the County and the municipalities of Caryville, Ebro, Vernon, and Wausau.

Current conditions and level of service and projected demand on these services and facilities are based on population projections presented in the Future Land Use Element and as replicated in Table D-1.

Table D-1. Permanent Populations, 1990 – 2030, Caryville, Chipley, Ebro, Vernon, Wausau, Unincorporated Washington County and Washington County Total
(The shaded sections indicate a decrease in population growth)

Jurisdiction	1990	2000	2005	2010	2015	2020
Caryville	121	71	191	188	167	169
Chipley	3,866	3,592	3,601	3,539	3,469	3,378
Ebro	255	250	258	262	265	267
Vernon	778	705	784	823	826	822
Wausau	313	398	436	483	528	561
Municipalities Sub Total	5333	5016	5270	5295	5255	5197
Unincorporated Washington County	11,076	14,773	17,658	20 940	22,983	24,551
Washington County Total	16,409	19,789	22,928	26,235	28,238	29,748

Source: Shimberg Center for Affordable Housing, and Washington County Planning Department
Shaded areas represent a decrease in population

III. SANITARY SEWER WASTEWATER TREATMENT SYSTEM SUB-ELEMENT

III. SANITARY SEWER WASTEWATER TREATMENT SYSTEM

The purpose of the Sanitary Sewer Wastewater Treatment Sub-Element is to provide for the health and safety of the residents of Washington County by ensuring adequate wastewater collection and treatment facilities that are cost-effective and environmentally sound. The proper treatment and disposal of sewage is particularly critical in sections of the County where the prevention of water pollution is vital. The residents of Washington County receive sanitary services from two sources – wastewater treatment plants (WWTP) within the City of Chipley, the Town of Vernon, and the Sunny Hills Planned Unit Development and onsite sewage treatment and disposal systems (OSTDS).

This document presents an analysis of conditions and alternatives designed to illustrate the options available for sewage treatment and disposal. The policies which are recommended in this countywide Plan element are designed to manage disposal systems while conserving water supplies and protecting water quality to the greatest extent possible. Regardless of the method of service or the manner in which service is provided to the residential or commercial customer, the provisions of the Sanitary Sewer Sub-Element shall be designed to ensure a safe, consistent and quality level of service for all customers. Residents and public officials of the County are well aware that development in the County can create a multitude of problems when not properly managed.

A. WWTPs in Washington County

Washington County does not have a countywide wastewater treatment system. There are generally three areas – Vernon, Chipley, and Sunny Hills (a planned unit development) – that have central WWTPs.

1. Background. The three large-scale existing public WWTPs are located in Vernon, Chipley and Sunny Hills providing service to the most densely populated areas. These facilities are comprised of three components, which perform the basic functions of collection, treatment, and disposal of sewage. A sanitary sewer system, also known as a wastewater collection system, uses sewers or pipe through which sewage or wastewater is carried from homes and businesses to a treatment plant. Wastewater consists of industrial, human wastes and rain runoff in some older systems. Sewer systems are generally designed to flow by gravity through sloped pipes until it reaches either the treatment plant or a sewage pumping station.

   All of the wastewater produced by a city eventually ends up in a river, lake, or ocean. On its way, this wastewater flows through a sewage treatment plant. In conventional sewage treatment plants, bacteria remove up to 90 percent of biodegradable organic wastes before the sewage moves to a sedimentation tank, where remaining solids and microorganisms settle as sludge. Generally, the sludge is incinerated, dumped in the ocean or a landfill, composted, or used as fertilizer. The remaining wastewater, still containing oxygen-demanding wastes, suspended solids, nitrates, phosphates, and toxic metal compounds, may pass through additional advanced sewage treatment before being discharged to the river, lake, or ocean, disposed of by the use of spray fields.

2. Collection System. The collection system is composed of a network of sewer pipes, which collect sewage from individual establishments and convey it to a central location for treatment. The collection network is generally laid out in a pattern roughly analogous to the branching pattern of a tree. This classification scheme identifies sewers according to their location within the network and not according to their size. Since sewage flow within the network is from the periphery toward the treatment plant, this scheme allows for easy identification of downstream components affected

   The major components of the collection are the trunk mains and interceptors. Interceptors are sewers that connect directly to and convey sewage to the treatment plant. Trunk mains are sewers that connect directly to and convey sewage to an interceptor.

   Effluent and sludge are the waste products of the treatment process. Effluent is the treated wastewater, which flows out of the treatment plant. Effluent disposal alternatives include discharge to a water body, irrigation reuse or injection into deep aquifers. Sludge refers to the accumulated solid residues of the treatment process. Prior to final disposal, sludge is usually subjected to an additional biological treatment process to remove pathogens and to physical dewatering processes to facilitate transportation and disposal. Common disposal methods include burial in solid waste landfills and land application as a soil conditioner for agricultural purposes.

   - There are a large number of processes that can accomplish this, but they are grouped into one of the following three categories depending on the proportion of material removed:

   - Primary Treatment. This refers to the removal of between 30 and 35 percent of the organic materials and up to 50 percent of the solids from the sewage. This is also commonly referred to as physical treatment because screens and settling tanks are the most common methods used to remove the solids.

   - Secondary Treatment. Secondary treatment processes remove between 80 and 90 percent of total organic materials and suspended solids from sewage. This level of treatment generally requires multiple steps involving one biological process and one or more processes for removal of suspended solids.

   - Tertiary Treatment. Sewage may also contain large quantities of synthetic organic compounds or inorganic chemicals which may create pollution problems if not removed. Tertiary (or advanced) treatment adds steps to primary and secondary processes to remove these pollutants. The most common tertiary processes remove compounds of phosphorus and nitrogen. The effluent of advanced treatment processes often approaches potable water purity.

3. Existing Conditions. Only two municipalities, Chipley and Vernon and one planned unit development, Sunny Hills have a central wastewater service system in place. The system at Sunny Hills is operated by a private provider, Aqua Utilities of Florida. The County has adopted comprehensive regulations on its wastewater service that both the Town of Vernon and the Sunny Hills Subdivision must comply. The City of Chipley is regulated by their adopted Comprehensive Plan, but their system will be discussed in this element.

~~By 2010,~~ Both Vernon and Chipley ~~will~~ have reuse (spray fields) on line. All structures within these three areas are required to connect to the existing sewer system where available. If service is not available, the developer must extend the wastewater collection system to his development where feasible. No septic tank permits are issued in either the City of Chipley or the Town of Vernon in lieu of the availability of a wastewater collection system unless the approving authority certifies that it is not feasible to extend the existing system to the source of the waste generation. Grease, oil, and sand interceptors are required. Discharge of storm water, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process water into the wastewater collection system is also prohibited. The Comprehensive Plans and the Land Development Codes of Chipley and Washington County ensure that the various regulations discussed below are strictly adhered to by developers.

The levels of service for Chipley, Vernon, and Sunny Hills are shown in Table D-2.

Table D-2. Chipley, Vernon, and Sunny Hills Facilities Capacity and Adopted LOS, 2000 – 2020

Treatment Plant	Service Area	Capacity (mgd)	Adopted LOS
Chipley	City of Chipley	1.20	110 gpcpd
Vernon	City of Vernon	0.210	80 gpcpd
Sunny Hills	Sunny Hill Subdivision	0.05	110 gpcpd

Sources: 2009 Population served for Chipley and Vernon. Sunny Hills' information furnished by Aqua Utilities. FDEP, April. 2009; Adopted LOS - Washington County and Chipley Comprehensive Plans; Capacity for Chipley and Vernon - FDEP, April, 2009; Capacity for Sunny Hills - Washington County Comprehensive Plan EAR, April 2008 with LOS amended from 120 to 110 gpcpd.

a. Chipley. The Chipley WWTP facilities is located in the north section of Chipley and has a design capacity of 1.2 mgd and an average daily flow of .65 mgd. The sewer collection system covers most of the City, serves 4,475 persons, and provides an existing LOS of 173 gpcpd. This exceeds the adopted LOS of 110 gpcpd. A limited area outside the city limits (east and west along U.S. Highway 90) is served by Chipley sewer system. This area only contains four (4) service connections (FDOT, a restaurant, and two (2) residences). Chipley High and Middle Schools, located on Brickyard Road are also located outside the corporate limits.

Chipley is presently in the process of upgrading the system and constructing spray fields to eliminate any discharge of treated effluent into Holmes Creek. Spray fields are located adjacent to the at Washington County Industrial Park, Falling Waters Golf Course and the Davidson property, all of which are located in unincorporated Washington County. In addition, the City is authorized to use reclaimed water within the general wastewater service area. There is no specific proportional capacity allocated to serve unincorporated Washington County; however, service will be provided to those service connections at the LOS standard to be adopted by the City. The City of Chipley's Sewer Collection System and the corresponding service area is discussed in detail in that City's Comprehensive Plan.

b. Vernon. The Town of Vernon successfully completed an upgrade of their WWT and subsequent installation of spray fields to eliminate an overflow discharge into the Holmes Creek. During the period prior to and during the upgrade, no new hookups were allowed within the service area of the Town of Vernon due to the moratoria placed on the facility by FDEP. At the present time connections have resumed and building permits are being issued again as the moratoria as issued by the Department of Environmental Protection was suspended upon the completion of the upgrade in 2007 and the subsequent installation of s spray field.

The plant is owned and operated by the City. It has a design capacity of 0.126 MGD. The treatment process is extended aeration activated sludge and is considered to be providing secondary treatment. The system presently serves 404 household or about 962 persons (households 404 x 2.38 average household size for Vernon) and has an average daily flow of 75,000 gpd providing an existing LOS of 78 gpcpd. This level of service is slightly less than the adopted LOS of 80 gpcpd.

Vernon's wastewater treatment will be undergoing an additional upgrade that will include replacement and rehabilitation of existing lift stations, replacement of sewer laterals and rehabilitation or relocation of sewer lines. This project will help reduce inflow and infiltration and aid in necessary relocation of Highway 79 utilities resulting from the four-lane project of the roadway.

c. Sunny Hills. The central wastewater treatment facility within the Sunny Hills subdivision operated by a private contractor, Aqua Utilities of Florida, Inc. There are currently 181 wastewater connections (April 2009). The wastewater utility system for Sunny Hills is permitted by FDEP as of April 2009. While this system has been declared adequate to serve the users currently in the system, expansion is needed to encompass additional housing occurs. Notwithstanding the need to expand the service area, the Current Discharge Monitoring Reports (DMRs) indicates the Three Month Daily Average (TMDA) flows of 30-40 percent capacity. The facility meets the effluent disposal requirements of Sections 62-611 and 62-600.530. Florida Administrative Code as verified by testimony by FDEP before the Florida Public Utilities Commission in August 2007.

The system is operated in the contact stabilization mode. The treatment system includes aeration (contact stabilization), clarification, and disinfection by Chlorine. Residuals are digested, dried on beds and transported to the Springhill Regional landfill for disposal. By permit, residual may also be taken to a permitted Residual Management Facility for disposal. Because the effluent is placed in oxidation ponds, with no discharge to surface waters, there are no significant impacts to natural resource. The Sunny Hills plant is the only facility serving unincorporated Washington County, with the exception of the extremely limited service of the Chipley WWTP to the four service connections in unincorporated Washington County.

With regard to the Sunny Hills system, it is likely that the actual capacity is adequate to serve the Sunny Hill community. However, the adopted Level of Service (LOS) for the system may be too high. The adopted LOS for Sunny Hills is 120 gallons per capita per day (gpcpd), compared with 110 gpcpd and 80 gpcpd for the Chipley and Vernon systems. The DEP did not have specific flow information for the Sunny Hills system, but their data did indicate that the system is operating "within its permitted capacity." Assuming that the current demand on the system was equal to the permitted capacity of 50,000, and knowing that the system currently serves a population of 465 people, the LOS would equate to 107.5 gpcpd. This is well below the adopted LOS of 120 gpcpd. Because DEP indicates that the demand on the system is "within" the design capacity of the system, it is assumed that actual demand is less than the design capacity. Therefore, actual demand on the system, in terms of gallons per capita per day, is less than 107.5. Based on the information the LOS for the Sunny Hills system is amended from 120 gpcpd to 110 gpcpd.

Table D-2. Chipley, Vernon, and Sunny Hills Sewage Treatment Facilities Surplus Capacity and Demand, 2000 – 2020

Treatment Plant	1999		2000		2005		2010	
	Demand (mgd)	Surplus Capacity (mgd)	Demand (mgd)	Surplus Capacity (mgd)	Demand (mgd)	Surplus Capacity (mgd)	Demand (mgd)	Surplus Capacity (mgd)
Chipley	0.770	0.430	0.478	0.722	0.503	0.697	0.525	0.675
Vernon	0.075	0.025	0.069	0.031	0.069	0.031	0.070	0.030
Sunny Hills	N/A	N/A	0.558	0.000	0.558	0.000	0.558	0.000

Sources: 1999 Demand for Chipley and Vernon - FDEP, Nov. 1999; 1999 Demand for Sunny Hills - not available, DEP indicates that system operates within capacity; Projected Demand - adopted LOS applied to projected population.

4. Regulatory Framework. The policies which are recommended in this county-wide plan element are designed to manage disposal systems while conserving water supplies and protecting water quality to the greatest extent possible.

   a. Federal Regulations. The Federal Water Pollution Control Act (PL 92-500) is the controlling national legislation relating to the provision of sanitary sewer service. The goal of this act is the restoration and/or maintenance of the chemical, physical and biological integrity of the nation's waters. The act established the national policy of implementing area-wide waste treatment and management programs to ensure adequate control of sources of pollutants and protect our waterways and water supply. Under Section 201 of PL 92-500, grants are made available to local governments to construct facilities to treat "point sources" of pollution, which include effluent from sewage treatment processes. The U.S. Environmental Protection Agency is responsible for implementing the act.

   b. State Regulations. The Florida Department of Environmental Protection (FDEP) is responsible for ensuring that the State carries out responsibilities assigned to it under PL 92-500. FDEP has adopted rules for the regulation of wastewater facilities in

Chapter 17-6, F.A.C. rules apply to facilities that treat flows exceeding 5,000 gallons per day for domestic establishments, 3,000 gallons per day for food service establishments, and where the sewage contains industrial or toxic or hazardous chemical wastes.

Chapter 17-7 F.A.C. provides the regulations for domestic sludge classification, utilization/and disposal criteria under Part IV of the rule.

The Florida Department of Health and Rehabilitative Services (HRS) regulate septic tank and drain field installation within the state. These requirements have been adopted by rule in Chapter 10D-6, F.A.C., and are administered by the Washington County Health Department.

c. Local Municipal and County Regulations. Washington County does not operate a central sewer system; however, the Washington County Health Department issues permits for septic tanks throughout the unincorporated areas of Washington County, Ebro, Caryville, and Wausau. Before a permit is issued to build a home or other structure, a septic tank must be installed on the lot in accordance with Chapter 10D-6 F.A.C. To ensure that this policy is complied with, the County has an existing ordinance in place to prevent connection to electrical service unless final septic tank inspection approval is received. This serves to ensure that occupancy of residential and/or the operation of commercial businesses will not occur until such time that a properly functioning septic tank system is in place.

The Health Department also issues permits to Chipley, Vemon, and Sunny Hills, all of which have central sewer systems. Prior to issuing a building permit, the County requires that the Sunny Hills Architectural Review Committee submit an approval to the Planning Department certifying that central water is available. The County Health Department also conducts an inspection and issues a certification that central sewer is available. The City of Vernon requires the County Building Department t check with the City prior to issuing a building permit, to ensure central sewer is available for the particular parcel being developed. The City of Chipley also uses an approval process to certify the presence of central sewer prior to the building permit being issued. Since all building permits issued in the County (including the City of Chipley) are issued by the Washington County Building Inspection Department, and the County Health Department, certification is also required in all instances falling below FDEP thresholds (i.e., for commercial and industrial uses, etc.), it is ensured that adequate wastewater treatment is provided in the County for new development.

5. Environmental Impacts. The basic function of WWTPs is to purify used water by speeding up the natural process of water purification. In the past, the discharge of effluent waters into streams of water was used to perform this process. This has now proved not be an acceptable means due to the demands of an increasing population. Sewers and WWTPs are now in service as the main method of controlling the collection and purification of wastewater before it is discharged to any stream, land or reused for any purpose.

The establishment of efficient wastewater plants is essential to protect the public's health,

drinking water supply, and environment by ensuring safe drinking water. Unfortunately, adverse impacts can occur when facilities are damaged by wind, flooding, and excessive stormwater runoff during rain events. Aging and deteriorating facilities can have adverse impacts on the environment when plants do not function in an efficient manner and when the levels of service standards are allowed to fall to a level that will not allow the adopted levels of service to be met. Inspections and testing are important to ensure that the water being discharged as treated water and if this is not accomplished with trained personnel and the treatment facilities perform satisfactorily in accordance with FDEP and FDH standards. Standards established in Washington County's Flood Ordinance are consistently applied to new development.

In Washington County, only two municipalities own and operate central WWTPs – Chipley and Vernon. There are several package plants located in the county and they are susceptible to the same hazards as the municipal-owned plants. Figure D-2 shows the location of all the WWTPs and central package plants within Washington County.

a. City of Chipley. In addition to discharging treated effluent into surface waters, the existing City of Chipley WWTP also had an overflow volume that discharged directly to an unnamed creek, which flows to Alligator Creek and Holmes Creek in the Choctawhatchee River Basin. An aggressive approach on the part of the city has eliminated the overflow of untreated sewage into the surface waters. The city is constructing a reuse facility that will eliminate all discharge of treated effluent into the waterways. The project will be complete in 2010.

b. City of Vernon. As of August 1, 1999, the method of effluent disposal for the City of Vernon sewage treatment plant was changed from surface water discharge to percolation ponds. However, these ponds experienced overflow problems; therefore, the overflow discharge was temporarily diverted back to the surface waters of Holmes Creek with FL DEP eventually placing a moratorium on future development. The City obtained interior agriculture acreage and constructed a reuse facility that has the potential of providing water to a sod-growing facility for the County.

c. Sunny Hills (Planned Unit Development). Aqua Utilities of Florida, Inc. owns and operates the wastewater treatment facility within this older subdivision. Aqua Utilities reports that a study conducted in 2008 does not support the need for expansion of the current system, as the outlook for future growth within the Sunny Hills area is not favorable. They do not plan to upgrade or expand the system based on the current needs. Any future upgrade and expansion will be based upon timing of needs. Vested rights have been declared for the Deltona Corporation, the developer. Out of 617 residences connected to water, only 181 are connected to the wastewater treatment system, making the wastewater treatment facility unaffected until Aqua Utilities, Inc., of Florida expands to the service area. The developers and Aqua Utilities will be encouraged to extend wastewater treatment facilities.

   The lack of expanded service of the WWTP within the Sunny Hills subdivision

and the proliferation of septic tanks poses a threat to the one of Florida's most unique areas, the Econfina Creek. The Econfina is a spring fed waterway providing recreational opportunities and Bay County's drinking water supply that flows into Deer Point Lake reservoir. Protection of this water source has become a high priority for NWFWMD. The District has acquired approximately 40,000 acres in Washington and Bay counties in an effort to protect the recharge area associated with the Econfina Recharge area and diverting development to other areas.

6. Projected Needs and Future Sites of WWTPs. None of these plants serve any other areas or land uses. There have been no remarkable increases in population in any of these areas and the current levels of service are adequate. The City of Chipley system is currently undergoing an upgrade and the construction of a spray field that will eliminate the discharge of treated wastewater into Alligator Creek. Due to the necessary relocation of State Road 79 through Vernon, replacement and rehabilitation of existing lift stations, replacement of sewer laterals and rehabilitation or relocation of sewer lines will occur during the state road project. Both of these systems are regulated by FDEP and are operating within their permit parameters. With the upgrades of the delivery system and continued maintenance, the life span of these facilities should last beyond the ten-year planning period. Sunny Hills Subdivision does meet the FDEP effluent disposal requirements but the current service area will need to be expanded.

Table D-3. Chipley, Vernon, and Sunny Hills Sewage Treatment Facilities Analysis, Population Served 2000 – 2020

Treatment Plant	Population Served			
	1999	2000	2005	2010
Chipley	4,300	4,345	4,570	4,770
Vernon	900	867	872	875
Sunny Hills	465	465	465	465

Sources: 1999 Population served for Chipley and Vernon - FDEP, Nov. 1999; Projected Population for Chipley and Vernon - Affordable Housing Needs Assessment, UF, Shimberg Center for Affordable Housing, Total Population Projections; Projected Population for Sunny Hills Subdivision - based on EAR information that the service area has not changed, this population was kept at 465.

a. Town of Wausau. Wausau is researching the feasibility of installation a centralized sanitary sewer system. From 1990 to 2000, Wausau's growth was 27 percent and declining by 17 percent by 2005 with projected growth rates by 2010, 2015, and 2020 at 11 percent, 9 percent, and 9 percent respectively. Based on their analysis and the future growth projections, it has not been considered economically feasible to install such a system. Existing septic tank systems are functioning well and according the Washington County Health Department, there have been no identified problems to natural resources. However, due to the continued threat of faulty septic tanks, potential for pollution to the drinking water supply, and surface

waters, the town will continue to seek opportunities for grants and funding that will enable the construction and utilization of a central Wastewater Treatment Facility within the Town of Wausau.

b. Town of Caryville. The Town of Caryville has experienced a decline in their population base. This combined with the fact that the town is almost totally located in a flood zone, will delay the development of a sanitary sewer system in the near future since additional high-density development in the flood zone should be discouraged. Existing septic tank systems are functioning well and there have been no identified problems to natural resources.

c. Town of Ebro. In the past, it has been the position that Ebro does not have a sufficient concentration of population to justify the expenditures necessary for a sanitary sewer system. However, the relocation of the Panama City – Bay County International Airport to the south will serve as the force for future growth and development in Ebro and the southwestern part of unincorporated Washington County. Existing septic tank systems are functioning well and according the Washington County Health Department, there have been no identified problems to natural resources. However, due to the continued threat of faulty septic tanks, potential for pollution to the drinking water supply, surface waters, and need for future growth incentive, the town is seeking opportunities for grants and funding that will enable the construction and utilization of a central WWTP within the Ebro.

d. Unincorporated Washington County. The first step toward the goal of a central WWTP for the County is a feasibility study and identification of the areas that will initially be most benefited by a WWTP facility. The County is currently pursuing funding for the feasibility study as outlined on the Capital Improvements Schedule. Based on density, the southeastern section of the County would appear to be ideally suited for the initial establishment of a centralized system. The County will continue to encourage growth adjacent to or within the urban areas to foster expansion of existing systems to provide services to new development. As development increases and the need for economic development become more critical, the County intends to pursue the placement of central utility systems in the county by identifying feasible service areas projects in the Capital Improvements Element schedule.

B. Package Treatment Plants in Washington County

Package treatment plants are essentially small treatment systems, which have a collection network, treatment plant, and disposal system. Package plants may be designed to provide any level of treatment, but plants providing secondary treatment are most commonly used. Package plants are available in a range of capacities up to one million gallons per day. They serve isolated development and are usually partially or completely pre-assembled by the manufacturer prior to shipment to the site of use. New construction of package wastewater plants must meet the relevant standards established by the State of Florida and the Federal government and must connect to central wastewater treatment facilities within 5 years of central wastewater facilities becoming available. In Washington County, new package plants shall be permitted only when the developer of such temporary package treatment plant enters into a legally binding agreement

wherein the developer or a homeowners' association assumes responsibility for the proper maintenance and operation of the plant, agreeing to construct, provide services, and maintain the facility according to FDEP and WFWMD rules and standards.

1. Background. Section 381.272(a), F.S prohibits industrial or commercial uses that utilize, handle, or store hazardous materials from using septic tanks. by Section 381.272(a), F.S. Any future location of these type land uses requires approval for package plants.

2 Collection System. Package treatment plants are essentially small treatment systems, which have a collection network, treatment plant, and disposal system. Package plants may be designed to provide any level of treatment, but plants providing secondary treatment are most commonly used. Package plants are available in a range of capacities up to one million gallons per day. They serve isolated development and are partially or completely pre-assembled by the manufacturer prior to shipment to the site of use.

3. Existing Conditions. There are three package plants located within the County (Table D-4).

   a. Caryville Work Camp. The Department of Corrections (DOC) facility located in Caryville, Florida, has access to the town's water supply system, but there is no central WWTP available in the town. Florida DOC was required to install a system that meets FDEP standards for the facility type constructed.

   b. Washington County Correctional Institution. Located in an isolated area of Washington County, there is no WWTP available in the immediate area. Florida DOC was required to install a system that meets FDEP standards for the facility type constructed.

   c. Washington County Kennel Club (Ebro Dog Track). Established in the late 50s, this racetrack is located within the city limits of Ebro. The developer was required to install a system that meets FDEP standards for the facility type constructed.

Table D-4. Existing Package Treatment Plants – Washington County

Treatment Plant	Responsible Authority	Design Capacity	Average Current Demand
Caryville Work Camp	Florida Department of Corrections	10,000 gpd	Not Available
Washington County Correctional Institution	Florida Department of Corrections	270,000 gpd	Not Available
Washington County Kennel Club	Washington County Kennel Club	25,000 gpd	4,000 gpd

Source: Florida Department of Environmental Protections, 2009

4. Regulatory Framework. Package treatment systems shall continue to be sited in accordance with FDEP, and FDHRS guidelines and approval shall be assessed on a case-by-case basis. The County has indicated it will not provide central sewer facilities within the County. Any developer proposing a density or intensity of development that cannot be accommodated by septic tanks shall be required to provide a package plant at the developer's expense.

5. Environmental Impacts. Little is known about the long-term impacts of current discharge practices of package plants on Washington County water quality. The FDEP requires that each private wastewater facility have a certified operator responsible for monitoring the treatment process to ensure that their standards are met. They require the operator to submit monthly reports monitored by the FDEP officials. In areas where potential impacts to groundwater may occur, a monitoring well system must be installed and monitored on a periodic basis. To date, the FDEP records show that plants have generally been operating at satisfactory standards. If non-compliance issues arise at a facility, FDEP has the jurisdiction to cite the facility, and if necessary, impose fines until the problem is corrected.

   No WWTPs can be installed where central sewer service exists or within the 100-year floodplain, in conservation lands, or within 500 feet of potable water well. The Soil Conservation Service can provide additional information on the proper location of package plants. Generally, most of Washington County is not served by any central wastewater system, and this situation is projected to continue for a period of time due to the rural nature of the County and lack of funding. While it is not the intent to discourage package treatment plants, the County shall closely monitor the placement of such plants and require the package wastewater treatment systems to be constructed to run efficiently and effectively to prevent water degradation.

6. Projected Needs. Review of information from FDEP indicates that the County's package treatment plants have operated within regulatory limits during the past year and are currently not subject to any enforcement actions by FDEP. There are currently no expansion plans for the facilities served; therefore, it is assumed that the facility demand will remain constant over the remainder of the planning period. The County should coordinate with FDEP to ensure that the location of future package treatment plants should be done in concert with an individual case-by-case analysis and approval from FDEP.

   The sites of any future land uses that involve the storage, handling or use of hazardous materials will be evaluated during the development review process. These type facilities shall be required to utilize package treatment systems in accordance with Florida Statutes. Package plants will be required to be constructed to enable them to be connected to any central wastewater system developed in the future.

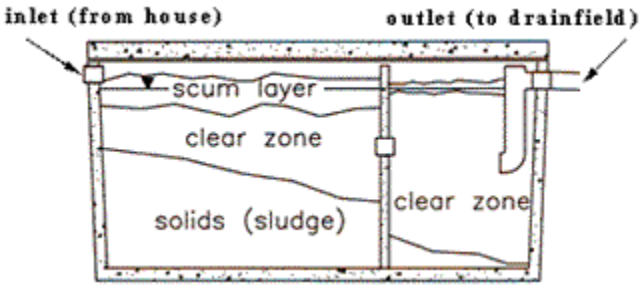
C. Septic Tanks

The purpose of the Sanitary Sewer Sub-Element is to ensure that sanitary sewer services will be provided concurrently with the demand for services, to identify safe disposal methods for treated wastes, and to establish the level of service for sanitary sewer.

1. Background of Septic Tank Usage. Wastewater in unincorporated Washington County is treated through public or private wastewater systems. Chipley and Vernon both have central wastewater systems and do not allow septic tanks unless there are extenuating circumstances. Septic tanks are allowed Sunny Hills only where the central wastewater system is not available. The rest of the County including Wausau, Caryville, and Ebro utilize septic tanks as does the many acres of unincorporated Washington County.

2. Collection System of Septic Tanks. The septic tank receives wastewater from the home. Solid residues from septic tanks, called septage, settle to the bottom of the tank and must be removed periodically. Residential systems typically must be cleaned every three to five years. Commercial systems require more frequent cleaning, as often as once a month for uses such as restaurants. Septage from septic tanks is picked up by private companies, which according to state law must then be land applied and treated according to regulatory provisions or may be disposed of at a sewage treatment plant for treatment. Septage from Washington County is either land applied and treated by licensed haulers according to state requirements, or is treated at a sewage treatment plant before being transported to Springhill Landfill for disposal.

Drawing of Typical Septic Tank



Septic tanks contain bacteria that grow best in oxygen-poor conditions. These bacteria carry out a portion of the treatment process by converting most solids into liquids and gases. Bacteria that require oxygen thrive in the drain field and complete the treatment process begun in the septic tank. If the septic tank is working well, the wastewater, which flows out the tank, is relatively clear, although it still has an odor and may carry disease organisms. It should flow only into the drain field. It should never be allowed to flow onto the ground surface or into Florida waters.

c. Drainage Fields. Effluent from septic tank systems is discharged to the drain field where it is allowed to percolate into the soil for a period of settling, during which time a significant portion of the suspended solids settle. The settled solids are gradually decomposed by bacteria in the tank. The remaining liquids are discharged through underground drainage pipes into the drain field and percolate into the soil where microorganisms and filtration processes purify the liquids. Soil permeability and depth to the water table are limiting factors on septic tank performance and may require construction of elevated drain field grounds to ensure adequate performance. The Future Land Use Element of this Comprehensive Plan indicates the major soil associations present in Washington County as identified in the Soil Survey of Washington County by the U.S.D. A., Soil Conservation Service (1965). The overall predominant soil types are Lakeland, Klej, Eustis, and Norfolk, all of which are good for septic tank use according to the Soil Survey. Goldsboro and Shubuta types are poor to fair, while Rains is the only type rated as unsuitable.

Table D-5. Soil Survey for Washington County	
Caryville	Lakeland; Klej; small amount of Goldsboro
Ebro	Lakeland; Klej; small amount of Rains
Wausau	Lakeland Unincorporated areas
Southwest Part of County	Lakeland
Northwest Part of County	Lakeland, Norfolk, Klej, Bowie, Shubuta, Goldsboro
Northwest Part of County	Eustis, Lakeland
South Central Part of County	Eustis, Lakeland
Southeast Part of County	Lakeland, Eustis
Chipley Area	Mixture of many soil types, including Norfolk, Tifton, Goldsboro
Source: USDA Washington County, Florida Soil Survey, May 1965	

3. Existing Conditions of Septic Tanks. Septic tank systems provide onsite wastewater treatment for both residential and small-scale commercial development in the unincorporated areas of Washington County and in the municipalities of Caryville, Ebro, and Wausau. Residential septic tanks generally range in capacity from 500 to 1,000 gallons, while commercial septic tanks typically have a larger capacity. As long as a tank system operates in a satisfactory operating condition, the permit under which it was approved will remain valid. If the use of a building or the flow rate is changed upward due to increased size of household or use, the onsite system must then be upgraded to comply with the current rules governing septic tank systems.

4. Regulatory Framework of Septic Tanks. The Florida Department of Health and Rehabilitative Services (HRS) regulate septic tank and drain field installation within the state. These requirements have been adopted by rule in Chapter 10D-6, F.A.C., and are administered by the Washington County Health Department. Soil Surveys provides detailed soil maps for use in determining specific site limitations and such maps as well as site-specific evaluations utilized by the Washington County Health Department in making determination as to septic tank sites. The Washington County Land Development Code prohibits the installation of sewage disposal systems requiring soil absorption systems where such systems will not function due to high ground water, flooding and/or unacceptable soil characteristics. The County's Flood Ordinance 2006-1 sets forth standards to prevent infiltration of floodwaters into the systems and discharges from the systems into floodwaters.

The Health Department also issues septic tank permits to Chipley and Vernon, only when there are extenuating circumstances where extension of the sanitary system network would not be practical or feasible. Chipley and Vernon must approve the installation of any septic tank. The City of Chipley also uses an approval process to certify the presence of central sewer prior to the building permit being issued. The City of Vernon requires the County Building Department to check with the City prior to issuing a building permit, to ensure central sewer is available for the particular parcel being developed. Prior to issuing a septic tank permit in Sunny Hills, the County requires that the Sunny Hills Architectural Review Committee submit an approval to the Planning Department certifying that central water is available. The County Health Department also conducts an inspection and issues a

certification that central sewer is or is not available. A check and balance system is in place as all building permits issued are issued by the Washington County Building Inspection Department after certification by the County Health Department ensures that adequate wastewater treatment is provided in the County prior to construction of new development.

5. Environmental Impacts of Septic Tanks. Suburban and rural areas with high density of septic tanks can experience widespread degradation of ground water, due to increases in nitrates and other substances. Septic tanks are generally the most frequently reported sources of groundwater contamination. When densities are high, septic tanks have the potential to degrade groundwater on larger scale. This is due to the large amount of partially treated wastewater, which may flow into shallow wells. For this reason, it is important to limit the density at which septic tank systems are located.

   Water quality problems may arise if the septic tank system is not adequate to treat the amount of waste placed in it, if the system is used to dispose of waste, which cannot be treated by the system, or if the drain field allows for rapid movement of the effluent into the aquifer. In some areas of Northwest Florida, septic tank effluent flow into a surfical aquifer can be intercepted by sinkholes, which can funnel the effluent into the deeper Floridan Aquifer that might otherwise be protected by the overlying materials.

   When septic tanks flood, contaminates leach out into the floodwaters, making any activities in such areas unsafe and the septic system itself unsafe. Normally, the septic tanks and drain fields will be able to return to service if allowed to recover naturally. The septic system should be installed so that rainfall and surface water flow away from the entire septic system. Excess water can come into the system from storms and groundwater, causing a failure to the system. Grass or small plants above the septic system will help to hold the drain/leach field in place. Do install water-conserving devices to reduce the volume of water running into the septic system.

   According to discussions with FDEP and DOH, there are no known water quality problems resulting from existing septic tank use in Washington County and therefore no existing deficiencies. All septic tank sites must comply with existing DOH regulations which require a minimum setback of 75 feet from surface waters or greater if required by local rules, and local regulations which require a maximum density of one unit per acre when a septic tank is to be used. Local regulations are more restrictive than state regulations that allow up to two units per acre if central water is not available, and up to four units per acre if central water is available. Washington County allows only 1 septic tank per acre and 3.57 if central water is available.

6. Projected Needs for Septic Tanks. Table D-6 indicates the approximate number of septic tanks in use in Washington County. The number of septic tanks existing with the city limits of Chipley and Vernon are minimal. They are only allowed in rare cases where it is not economically feasible to extend the service lines into outlying areas. The tabulations of tanks is based on the number of households as provided by the Florida Housing Data Clearinghouse and the Washington County Health Department

   Based on the number of households as reported by the Florida Housing Data Clearinghouse, there were approximately 6,230 septic tanks in Washington County in 2000. By 2007, that number had grown to 7,145, or an average of 2.10 percent per year. As shown by this table, the rate of new septic tanks is not expected to increase significantly over the next 20 years.

Table D-6. Septic Tanks in Washington County with Projections 2005 – 2030							
Area	2000	2007	2010	2015	2020	2025	2030
Sunny Hills Septic	350*	436	436	436	436	436	436
Ebro Septic Tanks	100	108	108	118	121	129	134
Caryville Septic Tanks	83	60	21	17	15	15	15
Wausau Septic Tanks	178	161	174	153	159	159	159
Unincorporated Washington County	5,519	6,380	6,325	7,021	8,017	8,747	9,130
Total Active Septic Tanks	6,230	7,145	7,064	7,309	8,748	9,486	9874
Percentage of Increase of Septic Tanks		14.69	<1.13>	3.47	19.69	8.44	4.09
Source: Florida Housing Data Clearinghouse, Washington County Health, Inc., and Washington County 9-1-1 GIS Office *Estimated							

Although this table indicates that septic tanks are the most prevalent source of sewage disposal in the County, the concentration of on-site sewage disposal systems is very low. In 1990, there were approximately nine septic tanks per square mile. That is at the extreme low end of septic tank concentration on a statewide basis. Currently, the County's concentration is approximately 40-50 tanks to a square mile of total land in Washington (based on approximately 7,145 septic tanks on 368,000 total square acres). Neighboring Bay County is in the 20-49 septic tanks per square mile range while highly urbanized counties like Duval are in the 50-88 septic tanks per square mile range.

As indicated previously, some soil associations in Washington County have been classified by SCS as unsuitable for the use of septic tanks. The County prohibits (through the Building Inspection Department and the Health Department) installation of septic tanks where such systems will not function due to high ground water, flooding or unsuitable soil characteristics. In these cases, the developer must prescribe adequate methods for waste disposal. The Future Land Use Element of this plan, as well as the implementing The Land Development Code are and will be structured to limit the density on placement of septic tank systems, and such systems will be prohibited where state and local guidelines are not met.

The County Health Department indicates that there are generally no significant problems and/or damage to natural resources resulting from inadequate septic tanks and/or incorrect siting. The fact that Washington County's existing subdivision regulations require twice the land area as the statewide standard for septic tank placement (1.0 acre per septic tank versus 0.5 acres), combined with the individual site analysis which is conducted before septic tank site approval is granted by the Health Department, the distribution and overall low residential densities contained in the Future Land Use Element should serve to protect natural resources in the future from any adverse effects of septic tanks.

D. Cesspools and Privies

A cesspool is a primitive form of the septic tank consisting of a large tank with perforated sides and top. The wastewater enters the cesspool directly from the house drain. Solids settle to the bottom while the liquid portion of the wastes seeps out through the perforated top and sides. Separation of the wastes is poor and the potential for raw sewage to flow into the groundwater is high. In the past, some sites may have had shallow wells or cesspools that were used for disposal of industrial wastewater or other types of wastes. These types of cesspools or septic tanks are not allowed in Washington County and it is now illegal to create such systems.

IV. SOLID WASTE SUB-ELEMENT

IV. SOLID WASTE SUB-ELEMENT

A. Purpose

The purpose of the Solid Waste Sub-element of the Comprehensive Plan is to provide effective and safe disposal of solid waste for the present and anticipated future residents of Washington County. Improper disposal of solid and hazardous waste in unauthorized areas can contaminate drinking water or expose residents to dangerous health risks when toxic chemicals are illegally disposed of. The proper management of solid waste is particularly important in its relationship to the Aquifer Recharge, Sanitary Sewer, and Potable Water Sub-elements of the Plan.

B. Solid Waste in Washington County

Washington County does not have a county landfill or incinerator for the disposal of solid waste. Currently, solid waste is disposed of in neighboring Jackson County at the Springhill Landfill. Disposal of waste is also supplemented by a recycling program. The primary focus of this element is to identify the facilities, which the County and the associated municipalities will need in order to manage and dispose of the solid waste and hazardous waste generated in the planning area during the planning period. For solid wastes, these include recycling center, processing plants and landfills. There are no landfills within Washington County and none are planned. The landfill in Jackson County (Springhill Landfill) is currently utilized.

1. Background. The Legislature mandated that all counties reduce their solid waste stream by 30 percent by 1994. Counties were required to initiate a recycling program by July 1, 1989, and to meet an extensive list of recycling responsibilities.

2. Collection System. Solid wastes means sludge from a waste treatment works, water supply treatment plant, or air pollution control facility or garbage, rubbish, refuse, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

    a. Hazardous Wastes. Hazardous waste as defined in Section 9J-5.003 (53), F.A.C., reads, *"Hazardous waste" means solid waste, or a combination of solid wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause, or significantly contribute to, an increase in morality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated, or otherwise managed.*

    b. Residential Wastes. Residential wastes are mixed household wastes, including yard wastes, generated by the general population. This type waste is collected by contractor and taken directly to the landfill for disposal. Residents may also take residential waste to the landfill.

c. Commercial Wastes. Commercial wastes are generated by the commercial and institutional sectors. Physical characteristics of these wastes are similar to those of residential wastes, in that they consist largely of combustible materials in the form of paper and food waste from offices, restaurants, retail establishments, schools, hospitals, motels, and churches. They can be disposed of in the landfill.

d. Industrial Wastes. Industrial wastes include wastes generated by industrial processes and manufacturing operations, excluding hazardous wastes. These wastes also include general industrial housekeeping and support activity wastes. Some of this waste, once separated, can go to the landfill while the other waste must be handled in special ways.

e. Special Wastes. Special wastes include wastes having special characteristics or requiring special handling. These wastes include oversize bulky wastes and materials generated in demolition and construction projects.

f. Processing Plant. The term processing plant refers to a facility designed for incineration, resource recovery or recycling of solid waste prior to its final disposal. This element will address only such facilities as would serve the needs of the County as a whole. The purpose of these facilities may include any or all objectives of reduction of the volume of wastes disposed, energy recovery from wastes or recovery of reusable materials.

g Landfills. The term "landfill" refers to the final disposal site of solid wastes, and as it implies, involves burial of the wastes. Landfills are classified for regulatory purposes according to the characteristics of the wastes they are permitted to receive. This element will primarily address only the type identified as a Class I landfill, which can receive the solid wastes typically generated in Washington County.

3. Existing Conditions. The County, working in cooperation with all municipalities, has instituted a long-range strategy for solid waste collection and disposal. When the 1990 Comprehensive Plan was adopted, mandatory solid waste collection was in place in the County. At that time, residents were charged a monthly fee whether garbage was collected or not. This proved to be an unworkable system in such a highly rural area. A portion of residents would not use the service, and a portion would not pay. Since countywide "mandatory" solid waste collection has been eliminated, the private contractor indicates that more persons are having their garbage collected that when mandatory service was in effect.

Washington County currently contracts with Waste Management, division of Waste Management, Inc., of Florida (WMI) to collect solid waste in the unincorporated portion of the County. This private company also serves customers in Vernon, Chipley, Wausau, Caryville and Ebro. The waste is disposed of at the Springhill Regional Landfill located in Jackson County. WMI indicates that sufficient capacity exists at the Springhill Landfill to meet the needs of Washington County through the next increment of the planning period (2020), with 47 years of permitted space remaining at the facility in Jackson County. Each household contracts on an individual basis with WMI, and is furnished a 96-gallon residential container for curbside service (250 disabled truck-to-door pickups) that is collected once a week. No hazardous waste is picked up.

The adopted LOSS for solid waste for Washington County is 5 lbs per capita per day. Analysis of the solid waste stream reveals that over the January 1, 2008 to December 31, 2008 period, 13,437 tons or 26,874,620 pounds of solid waste was generated and collected in Washington County or 73,629 pounds collected per day. Based on an estimated population base in 2008 of approximately 23,000 persons, this indicates that the solid waste generation/disposal rate is 3.12 lbs per capita per day. This is substantially less than the adopted 5.0 lbs per capita per day LOSS. This does not take into account the portion of the solid waste stream, which was recycled versus being placed in the landfill. No hazardous waste is accepted at the Center except during amnesty days two times a year.

Within Washington County, WMI serves 4,264 household customers and 84 commercial customers. In 2008, the solid waste management company collected 13,437 ton of waste or 26,874,620 pounds for a year. 4,264 households x 2.43 person per household equates to 10,362 persons served during 2008.

In addition to the solid waste collected and disposed of in the land fill, 403,292 tons of this recycled materials were collected at the Recycling Center. Since the time that the plan was originally adopted in 1991, Washington County has developed its own recycling center. The facility is open from 8:00 a.m. to 4:00 p.m. five days per week as well as on special amnesty days.

4. Regulatory Framework

a. Federal. The potential environmental impacts of solid waste facilities have led to the development of an extensive network of permitting requirements at the federal and state levels. The U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) review impacts on air and water quality. The NWFWMD also provides state level review for water quality and quantity impacts. Actual construction and operation of solid waste facilities requires further permits and review by FDEP. A summary of these federal state regulatory responsibilities are in D-7.

For hazardous waste, the national Resource Conservation and Recovery Act (RCRA) of 1976 directed EPA to develop a national program to regulate and manage hazardous waste and provide incentives for states to adopt consistent programs. The national Comprehensive Emergency Response and Compensation Liability Act (CERCLA), passed in 1980 provided EPA with authority and funds to respond to incidents requiring site cleanup and emergency mitigation (the EPA "Superfund" Program). This act also defined the liability of businesses engaged in hazardous waste generation, transport and disposal, and provided enforcement processes.

b. State. The environmental impacts of solid waste is regulated at the state level by DEP, following the solid waste management guidelines set forth in Rule 17-1701, F.A.C. when permitting solid waste facilities. Specifically, the DEP has established evaluation criteria for the construction, operation, closure and long-term care of landfills. The agency also regulates the handling, classification and disposal of wastes, as well as resource recovery operations.

The 1980 Florida Resource Recovery and Management Act (Section 403.7, F.S.) required each county to prepare a Solid Waste Management Plan and directed DEP to develop and implement a hazardous waste management program. In 1988, the state legislature passed the Solid Waste Management Act to establish state goals, regulations and programs for a host of solid waste activities. Because Washington County is a small county government, it is exempted or partially exempted from many requirements of the act. A central focus of the act was recycling. It mandated that counties recycle thirty percent of their total municipal solid waste by December 1994. Additionally, the act required municipalities to determine the full cost of solid waste management, to update it annually, and to provide this cost information to consumers.

c. Local. At the local level the Washington County Board of County Commissioners, the governing bodies of the municipalities and the Washington County Health Department share responsibility for the management of solid waste.

Table D-7. Federal And State Regulatory Reviews Applicable To Solid Waste Facilities

Air Quality	**Review Agency**	**Activity Where Review is Applicable**
Prevention of Significant Deterioration (PSD)	FDEP, EPA	Air emissions in attainment areas
New Source Review for nonattainment	FDEP	Air emission in non-attainment areas
Permit to Construct Air Pollution Sources	FDEP	Construction of air pollution source (subsequent to testing)
Permit to Operate Air Pollution Sources	FDEP	Operation of air pollution source (subsequent to testing)
Water Quality and Quantity	**Review Agency**	**Activity Where Review is Applicable**
Permit to Dredge and Fill	FDEP, COE	Dredging and filling where possible effect on water quality
Permit to Construct Wastewater Discharge	FDEP	Discharge into State waters (construction point of source)
Permit to Construct Wastewater Discharge	FDEP	Discharge into State waters (operation)
Consumptive Use Permit	NWFWMD	Consumptive use of surface and ground water and drilling wells

Solid Waste	**Review Agency**	**Activity Where Review is Applicable**
Permit to Construct a Solid Waste Facility	FDEP	Construction of solid waste facilities
Permit to Operate a Solid Waste Facility	FDEP	Operation of solid waste facility

5. Environmental Impacts. Like many other counties, Washington County is faced with the challenge of balancing development pressures, both residential and commercial, with the preservation of the natural environment. Washington County will comply with all legislation (Federal, State, Regional, and Local) as it pertains to Washington County's environmentally sensitive areas. The County will also promote and provide for an integrated waste management and recycling systems that protects public health, sanitation, and environment and provides for operational efficiency and beneficial land use and growth patterns.

6. Projected Need. The population projections are not anticipated to increase dramatically during the next planning period (through 2020). WMI has indicated there are sufficient facilities at the current landfill they own to provide an adequate level of service for sanitary landfills during the planning period ending in 2020.

   a. Solid Waste Disposal Facilities. As previously noted the County no longer operates any solid waste landfills. With landfill monitoring issues arising out of two closed landfills, the County is not expected to open any such facilities during the planning period. Therefore, the establishment of new landfill facilities within the County is not anticipated.

   b. Solid Waste Collection. As noted previously, Washington County currently contracts with a private hauler to collect solid waste in the unincorporated portion of the County. This private company, WMI, also services customers in Caryville and Ebro. Additionally, some County residents dispose of their own solid waste by hauling it themselves to a disposal site. This process is working well for the County; changes are not anticipated to the solid waste collection system. The waste management fees are paid by each household.

   c. Hazardous Waste Facilities. Washington County does not currently provide any hazardous waste transfer/temporary storage facilities and does not anticipate developing any during the planning period. The County will continue to sponsor amnesty days to provide the opportunity for disposal of small quantities of hazardous wastes.

V. STORMWATER MANAGEMENT SUB-ELEMENT

V. STORMWATER MANAGEMENT SUB-ELEMENT

~~1. Background/terms and Concepts~~

~~a. Drainage Systems~~

The purpose of the Stormwater Management Sub-element of the Comprehensive Plan is to properly manage stormwater runoff, protect ground and surface water quality, protect individuals and prevent property damage from flooding.

In response to extensive flooding in the 1960s, Florida created five water management districts (WMDs) that were intended to provide statewide management of flood flows. In the last 25 years, the Water Management Districts have constructed channel improvements and flood control facilities to reduce/eliminate regional flooding from significant storm events and have developed a regulatory program that addresses the attenuation and treatment of off-site stormwater discharges. The current version of this program normally requires communities to secure Environmental Resources Permits that address stormwater management, dredge, and fill issues involved with both new facility construction and maintenance of existing facilities.

The Northwest Florida WMD, due largely to its lack of taxing authority, does not operate an Environmental Resource Permit program, and projects in this WMD are required to receive permits from FDEP pursuant to Chapter 62-25 FAC.

A. Stormwater Management in Washington County

The relationship between land use management and stormwater management is inevitably linked. The coverage of land area by impervious surfaces allows pollutants to accumulate. The rain moves these accumulated pollutants into ground and surface waters, which reduces water quality. The conveyance systems used to channel the stormwater can become clogged leading to flooding and property damage. It is when natural features are converted into urban land uses that development related problems occur. The development process disrupts our natural drainage patterns and requires that controls be instituted to protect water quality and property from flooding.

1. Background. Historically, the typical strategy adopted in response to stormwater flooding of developed areas was to modify the drainage system to convey runoff away from developed sites more rapidly. Initially, this response may result in limited success in reducing nuisance effects and property damage. However, as urbanization of a drainage basin increases, storm events produce proportionately more and faster runoff, primarily due to the increase in impervious surfaces in the basin as land is covered with structures, paved parking lots, newly paved roads, etc. As a result, the capacities of natural drainage features and previously constructed drainage facilities are exceeded more frequently and stormwater flooding problems increase, as do expenditures for further drainage improvements.

   In addition to exacerbating flood problems, this strategy for coping with stormwater runoff has detrimental effects on water quality. Soil eroding from development sites and materials such as oil, grease, pesticides and fertilizers from urban land uses are washed off by runoff,

increasing pollutant loading on receiving waters. The increased velocity of runoff also disrupts natural drainage features by destabilizing channels, leading to further sediment loading and debris accumulation.

2. Collection System. Water flowing overland during and immediately following a storm event is called stormwater drainage or stormwater runoff. Under the effect of gravity, the drainage flows toward sea level through depressions and channels, which comprise the drainage system of an area. The drainage system may consist of natural features, fabricated features, or a combination of both.

Natural drainage systems are defined by the topography of an area. The largest feature of a natural drainage system is the drainage basin, or watershed. The boundary of the basin is called the basin divide, a line where the natural land elevation directs runoff from the basin toward a common major drainage feature, such as a river, lake or bay. The major drainage feature is often called the receiving body and the smaller features are its tributaries.

Fabricated drainage facilities are artificial constructions designed to store or convey stormwater runoff. Swales, ditches, canals and storm sewers are typical conveyance structures, collecting stormwater runoff and directing it toward downstream receiving waters. Stormwater storage structures are generally classified as either detention or retention facilities. Detention facilities are designed to temporarily impound runoff and release it gradually to downstream portions of the drainage system through an outlet structure. Retention facilities are impoundments that release stormwater by evaporation and by percolation into the ground, with no direct discharge to surface waters.

Table D-8. Surface Water Discharges in the Choctawhatchee River and Bay Watershed in 2002

Facility Permitted	Maximum Daily Flow (gpd)	Receiving Basin
Chipley*	1,200,000	Holmes Creek
Bonifay	1,400,000	Holmes Creek
Vernon**	126,000	Holmes Creek
Graceville	1,100,000	Holmes Creek
Noma	25,000	Wrights Creek

* System presently being upgraded; spray fields to eliminate all discharge – 2010 completion
** System upgraded; spray fields eliminated all discharge – 2005

The occurrence of stormwater runoff is highly variable, dependent on the amount of rain falling during each storm event and on conditions within the drainage basin. Since most storm events are relatively moderate, natural drainage features typically evolve to accommodate moderate quantities of stormwater runoff. Occasionally, severe storm events create runoff volumes in excess of what these features can handle, resulting in temporary flooding of adjacent land. Periodic flooding is part of the natural cycle of events and often has beneficial effects on the basin ecosystem. Flooding is generally not perceived as a problem until development occurs in the flood prone areas.

The term "stormwater management" refers to comprehensive strategies for dealing with stormwater quantity and quality. The central tenet of these strategies is to ensure that the

volume, rate, timing and pollutant load of runoff after development is similar to that which occurred prior to development. To accomplish this, combinations of structural and non-structural techniques are utilized. Structural techniques emphasize detention and retention of stormwater to reduce runoff rates and provide settling and filtration of pollutants. Non-structural techniques emphasize preservation or simulation of natural drainage features to promote infiltration, filtering and slowing of runoff. The objective of stormwater management is to utilize the combination of techniques that provides adequate pollutant removal and flood protection in the most economical manner.

One of the key principles of current stormwater management techniques is recognition of the need for basin-wide planning. The stormwater management system must be designed beginning with the final outlet point to ensure adequate capacity to handle all discharges from the upstream portion of the basin under conditions present at the time of design. It is then necessary to ensure that subsequent development upstream utilizes stormwater management techniques and systems, which maintain pre-development runoff conditions so that the downstream system is not overloaded. By ensuring that all development within the basin is based on and supportive of a plan for the entire basin, the functions and useful life of both natural and constructed components of the system will be protected and extended.

There are two basic factors involved in establishing a successful stormwater management program around these principles.

- Establishing and applying uniform design standards and procedures

- Ensuring adequate maintenance of system components once they are constructed. The design standard that is of primary importance is the design storm event. The standard specifies the intensity (rate of rainfall) and duration of the rainfall event to be used in the design of facilities.

Data on rainfall intensity and duration have been summarized for various regions of the state by the Florida Department of Transportation (DOT) in graphs such as the one shown in Figure D-3. The curved lines on the graph represent the frequency of occurrence of rainfall events of various intensities and durations (at intervals of 2, 3, 5, 10, 25, 50 and 100 years) for this region. These graphs are used to specify design storm events. The conventional method is to indicate the required frequency and duration of the event, which allows the intensity and total rainfall amount to be interpreted from the appropriate hydrograph for the region. Thus, for the region that Figure D-3 applies, a 10-year frequency/5-hour duration storm event would produce rainfall at intensity of slightly less than 1.1 inch per hour, for a total of around 5.5 inches for the event. Ideally, the selection of a standard design storm balances the cost of structures needed to avoid flooding against savings from reduced flood drainage and disruption of community activities. The design storm must also be compatible with facility design for pollution abatement goals.

Standard procedures for sizing and designing facilities should be a part of the stormwater management program. This will ensure that systems are structurally and functionally compatible. The program should also provide for routine inspection and maintenance of facilities to ensure proper performance during the facility life.

Table D-9. Rainfall for Chipley and Washington County and Surrounding Areas – 2008								
Month	Year	Crestview	DeFuniak Springs	Chipley	Panama City	Apalachicola	Quincy	Tallahassee
Jan	2008	5.74	3.67	5.04	2.86	3.75	3.36	3.53
Feb	2008	5.19	7.92	10.30	11.54	2.88	8.97	8.31
Mar	2008	2.11	2.53	3.38	3.12	3.46	3.66	2.41
Apr	2008	6.65	5.32	5.93	1.78	1.62	5.79	3.74
May	2008	3.46	4.76	2.91	1.77	2.92	1.48	3.22
Jun	2008	4.41	6.02	4.03	5.44	2.42	4.49	5.77
Jul	2008	5.22	5.34	5.65	7.01	4.49	5.99	4.27
Aug	2008	10.26	8.39	10.28	9.46	11.27	17.09	16.52
Sep	2008	1.21	2.42	1.06	0.71	0.20	1.37	1.29
Oct	2008	5.92	4.95	5.11	3.54	3.92	2.98	4.26
Nov	2008	2.95	3.36	2.39	3.18	2.58	7.47	5.68
Dec	2008	7.47	5.06	9.04	6.77	2.01	1.70	1.39
Total	2008	60.59	59.74	65.12	57.18	41.52	64.35	60.39
Source: Northwest Florida Water Management District								

3. Existing Conditions. Washington County is characterized by gently rolling to steeply sloping sand hills in the Western Highlands. The highest elevation in the county, 330 feet above mean sea level, is in this division. The lowest elevation in the County, 10 feet above mean sea level, is located in the Coastal Lowlands. This area is characterized of sand hills with flat woods, river flood plains, and swamps. Average annual precipitation in the County is between 50 and 60 inches, with most rainfall occurring between June and September.

Washington County is in the drainage basin of the Choctawhatchee River and its tributaries that include Holmes Creek, Alligator Creek, Camp Branch Creek, and others. (See Figure D-4). These creeks and their tributaries provide an extensive drainage system. The Choctawhatchee River originates in northern Alabama, entering Florida near New Hope, and flows approximately 89 miles from the Florida-Alabama line to Choctawhatchee Bay. The Choctawhatchee River basin drains roughly 3,300 square miles of northwest Florida; the remainder of the 4,646 square miles of total drainage area is located in Alabama. The average flow of the Choctawhatchee River (21 miles upstream from the mouth) is estimated to be 7,000 cfs. The river carries a relatively high-suspended sediment load throughout the basin, which is deposited in Choctawhatchee Bay. Numerous streams, springs, and lakes characterize this river basin. Holmes Creek is the largest tributary of the Choctawhatchee River discharging an average of 1,050 cfs. The Floridian Aquifer also provides a major source of inflow to the Choctawhatchee River system. The largest cities in the Choctawhatchee River Basin are Chipley, Bonifay and DeFuniak Springs. The major land uses are forestry (58%) and agriculture (26%).

No existing data exists that provides detailed information with regard to the stormwater management systems presently existing within the County. Neither the County nor any of the municipalities have prepared a comprehensive stormwater management plan. The current system of stormwater management facilities consists of swales and open ditches that have been developed over the development life of the County. The primary function of the currently existing facilities is to channel stormwater from roadways. Stormwater facilities

located in the unincorporated portion of the County are operated and maintained by the Washington County Public Works Department and facilities located in the municipalities are operated and maintained by each individual municipality. Facilities located along state highways are operated and maintained by FDOT.

The predominant land use served by all stormwater management facilities located in the County is public (i.e., related to serving transportation facilities). Since the overwhelming portion of the County is undeveloped, existing stormwater management facilities designed to serve the developed areas of the County have generally functioned well in the past. Where feasible, the County requires the use of vegetated swales, sodding, landscaping, and retention of natural vegetation as components of the drainage system for natural runoff through the use of landscape and subdivision rules of the Land Development Code. The County should consider requiring that stormwater management planning and construction of capital improvements coincide with stormwater drainage requirements to adequately address growth and development.

4. Regulatory Framework. Federal and State legislation, and their subsequent regulatory requirements, form the basis for most of the changes in stormwater management programs in Florida in the last two decades. This legislation has expanded the focus of a community's drainage program to include floodplain regulation, water quality management and ecological preservation.

a. Federal. The Federal Water Pollution Control Act 1of 1972 (Clean Water Act) directs federal law with respect to water pollution abatement. In implementing the Act, the Environmental Protection Agency (EPA) identified pollutants carried in Stormwater runoff as a major source of water contamination. Amended in 1977, the law became known as the Clean Water Act and established the basic structure for regulating pollutants being discharged into surface waters.

The U.S. Environmental Protection Agency (EPA) developed the federal National Pollutant Discharge Elimination System (NPDES) stormwater permitting program. Phase I regulates in two phases. Phase I, established in 1990, addresses "large" and "medium" municipalities separate storm sewer systems located in incorporated places and counties with populations of 100,000 or more, and eleven categories of industrial activity, one of which is large construction activity that disturbs 5 or more acres of land. Phase II, promulgated in 1999, addresses requires permitting of construction sites disturbing one to five-acres and municipalities less than 100,000.

b. State. A number of laws in Florida specifically address stormwater management requirements and establish the authority of cities and counties to establish stormwater utilities.

Water Resources Act of 1972. This rule gave the FDEP the responsibility for administering stormwater management program.

Part IV of Chapter 373, F. S. Under the Environmental Reorganization Act of 1993, regulation of state dredge and fill, stormwater quality and stormwater quantity were combined into the Environmental Resource Permitting Program (ERP) under Part IV of Chapter 373, Florida Statutes. The FLDEP and WMDs share implementation of this program depending upon the type of activity that is permitted. In cooperation, both FLDEP and NWFWMD administer this program based on the type of activity involve.

- Chapter 125, F. S. This statute provides both charter and non-charter counties with four important abilities with respect to stormwater management functions

- Establishment and administration of programs for flood and erosion control and drainage

- Creation of municipal service taxing/benefit units to provide stormwater management services in unincorporated areas

- Power to levy and collect taxes and special assessments for provision of municipal services

- Ability to provide drainage services to any municipality or special district through executed service agreements

Chapter 163, F.S. This statute is known as the Local Government Comprehensive Planning Act, requires that each city and county adopt a broad based comprehensive plan that includes sections addressing water supply, drainage, groundwater and aquifer recharge. The Act requires communities to assess problems, identify needs and establish the facilities that will be needed by the community.

Chapter 403, F. S. This provides both cities and counties with three very important authorities with respect to development and operation of stormwater utilities:

- Authorization to create a stormwater utility

- Authorization to adopt stormwater utility fees that are adequate to plan, construct, operate and maintain stormwater management systems

- Authorization to create stormwater management benefit areas and subareas within which all property owners may be assessed a fee related to the benefits they receive based upon the size of their property

- This statute also requires local governments to consider FDEP's and the Water Management Districts' water resources rules when adopting and updating their Comprehensive Plans.

- Chapter 62-25 FAC, commonly known as the Stormwater Rule, establishes certain requirements for attenuation and treatment of off-site stormwater discharges. Prior to the development of this rule, most Florida focused communities exclusively on flood control. However, since the Stormwater Rule was adopted, communities have been required to address water quality in a programmatic manner. Cities and counties in Florida that are subject to the Federal Stormwater NPDES Permitting Program have benefited from their earlier attention to water quality and stormwater treatment that was necessitated by FDEP's development of the Stormwater Rule.

- FEMA Floodplain Management Programs. Until recent years, the Federal government's influence on a community's stormwater program has been relatively minor and limited to interaction with the Federal Emergency Management Agency (FEMA). FEMA, working with local governments, regulates development in the 100-year floodplain and issuance of flood insurance through the Federal Insurance Program its primary institutional objectives. FEMA programs tend to be a voluntary participation process that indirectly affects a community through the rates that the citizens pay for their individual flood insurance policies.

- Stormwater NPDES Permitting Program. The role of the Federal government has become more pronounced in Florida since the emergence **o**f the Environmental Protection Agency's (EPA) Stormwater NPDES Permitting Program. Starting in 1990, EPA required many Florida counties and cities to secure Municipal Separate Storm Sewer System (MS4) Permits for their stormwater discharges to waters of the United States. The MS4 Permit focuses on the reduction of pollutant loads discharged from stormwater outfalls and overall improvement of ambient water quality through the development of an integrated process for prevention, reduction and mitigation of pollutant discharges by citizens and governmental functions, and the education of citizens and governmental employees in the areas of stormwater management and pollution abatement.

c. Local. Washington County has established Stormwater management performance standards that apply to all development within the County. The specific requirements, found in Section 5.06.00 of the Land Development Code, are below.

- While development activity is underway and after it is completed, the characteristics of stormwater runoff shall approximate the rate, volume,, quality, and timing of stormwater runoff that occurred under the site's

natural unimproved or existing state, except that the first one inch of stormwater runoff shall be treated in an off line retention system.

- The proposed development and development activity shall not violate the water quality standards as set forth in Chapters ~~17-3, and 17-2~~5 62-346 of the Florida Administrative Code (F.A.C.).

- 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~~2003)

- Stormwater management/drainage facilities shall be installed by the developer that have been designed in accordance with good engineering principals and the Land Development Code to adequately provide for proper and necessary drainage of all surface water. The design shall include all drainage facilities within the limits of said development, plus all offsite facilities necessary to fully and finally dispose of all runoff such that the following Level of Service Standards (LOSS) are maintained for the applicable development types:

- For development fronting or contributing to stormwater on principal or minor arterial roadways - LOS A for a 50-year, 24 hour storm event.

- For development fronting or contributing to stormwater on collector roadways - LOS A for 25 years, 24 hour storm event

- For development fronting on local streets and residential neighborhoods (including new subdivision) - LOS A for 15 year, 24 hour storm event.

- In agricultural and silviculture areas and along dirt roads in non-subdivided areas - LOS A for 10 year, 24 hour storm event. All development shall also comply with Division of Forestry Best Management Practices. LOS A indicates that there is no significant street flooding. LOS B indicates that there is no major residential yard flooding.

- Use artificial lakes, recharge wells, swales or other means for allowing resorption of storm water where feasible.

5. Environmental Impact. The potential environmental and economic impacts of uncontrolled stormwater drainage have led to a management and regulatory framework established by local, state, and federal government. Severe rain events create runoff exceeding what the drainage system can contain and flooding results. Normally, this is not a problem unless development has occurred in the flooding area. Not only is there a detrimental effect on development when runoff is present, but water quality is affected. Soil carried from more developed areas contain oil, pesticides, fertilizers, and grease end up in the surface waters.

The Florida Department of Environment Protection (FDEP) has adopted a Stormwater Rule (Ch. 17-25, F.A.C.) to fulfill part of the state's responsibilities under Section 208 of the Federal Water Pollution Control Act. The rule's basic objective is to achieve 80-95 percent removal of Stormwater pollutants before discharge to receiving waters. This rule requires treatment of the first inch of runoff for sites less than 100 acres in size and the first one-half inch of runoff for sites 100 acres or greater in size. The requirements of the state Stormwater Rule are considered quite effective in managing Stormwater runoff quantity and quality. This rule does not specifically specify design standards for Stormwater collection and treatment systems. It is concerned with/or directed toward results achieved by the construction of such systems (i.e., the protection water quality standards).

In October 2000, EPA authorized the Florida Department of Environmental Protection (FDEP) to implement the NPDES stormwater permitting program in the FDEP's authority to administer the NPDES program is set forth in Section 403.0885 F. S. The NPDES stormwater program regulates point source discharges of stormwater into surface waters of the State of Florida from certain municipal, industrial and construction activities. As the NPDES stormwater permitting authority, DEP is responsible for promulgating rules and issuing permits, managing and reviewing permit applications, and performing compliance and enforcement activities.

It is important to note that the NPDES stormwater permitting program is separate from the State's stormwater/environmental resource permitting programs (found under Part IV, Chapter 373, F.S. (593KB) and Chapter 62-25, F.A.C. and local stormwater/water quality programs, which have their own regulations and permitting requirements.

Treatment and preservation of water quality is generally accomplished through retention or through detention with filtration. Retention requires the diversion of the required volume of runoff to an impoundment area with no subsequent direct discharge to surface waters. Pollutant removal by settling and by percolation of the Stormwater through the soil is almost total. Detention facilities are typically within the line of flow of the drainage system. Stormwater from a site passes through the detention facility and is filtered prior to discharge to remove pollutants.

Implementation of the Stormwater rule is achieved through a permitting process. In Washington County, FDEP (rather than the NWFWMD) is responsible for the permitting process. Exemptions to the permit requirements are provided for facilities serving individual sites for single family, duplex, triplex, or quadruplex units; facilities serving dwelling unit sites which are less than ten acres in total land area, have less than two acres of impervious area, and which comply with local Stormwater management regulations, or discharge to a permitted facility.

6. Projected Needs. Many of the stormwater management problems areas have been corrected over the past planning period. ~~Also, subsequent to the Tropical Storm Alberto flooding event, the County,~~ Working in coordination with FEMA over the years, the county has made significant stormwater management facilities improvements County-wide and strengthened standards to discourage development within flood hazards areas.

In the future, the County will need to continue to implement the adopted stormwater management provisions of the Comprehensive Plan and the LDC. While the need for a countywide stormwater management Plan is reduced ~~now reduced or eliminated~~ due to the highly rural nature of the area, the adoption and implementation of the Comprehensive Plan and rules set forth in the Land Development Code to ensure the enforcement and compliance of State and Federal regulations, an overall assessment that addresses drainage on a countywide basis should be accomplished. A master drainage plan should be compiled that includes flooding and pollution abatement and preservation of water quality as primary requirements for the County. Improvements necessary to drainage systems within the County to accommodate a 25-year storm runoff should be identified and placed on the Capital Improvements Schedule. The master drainage plan should encompass improvements to the major outfalls and restrictions for development in the 100-year floodplain.

VI. POTABLE WATER AND SUPPLY SUB-ELEMENT

VI. POTABLE WATER AND SUPPLY SUB-ELEMENT

Consistent with Florida Administrative Code section 9J-5.011, the purpose of the Potable Water Element is to assure that necessary public potable water facilities and services correlate to future land use projections. The Potable Water Element support documents provide the data and analysis used as the basis for the goals, objectives and policies included in the element. In an effort to demonstrate the ability to provide adequate water supply for the next twenty (20) years, Florida Legislature enacted bills in 2002, 2004 and 2005 to more effectively address the State's water supply situation. The 2002 legislation added requirements to Chapter 163 of the Florida Statutes (F.S.) for local governments to prepare 10-year water supply facilities work plans and to incorporate certain portions of the work plan into the Comprehensive Plan. The Legislature further amended the plan in 2004 to extend the deadline to prepare a 10-year water supply facilities work plan to December 1, 2006. In 2005, the Legislature enacted Senate Bills 360 and 444, which significantly changes Chapter 173 and 363, F.S. to improve coordination of water supply and land use planning. This legislation strengthened the linkage between the regional water supply plans prepared by water management districts and comprehensive plans prepared by local governments.

Potable water is defined as water that is safe for drinking, culinary, and other domestic uses. In Washington County, individual water supply wells in the unincorporated areas and public water systems within the municipalities are the principal means used for providing potable water. Washington County, along with Northern Okaloosa, Holmes and parts of Bay County obtain their water supply from the Floridan Aquifer

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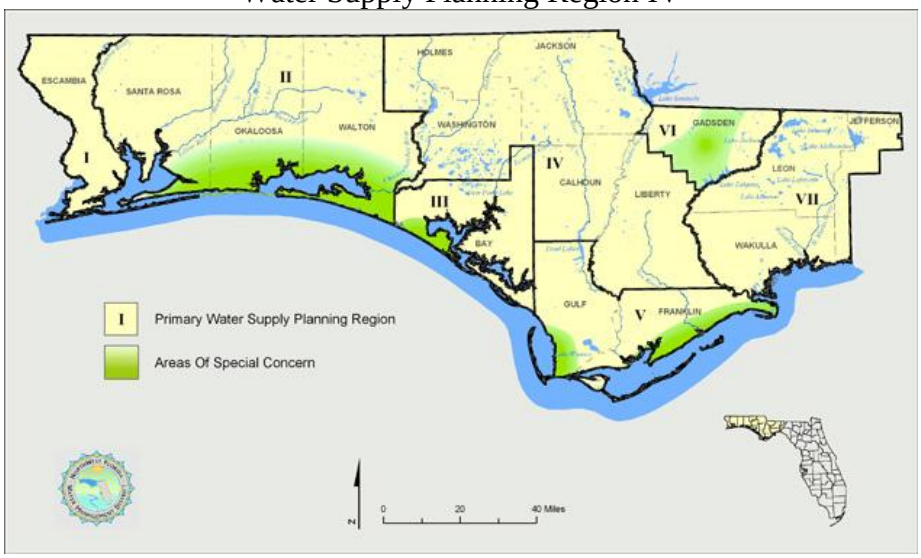
A. Northwest Florida Water Management Water Supply Planning Region IV

Water Supply Planning Region IV is comprised of Calhoun, Holmes, Jackson, Liberty and Washington counties. These are rural counties, with over 77 percent of the population residing in unincorporated areas. Public Supply water use within Region IV is relatively low due to the rural nature of the region. As reported by NWFWMD, the existing and reasonably anticipated ground

water and surface water sources in Region IV are anticipated to be adequate to meet the projected demands through 2030, while sustaining the water resources and associated natural systems. Therefore, no regional water supply plan is recommended at this time.

Water Supply Planning Region IV



- Regional Water Supply Plans
- Regional II Regional Water Supply Plan: Santa Rosa, Okaloosa, and Walton Counties (2000)
- Regional II Regional Water Supply Plan Update (2006)
- Region V Regional Water Supply Plan: Gulf and Franklin Counties (2007)
- Regional Water Supply Plan for Region III: Bay County (2008)

1. Public Water Supply in Region IV. In 2005, Public Supply accounted for approximately 5.27 mgpd or 17 percent of total average regional water use. Marianna, in Jackson County, is the largest public supplier in the region. In Washington County, the largest water user in this category is Chipley. Table D-10 summarizes each Region IV county's use and in the 2005 category with each county in Region IV ranked as to the amount of water usage documented by NWFWMD. Washington County repeatedly ranked third for usage during the period of 2000 to 2000 and is projected to hold that position in the projected period through 2030.

2. Domestic Self-Supply and Small Public Supply Systems in Region IV. Domestic and small supply systems account for 21 percent of the region's total water use

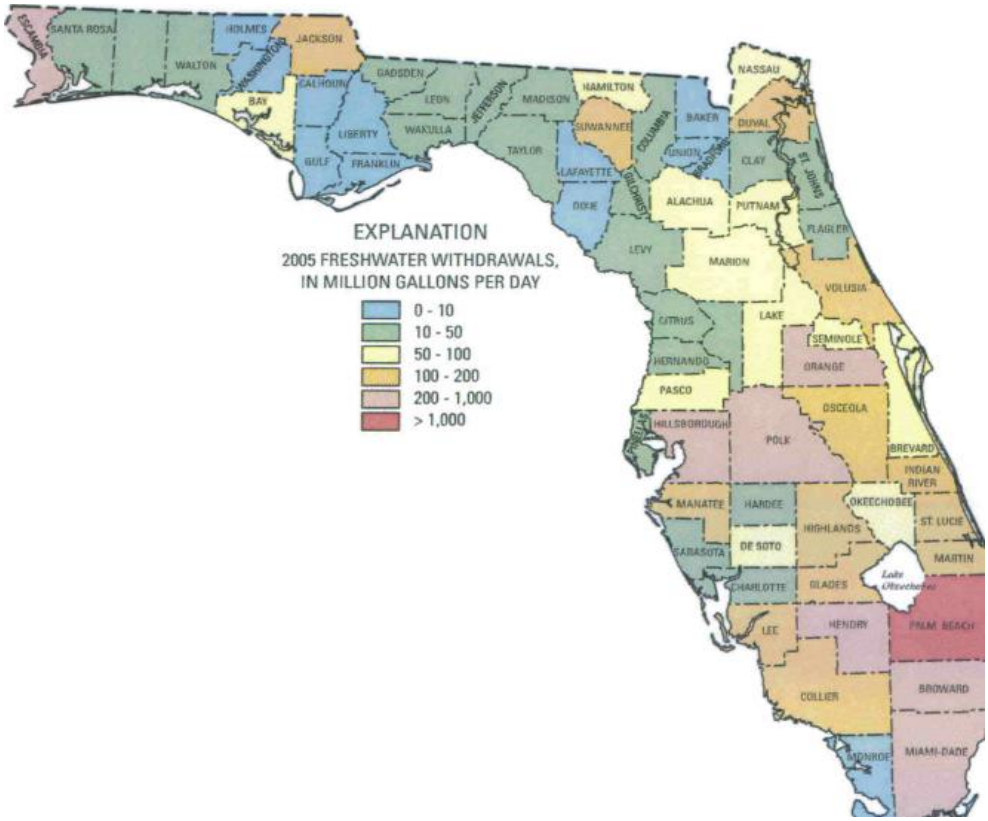
3. Industrial, Commercial, and Institutional Self-Suppliers in Region IV. The largest water user in Region IV is the Florida Department of Corrections in Jackson County.

4. Agricultural Irrigation. In Region IV, the Agricultural category accounts for the largest use of water. It is projected that water use in this category will continue to increase 21 percent by 2025.

5. Power Generation. Only 2 percent of the region's water is diverted for power generation. There is no withdrawal for this purpose in Washington County.

Table D-10. Region IV – Northwest Florida Water Management Water District Water Supply Planning by County and Rankings by Water Use					
	Total Average Water Use (mgd)		Projected Water Uses		
Region IV	2000	2005	2025	2030	Primary Water Sources
Holmes	1.20 (5)	3,15 (4)	3.89 (4)	3.98 (4)	Floridan Aquifer
Washington	4.18 (3)	3.77 (3)	5.42 (3)	4.91(3)	
Jackson	20.74 (1)	38.81 (1)	23.30 (1)	43.98 (1)	
Calhoun	4.99 (2)	3.82 (2)	7.49 (2)	5.90 (2)	
Liberty	1.62 (4)	1.98 (5)	2.03(5)	2.83 (5)	
Source: Northwest Florida Water Management District – Consolidated Annual Report 2008 Ranking of Water Use are enclosed in ( )					

Water Withdrawal Rate for Florida Counties.



B. Washington County Water Supply System

Individual wells serve as the main water source for the majority of the land area in Washington County. Central water is furnished in the municipalities of Chipley, Caryville, Vernon, and Wausau. There are some adjacent areas outside the city limits where when feasible, connections have been made for water services. The proportional capacity from these water systems is shown in Table D-11.

Table D-11. Proportional Capacity for Unincorporated Areas Caryville, Vernon, Wausau, and Chipley Potable Water Systems - 2008

	Caryville	Vernon	Wausau	Chipley
Number Connections Outside City Limits	76	0	25	120
Number of People Served Outside the City Limits		0	60	305
Maximum Demand (gpd) Outside City Limits	60,800	0	18,581	59,281
Percent of Total Existing Demand	10.6%	0	20.6%	
Percent of Total Existing Capacity	8.4%	0	5.16%	
Source: Washington County Planning Office				

The only central water supply for residential use within Unincorporated County is the Sunny Hills subdivision located in the southeastern section of the County. There is no central water supply within the municipality of Ebro or in Unincorporated Washington County. Washington County has no jurisdiction over the system in Sunny Hills as the system is owned and maintained by Aqua Utilities of Florida, Inc. There are several privately-owned water systems in the County. Table D-12 provides an analysis of water demand in the County.

When considering approval of development permits, the County will continue to protect the public wells through setbacks and regulations of adjacent land uses.

D-12. Washington County Water Demand Data (mgd) 2000 – 2020

			Projected		
Average Daily Flow	2000	2005	2010	2015	2020
Water Use Category					
Public Supply	1.27 1.98 0.11	1.34		1.48	1.58
Domestic SS/Small Public SS	0.19 1.24 0,00	2.01	1.41	2.01	2.03
Commercial-Industrial SS	4.79	0.11	2.02	0.11	0.11
Recreational Irrigation		0.19	0.11	0.25	0.25
Agricultural Irrigation		1.32	0.19	1.56	1.70
Power Generation		0.00	1.45	0.00	0.00
Total		4.97	0.00	5.41	5.67
			5.18		

Large Public Supply System Water Use					
Total population served	7,523	8,248	9,077	10,015	11,056
Percent of total population	39	40	41	42	44
Per capita (gal/d)	169	163	155	148	143
Average Daily Flow of Large Public Supply System (mgpd)	2000	2005	2010	2015	2020
Utility					
Caryville					
Chipley	0.09	0.08	0.10	0.10	0.10
Sunny Hills (Aqua Utilities)	0.89	0.62	0.70	0.71	0.73
Vernon	0.17	0.18	0.17	0.18	0.19
Total	0.12	0.14	0.13	0.14	0.14
	1.27	1.02	1.10	1.13	1.16
Source: NWFWMD *NWFWMD Water Supply Assessment Update 2008*					

C. Potable Public Water Service Areas

Figure D-5 is a map of Washington County that displays the service areas for the County where central water systems are located. Shown are service areas for the Cities of Chipley, Caryville, Vernon, Wausau, and the Sunny Hills Subdivision. The City of Chipley is does not actively participate in the Washington County Comprehensive Plan, but water usage is included in this portion of the Plan. Each of the municipalities listed in Section A own, operate, and maintains their water supply systems except the subdivision of Sunny Hills, a planned unit development. The Town of Ebro has no central water system (or WWTP).

1. Town of Caryville. Caryville is located in the extreme northwest corner of Washington County on the Choctawhatchee River, with a large portion of the town located in a flood zone. Transportation routes to the town are I-10, SR 90, CR 279 and CR 173. The frequency of floods and the buyout program of FEMA have contributed to a population decrease for the years between 1990 and 2000. While this recent decrease in population has remained, there has been no significant growth primarily due to development restrictions on areas within the flood plains and the lack of suitable property for development, either for commercial or residential purposes.

   Caryville's sole source of water for public supply withdrawal is the Floridan Aquifer with withdrawal regulated by the NWFWMD. Caryville has two wells which withdraw water from the Floridan Aquifer. Well No. 1 is the primary well and offers primary service and No. 2 is a stand-by well. Both are active wells but are now requiring additional upkeep and maintenance due to their ages and the age of the delivery system. Another well is currently being installed and is expected to be in service before the end of 2009. Growth will continue to be at a minimum due to the location of a large portion of the town within the floodplain. There is a Consumptive Use Permit currently in effect that allows an annual withdrawal of 54.0 mg per year, an average daily withdrawal of 116,000 gpd, and a maximum daily withdrawal of 250,000 mgd per day. In 2008, raw water pumpage records indicate that the Town of Caryville's water system was operating at 45.6% of its permitted annual allocation. The Caryville water system of one water supply well

that produces 125 gpm. A new well is currently being constructed and is expected to be in service by the end of 2010 (Permit No. 0080179-001-WC/20). Currently, one active 75,000-gallon reserve storage tank stores water for emergencies. The current system serves 300 people with an adopted LOS of 125 gpcpd, 250 residential hookups and 3 commercial hookups. The water system is owned and operated by the Town of Caryville.

2. City of Chipley. Chipley is the county seat of Washington County and is located in the northeast corner of the County. This gives the City access to markets in Holmes and Jackson Counties, as well as Washington County. The City is served by several transportation alternatives, including I-10 (with a Chipley interchange), SR 77 which travels north/south and links the Panama City area, two east/west arterials (US 90 and SR 273), and CR 77-A that acts as a major collector. The City is bisected by the CSX railroad system. Amtrak service has been suspended since Hurricane Katrina with no projected date for service restoration. The County's major employers are located within the city limits. There are three public schools and one vocational school located within the city limits. While Chipley's Comprehensive Plan and growth management remains under the control of the City, it is mentioned here due to the significant impact and influence on the rest of the County.

   The City of Chipley's sole source of water for public supply withdrawal is the Floridan Aquifer with withdrawal regulated by the NWFWMD. There is a Consumptive Use Permit currently in effect that allows an annual withdrawal of 900 mg per year, an average daily withdrawal of 800,000 gpd, and a maximum daily withdrawal of 2.3 mgd per day. In 2008, raw water pumpage records indicate that the City of Chipley water system was operating at 53% of its permitted annual allocation. The Chipley Water System consists of four water supply wells that can produce 1,600 gpm when combined. A new well is currently being installed and is expected to be in service by the end of 2009. There is only one active 150,000-gallon storage tank in service for potable water. There is a 300,000-gallon ground storage tank for emergency industrial use and is not intended for use for delivery of potable water. The current system serves 3,639 people with an adopted LOS of 95 gcpd. The water system is owned and operated by the City of Chipley.

3. City of Vernon. The geographical center of the County is Vernon located on Holmes Creek at the crossroads of SR 79, CR 277, and CR 279. Vernon faces many changes with the Florida Department of Transportation's four-lane project of SR 79. This project will result in the taking of property from the downtown business district, creating the need for the town and merchants to look elsewhere for accommodations for a grocery store and other shops. The largest employer within the town is the Washington County School District with three schools located in the immediate area. Other than small businesses, restaurants, gas stations, and a few small shops, there are no major businesses offering employment in Vernon.

   Vernon's sole source of water for public supply withdrawal is the Floridan Aquifer with withdrawal regulated by the NWFWMD. There is a Consumptive Use Permit currently in effect that allows an annual withdrawal of 61.2 mg per year, an average daily withdrawal of 143,000 gpd, and a maximum daily withdrawal of 400,000 mgd per day. In 2008, raw

water pumpage records indicate that the Vernon water system was operating at 48.3% of its permitted annual allocation. The Vernon Water System consists of one water supply wells that can produce 300 gpm. A new well with new delivery system will be installed during the next planning period is expected to be in service by the end of 2011. There is only one active 150-gallon storage tank in service for potable water. The current system serves 744 people with an adopted LOS of 115 gpcpd. There are 405 residential and commercial service connections. The water system is owned and operated by the City of Vernon.

4. Town of Wausau. Wausau is located approximately 6 miles to the south of Chipley on SR 77 and CR 278. The surrounding community is largely residential. Although there are no major employers within Wausau, the Washington County Correctional Institute is located to the south of Wausau and provides employment to some residents within the Wausau municipal limits. No construction funds have been allocated for the Washington County SR 77 four-lane project, but in the event that this project is funded, it is expected that the widening will have minimal impact on the town, as FDOT will utilize a bypass

Wausau's sole source of water for public supply withdrawal is the Floridan Aquifer with withdrawal regulated by the NWFWMD. There is a Consumptive Use Permit currently in effect that allows an annual withdrawal of 46.0 mg per year, an average daily withdrawal of 63,000 gpd, and a maximum daily withdrawal of 126,000 mgd per day. Construction of a new well is expected to be completed by the end of 2010 (Permit T199300930. There is only one active 75,000-gallon storage tank in service. The current system serves 443 people with an adopted LOS of 75 gpcpd. The water system is owned by the Town of Wausau.

Table D-13. Summary of Central Water Supply Systems Sunny Hills, Caryville, Wausau, and Chipley – 2009

	Sunny Hills	Caryville	Wausau	Chipley	Totals
Population Served	1,097	720	310	4,300	6,427
Average Daily Flow	153,749	81,440	53,959	692,451	981,599
Design Capacity	1,584,000	720,000	360,000	1,800,000	4,464,000
Excess Capacity	1,430,251	638,560	306,041	1,107,549	3,482,401
Level of Service (g/c/d)	140.15	113.11	174.06	161.04	NA
Adopted Level of Service	200	125	75	105	NA
Source: Florida Department of Environmental Protection, February 2000.					

D. Other Water Supply Systems

Washington County is composed of 393,000 acres (614 square miles), with 23,040 acres (36 square miles) being water and 368,081 acres (578 square miles) land. The County extends 41

miles north to south, and 44 miles east to west and is landlocked. Much of Washington County is uninhabited, with most of the estimated population of 21,319 residing in or around the municipalities of Chipley, Caryville, Ebro, Vernon, and Wausau, and within the unincorporated area o, and in other developments, which are beginning to occur around the County's many lakes. The County's lifestyle is a rural with most areas sparsely populated. The sparsely residential development utilizes individual wells while commercial businesses and similar uses utilize public wells. Table D-14 is a list of public water wells constructions permits issued in the County.

Table D-14. Public Water Supply Wells Construction Permits for Washington County

Permit No.	Well	Casing	Diameter	Issue Date	City	Type	Depth	Agency
T199700354	90	70	4	12-DEC-96	Vernon	Public supply	20	A. White
M200800634	490	73	6	07-FEB-08	Ebro	Public supply	34	Bear Panama City Warehouse LLC(Lewis)
T200600908	180	170	4	06-DEC-05	Vernon	Public supply	48	Department of Corrections
T200600909	180	170	4	06-DEC-05	Vernon	Public supply	48	Department of Corrections
T199501950	180	170	4	27-APR-95	Vernon	Public supply	55	Department of Corrections
T199402780	440	245	24	02-FEB-94	Vernon	Public supply	107	Department of Corrections/Washington Co.
T199402781	442	261	24	02-FEB-94	Vernon	Public supply	110	Department of Corrections/Washington Co.
T199000268	300	126	4	18-OCT-89	Ebro	Public supply	32	Econo Lodge/Muhammad Amin
P199903572	23	8	6	13-SEP-99	Chipley	Restoration		EZ-Serve Stores, Inc.
T200303181	300	240	4	26-AUG-03	Chipley	Public supply	196	Falling Waters State Park
T200303182	360	280	4	26-AUG-03	Chipley	Public supply	240	Falling Waters State Park
T200302871	400	240	4	22-JUL-03	Chipley	Public supply	165	Falling Waters State Park
M200900467	200	0	8	24-MAR-09	Chipley	Public supply		FDOT (State of Florida)
T200503104	442	245	18	15-AUG-05	Chipley	Public supply	110	Florida Department of Corrections
T199700039	300	220	4	09-OCT-96	Vernon	Public supply	60	God's Vineyard Worship Center
T199500728	37	2	6	30-DEC-94	Chipley	Restoration		Graceville Oil Company/Recovery
M199500087	30	3	6	11-OCT-94	Chipley	Restoration		Mary Wood/Recovery
T200503072	193	116	8	15-AUG-05	Vernon	Public supply		Nestle Waters North America
T200503281	190	135	8	26-AUG-05	Vernon	Public supply		Nestle Waters North America
T198805653	260	140	4	13-JUL-88	Vernon	Public supply	12	New Jerusalem USA, Inc.
T198602553	590	515	4	01-APR-86	Wausau	Sanitation	75	North Florida Building Supply
T200502529	220	85	4	14-JUN-05	Ebro	Public supply	35	Pine Log State Park
T198001239	200	140	4	31-OCT-80	Sunny Hill	Public supply		Roger A. Sanders
T197700269	400		6	15-APR-77	Wausau	Public supply		Sunny Hills Utilities
T200001131	250	147	4	08-MAR-00	Chipley	Public supply	101	Washington Co BOCC, St. Joe Park
T200401792	380	120	4	11-MAY-04	Vernon	Public supply	70	Washington Co Parks& Recreation(Campbell
T197700383	500	162	4	16-MAY-77	Ebro	Public supply		Washington Co. Kennel Club
T200800849	280	120	4	18-JAN-08	Chipley	Public supply	95	Washington County Equestrian Arena
T199901179	200	89	8	22-APR-99	Chipley	Recreation Irrigation	57	WS Co School Bd/Chipley Middle-High

Source: NWFWMD Well Construction Permitting Data Files for Washington County

1. Sunny Hills Planned Unit Development. Sunny Hills is not incorporated but rather a planned unit development located in unincorporated Washington County. The community is located in the southeastern section of the County south of Wausau and north of the intersection of SR 79 and CR 279 (Moss Hill Road). The development contains its own central water and sewer system and has planned sites located within the development for residential, commercial, professional office, recreational/open space, public and semi-public uses. The restrictive covenants of the subdivision, augmented by the Comprehensive Plan, Land Development Code, and the Florida Building Codes, serve as the basic development documents for this development.
   Sunny Hills' sole source of water for public supply withdrawal is the Floridan Aquifer with withdrawal regulated by the NWFWMD. There is a Consumptive Use Permit currently in effect that allows an annual withdrawal of 275,000 gallons per day a maximum combined withdrawal of 545,000 gallons during a single day, and a combined monthly withdrawal of 12,000,000 gallons. There are three wells with the total combined allowed withdrawals not to exceed the above amounts. The average daily withdrawal is 84,806 gpd. There is only one active 87,500-gallon storage tank in service for potable water. Based on 617 residential hookup and 2.43 persons per household, the system serves approximately 1,500 persons with an adopted LOS of 200 gpcpd. The system is owned and operated by Aqua Utilities, Inc. of Florida

2. Florida Department of Corrections. The Washington County Correctional Institute is designated as the Northwest Florida Reception Center (effective 2008). Established in 1994, the facility houses approximately 1,400 adult inmates. There is some staff housing located on the facility also. Three water wells withdraw water from the Floridan Aquifer to supply the treatment facility. Finished water is stored in an on-site 200,000-gallon elevated storage tank prior to being released to the distribution system. The water treatment and distribution facilities provide service solely to the Washington Correctional Institution, adjacent facility for in processing of new inmates and staff housing area. There are currently no plans to expand the facility in the near future.

3. Nestle Waters of North America, Inc. Nestle Waters purchased the Cypress Springs private property in 2003. Rather than pursue the direct withdrawal process directly from the springs, and in spite of the objections raised by a local water protection group, the company applied for and was granted a Department of Environmental Protection (DEP) permit to withdraw water from a well site located approximately 100 feet from the rim of the springs. Since the issuance of the permit for the first well, a second permit has been issued and a second well constructed. The water is not continuously pumped but rather is pumped when the tankers arrive on the facility. Nestle reports that during 2008, the average daily withdrawal was 14,000 gallons but will be higher in 2009. There are two wells onsite with a maximum withdrawal of 460,800 gallons daily for each well.

4. Unincorporated Washington County. The greater part of unincorporated Washington County is provided with water through individual residential wells. As the majority of the population within Washington County is distributed in the rural areas of Washington County, there are no plans to construct any central water supply service areas unless the proposed service has the population base to support the service. The County intends to maximize use of existing facilities and discourage urban sprawl through adoption of land development regulations. The Land Development Code will restrict installation of private wells for potable water where central facilities are available and require coordination of density and intensity of development on the Future Land Use Maps with availability of facilities or areas planned for facility expansion. Mandatory hookups where central facilities are available will be required.

   The County will complete the necessary feasibility study by the year 2012 for the development of a conceptual plan for forming a countywide or area specific water district using a combination of grants, general revenues, special assessments and the revenues from the operation of the system. Funding is expected to be a combination of combination of grants, appropriated funds, special assessments, and the actual operating revenues. Sunny Hills represents the greatest residential concentration in the county making that water system a good candidate for purchase by the County. Upon development of the expansion of the service area and the water facility, it would be to the County's advantage to contract the service facility by either contracting with the Town of Wausau or the City of Chipley or hire an outside firm. Those residents living outside the water service area and agreeing to pay for the installation and hookup fee can be included into the water service areas.

   a. Expansion of Chipley Water Services. . The County will cooperate with the City of Chipley should an extension of city water to the adjacent unincorporated areas south of Interstate 10 be considered. This area has the potential for commercial development if wastewater treatment and water serves are extended into that area. Commercial development along the SR 77 corridor south of I-10 is almost nonexistent as there is no central water and wastewater treatment available. The greatest potential along that undeveloped portion of SR 77 is for motels, restaurants and shopping areas.

   b. Expansion of Aqua Utilities Sunny Hills Planned Unit Development. Extension of current wastewater treatment and central water service is being planned for by Aqua Utilities, Inc. of Florida but only if and when development and construction of residential units justifies the expense of an expansion. Currently, the County requires mandatory hookup to existing service where available when approving development orders. In addition to residential development expected to continue in and around the established areas of Sunny Hills, new development of Unit 12 is expected.

5. Town of Ebro. Existing private water wells and septic tanks serve the Town of Ebro. Unlike other small communities, the lack of funding and a small population base has prevented the construction of a central well and delivery system for the town. There is no public central WWTP and as reported the Washington County Health Department, there have been no identified problems to natural resources. However, due to the continued threat of faulty septic tanks, potential for pollution to the drinking water supply, surface waters, and potential for future growth, Ebro is committed to seek opportunities for grants and funding that will make possible the construction and utilization of a central water system within the Town of Ebro. The growth trends of the town are shown in Table D-15.

Table D-15. Past and Projected Growth of Ebro

1990	2000	2002	2005	2007	2010	2015	2020	2025
255	250	252	261	259	249	252	253	251
Percent Change	-1.96%	0.80%	3.575	-.77%	-3.86%	1.20%	0.40%	-0.79%

Source: 2000 – 2005 U. S. Census Bureau; 2007 – 2025 Projections – Florida Housing Data Clearinghouse

In the past, it has been the position that Ebro does not have a sufficient concentration of population to justify the expenditures necessary for a central water system or WWTP. However, the relocation of the Panama City – Bay County International Airport to the south of the town has the potential of serving as a force for future growth. The 55,000 acres of the Knight Family Trust Properties located to the north and northeast and extending into Ebro, will have great impact on the town should development there occur at sometime in the future.

There are two possible solutions to the lack of lack of central water. One is to purchase water for an initial small base of customers, approximately 80, from one of the two of the existing commercial water wells located at the Washington County Kennel Club and the Lewis Bear Distribution Center. Both are within the city limits and either would have the capacity to handle such an arrangement for two to three years allowing time for the system to go online within a limited area. Establishment of the delivery system and the formation of their own utility services would assist in funding the eventual installation of a municipal-owned public potable well system.

Addition of urban services will make this area very attractive to further development, both residential and commercial. The town is approximately 15 miles from the Panama City – Bay County International Airport and can be expected to attract mixed uses of development at some point.

Type of Land Use	Number of Acres
Residential	317
Commercial	103
Industrial	20
Conservation	2,438
Recreation	11
Public/Semi Public	7
Agriculture/Silviculture	1,066
Total	3,962

E. Water Reuse

Reclaimed water is water that has received at least secondary treatment and reused after flowing out of a wastewater treatment facility. Reuse is the application of reclaimed wastewater for beneficial pur0poses. Reclaimed water is wastewater hat has been thoroughly treated to remove harmful organisms and substances such as bacteria, viruses and metals.

The District's reuse emphasis is placed on permittees located within the two Water Resource Caution Areas (WRCAs). The water use permittees located in a WRCA are required to use reclaimed water unless it is determined to be infeasible. Large water permittees in a WRCA, who generate reclaimed water, are also required to develop, implement, and submit a detailed "Water Resource Master Plan." Currently, Washington County does not qualify as a WRCA. While reuse efforts are concentrated within WRCAs, WFWMD considers this reclaimed water an important component in its overall resource management strategy. The intent of the State Water Policy (Chapter 62-40, F.A.C.) is for all water use applicants to use water of the lowest acceptable quality.

1. City of Vernon Reuse Plan. In 1997, the City of Vernon was placed under a Consent Order by FDEP due to illegal discharges into Holmes Creek, resulting from an undersized treatment facility holding ponds that overflowed into Holmes Creek during heavy rainfall. A 40-acre site was chosen outside of the city limits and resulted in Washington County and Vernon entering into an agreement that would allow Vernon to construct the delivery line to carry the treated water to the spray site. The facility is required to achieve basic disinfection prior to transmission to the spray field.

   The spray field has proved to work very well for the City. There have been no complaints or concerns placed regarding the operation at the site located to the east of Vernon. The water reuse on the site has benefited Washington County as it waters a hay field from which the City is expected to harvest hay to use on various projects within the city. It may be that in the future, other facilities similar to the Correctional Institution located in the Greenhead Community or the Vernon Sportsplex will benefit with use of

the effluent for irrigation of the grounds and playing fields. The most important benefit has been the cessation of effluent wastes into the surface waters of Holmes Creek.

2. City of Chipley Reuse Plan. The city is currently upgrading their WWTP supplemented with a spray field that will be located in the northwest section of Washington County. The water reuse program is expected to be complete sometime in 2010.

F. Needs Assessment

An overall analysis assumes that total county population served by central water and individual well systems will remain constant throughout the planning period, as the county is experiencing growth with minimal impact. This data indicates that the combined capacity of these systems is sufficient to serve the projected population. This fact is supported by NWFWMD's comments in the *NWFWMD District Water Management Plan of 2005* that the current water resources were determined to be adequate through 2025 for the areas outside of Santa Rosa, Okaloosa, and Walton counties.

Currently, Northwest Florida and Washington County has a relatively abundant supply of ground and surface water for the needs of the region and County. While there is an adequate water supply in Washington County, programs and activities will ensure their sustainability. The need for regulatory programs, resource management activities, land acquisition and management efforts and educational programs will continue to be critical to the continued protection of the County and region's water resources. The County will continue to support the Water Management District permitting programs, well construction rules, aquifer protection, stormwater rules, reduction of the use of pesticides, home and industry water conservation, and water reuse programs.

VII. NATURAL GROUNDWATER AQUIFER RECHARGE SUBELEMENT

VII. NATURAL GROUNDWATER AQUIFER RECHARGE SUBELEMENT

A. Aquifer Systems

Aquifers are water-bearing layers of porous rock, sand or gravel. Several aquifers may be present below one surface location, separated by confining layers of materials, which are impermeable, or semi permeable to water. The Floridan aquifer system has been divided into an upper and lower aquifer separated by a unit of lower permeability. The upper Floridan aquifer is the principal source of water supply in Washington County and is the source of many of springs located in the County. Figure D-6 represents the potentiometric surface of the Floridan Aquifer area in Northwest Florida. These maps are developed by the extensive study of well depths throughout the area.

1. Background/Terms and Concepts. The source of water in aquifers is rainfall. Under the force of gravity, rainfall percolates downward through porous surface soils to enter the aquifer strata. Because of the variable permeability of different soil types, the rate of aquifer recharge from rainfall may vary from one location to another. The areas of highest recharge potential are prime recharge areas. The presence of overlying confining beds also determines which surface areas will be effective recharge areas for a given aquifer, and is another factor in identifying prime recharge areas for the aquifer.

   Since aquifer recharge areas are surface features, they are subject to alteration by development. Covering a recharge area with impervious surfaces, such as roads, parking lots and buildings, reduces the area available for rainfall percolation, altering the total rate and volume of recharge in that area. Increasing the rate at which stormwater drains from recharge area surfaces also decreases recharge potential.

   A second concern related to development within aquifer recharge areas is the potential for contamination of ground water within the aquifer. As stormwater runs off to surface waters, pollutants that are picked up by runoff and enter the aquifer can degrade the quality of the ground water. Since water flows within an aquifer in a manner similar to surface water flow, downstream portions of the ground water may be polluted over time. This becomes particularly significant when the aquifer is tapped as a potable water supply downstream.

2. Regulatory Framework.

   a. Federal. U.S. Public Law 93-523, the Safe Drinking Water Act, was enacted in 1974 and amended in 1986 for the purpose of implementing a nationwide system of monitoring and controlling the quality of water supplied by public water systems. The Environmental Protection Agency (EPA) was given authority to administer the act. In addition, the act also required EPA to develop criteria for selecting critical aquifer protection areas. The Safe Drinking Water Act provides for the protection of public water system well fields and aquifers used as the sole source of a community drinking water supply. Amendments provide for well field protection, which require states to work with local governments through the planning process to identify and to protect wellhead areas.

b. State. DEP is responsible for classifying and regulating the use of aquifers pursuant to Chapter 403, F.S., and Chapter 17-22, Part HI, F.A.C. The DEP has also developed increasingly stringent regulatory requirements for facilities that discharge to groundwater under Section 17-4.245, F.A.C., and for those facilities that inject materials underground through deep well injection (Chapter 17-28, F. A. C.). Groundwater quality standards are included in Class G-HI criteria. These criteria mainly set standards for protection of public health in general and the protection of natural systems from toxic substances, but nutrients are not addressed.

The task of identifying the nature and extent of groundwater resources available within the State has been delegated to the Regional Water Management Districts. Each district must prepare and make available to local governments a Groundwater Basin Resource Availability Inventory (GWBEAI), which the local governments are to use to plan for future development in a manner, which reflects the limits of available resources. The criteria for the inventories and legislative intent for their use are in Section 373, Florida Statutes, which reads: Each Water Management District shall develop a Groundwater Basin Resource Availability Inventory covering those areas deemed appropriate by the governing board.

Chapter 163, F.S., the "Local Government Comprehensive Planning and Land Development Regulation Act of 1985," requires local government comprehensive plans to include a topographic map depicting the prime groundwater recharge areas for the Floridan Aquifer as designated by local water management districts. The designation of prime recharge areas is required by Chapter 373, F.S.

c. Local. Section 4.02.00 of the Washington County Land Development Code addresses aquifer protection. Specifically, a 200-foot prohibited development zone is established around the perimeter of all future potable water well fields with a design capacity of one-hundred thousand gallons per day or greater. Within this zone, no development other than public facilities accessory to the water well shall be allowed. Potable water well fields with a design capacity of 100,000 gallons per day protected by a 500 foot restricted development zone, in addition, the Land Development Code states that stormwater management practices shall not include drainage wells and sinkholes for stormwater disposal where recharge is into potable water aquifers. Moderate to high aquifer recharge zones are further protected through the following development restrictions:

- Limiting impervious surfaces constructed within such areas to 50% of the total area of a given parcel
- Allowing only residential, commercial, and/or light industrial uses in such areas
- Requiring all industrial uses located in such areas be serviced by central water and sewer service

- Managing stormwater flow on roadways and development sites so as to eliminate sedimentation and non-point pollution in the surrounding wetlands and recharge zone

- Requiring the use of wastewater package treatment facilities for commercial development in accordance with FDEP guidelines.

3. Existing Conditions. Natural Ground Water Aquifer Recharge Areas. The ground water system underlying Washington County and the municipalities generally consists of three aquifers:

   - Surficial or Water Table Aquifer. The water table aquifer lies just below the land surface and extends throughout the County. It is open to infiltration from rainfall in varying degrees, depending on the percolation characteristics of surface soils and the extent of impervious surfaces, which have been created in the urban areas of the County. The water table aquifer and surface water systems are interconnected throughout Washington County, with the aquifer contributing to base flow levels of the surface waters. The majority of rainfall infiltrating the water table aquifer travels in a southwesterly direction from higher elevations to natural discharge areas such as lakes, streams or marshes.

   - Upper Floridan Aquifer

   - Lower Floridian Aquifer

   - The upper and lower Floridan aquifers lie below the water table aquifer, and are separated by confining layers with relatively low permeability. Only a small amount of the County's average annual rainfall percolates through the confining layers into the Floridan aquifer. Figure D-8 shows the recharge potential to the Floridan Aquifer in Washington County. In contrast to many other areas in Florida, there are few areas of high recharge potential in Washington County. As seen in this figure, there is an area of high recharge potential in the southern portion of the County, and another area in the northwest section. Both of these are located in areas with little or no current development, especially the largest high recharge area that is located in the southern portion of the County. These areas have been correspondingly designated as either agriculture or silviculture areas on the Future Land Use Maps contained in this Plan. The majority of the rest of the County exhibits either low or moderate to low recharge potential.

4. Effects of Development. Figure D-7 shows the most populated and most developed areas in Washington County. The most developed areas are immediately surrounding Chipley, Caryville, Ebro, Vernon, Wausau, and Sunny Hills. Clearly, there is no extensive or intensive development elsewhere in Washington County and indications are that the effects on aquifer recharge have been relatively minor. In the future, expected growth will repeat the past pattern of being slow; this will continue to minimize any potential adverse effects on the aquifer.

In the southern portion of the County, the soils have a high percolation rate and there is as silviculture in the region. Mostly forestland, the land is owned by timber companies and NWFWMD. This use for the most part, precludes contamination of the aquifer. However, the County will encourage lumber companies to comply with Best Management Practices to reduce any potentially harmful effects as part of their adopted LOS standard for stormwater management.

The Floridan aquifer has been tapped for agricultural irrigation use in several portions of the County. Piercing the confining layers of the aquifer for wells creates the potential for interchange of water between aquifers at the well site, in effect creating potential recharge sites. As a condition of issuing a consumptive use permit, the NWFWMD requires protection of the well field area to prevent contamination of the aquifers. There have been no reported incidents of aquifer contamination from permitted agricultural wells in Washington County.

5. Environmental Impacts. The land acquisitions noted above, combined with the resource protection provision of the County's adopted LDC should strongly support long-term protection and viability of the aquifer. The County will continue to require that abandoned wells be plugged only as regulated by FDEP and that the Land Development Code will require these wells be filled when identified as abandoned. Good conservation methods must be followed to conserve the source that furnishes 90 percent of Florida's drinking water and to prevent salt intrusion into the aquifer. Illegal dumping within the County poses a threat to the groundwater especially when the discarded items are tires, paints, oils, and other chemicals

6. Projected Needs for Aquifer Protection. The County shall enforce wellhead protection area regulations for all public supply wells. The established wellhead protection area shall be a 500' radius around the public supply wellhead. Consistent with Florida Department of Protection (FDEP) Rule 62.521.200, F.A.C., land uses or activities prohibited within the wellhead protection area are landfills; facilities for the bulk storage, handling or processing of materials on the Florida Substance List (Chapter 442. F.S.); activities that require the storage, use, handling, production or transportation of restricted substances - agricultural chemicals, petroleum products, hazardous/toxic wastes, industrial chemicals, medical wastes, and the like; feedlots or other concentrated animal facilities; WWTPs, percolation ponds, and similar facilities; mines; and excavation of waterways or drainage facilities which intersect the water table.

VIII. CONSISTENCY REVIEW OF OTHER COMPREHENSIVE PLAN ELEMENTS

A. Background and Overview

State rules require that all elements of the Comprehensive Plan be consistent. Therefore, the goals, objectives, and policies adopted in the Economic Element should be consistent with plan elements that address related issues.

B. Consistency Review

The following presents an analysis of the consistency of the other elements of the Washington County Comprehensive Plan with the impacts created by the Infrastructure Element.

1. Land Use Element. This element is the center of the plan as it coordinates and controls the planning efforts and activities that will happen in Washington County. The intent is to direct the growth and development of Washington County consistent with capital improvements and management of natural resources. It is important to address growth issues without compromising quality of life. This element should prevent sprawl and help direct development to the most suitable areas where infrastructure is available.

2. Capital Improvements Element. The element provides guidance on how Washington County will provide public facilities and serves for existing and future residential and commercial development. The element also addresses how infrastructure improvements will be funded and provides policy guidance on use of local government revenues, development's proportionate share, grants and other sources. Special emphasis is placed on searching for grants monies as a main source of feasible funding for infrastructure.

3. Housing Element. The Housing Element is consistent with the Infrastructure Element. For future consistency, mechanisms to ensure that the necessary infrastructure is available or will be available should to developed and/or improved to ensure that concurrency is met and that urban sprawl is prevented. These efforts, coupled with infrastructure development initiatives that protect natural resources should ensure that the demand for high quality workforce housing can be met by the private sector.

4. Transportation Element. The transportation element appears to be generally consistent with the Infrastructure Element. In the future, the transportation element should identify, prioritize and provide funding mechanisms such that the improvements to the county's secondary and local roadway system can be expedited.

5. Intergovernmental Coordination Element. The Intergovernmental Coordination Element is consistent with the Infrastructure Element. To ensure future consistency, the county as well as all municipalities, should continue to maintain a joint comprehensive plan as well as a one-stop building permitting process and cooperate co-jointly with all federal, state, and local agencies.

6. Public Schools Facilities Element. This element ensures the availability of public schools and the adequacy of school facilities at adopted levels of service (LOS) concurrent with the impacts of development. Ensuring concurrency of the school systems will ultimately serve to support economic development by developing, retaining and attracting talent to the local area.

7. Concurrency Management Element. Application of the policies of this element will ensure the availability of public facilities and the adequacy of those facilities at adopted levels of service (LOS) concurrent with the impacts of economic development. The

infrastructure will include improved potable water and wastewater treatment quality, maintained air quality, stormwater treatment, and maintained adequate traffic flow.

8. Recreation and Open Space Element. This element identifies the community's needs and priorities for the acquisition, development, and long-term maintenance of an adequate parks and recreation system. This element also fosters the development of a comprehensive greenway, equestrian, and a bikeways system that protects natural resources, retention of scenic value, greenhouse gas reduction. The existence of these type facilities and the delivery of recreations services, trails and environmental land will attract both visitors and new industry to the County.

9. Conservation Element. The Conservation Element will provide a framework for the ongoing monitoring, management, and use of the County's natural resources. Washington County is committed to protecting its natural resources and recognizes the critical role of the natural environment in maintaining the quality of life enjoyed by Lake County residents. The County's rural atmosphere, beautiful lakes, and woodlands will continue to attract new residents, businesses, and visitors.

IX. GOALS, OBJECTIVES, AND POLICIES OF THE INFRASTRUCTURE ELEMENT OF THE WASHINGTON COUNTY COMPREHENSIVE PLAN

Pursuant to Section 163.3177 (6) (c), FS and Sections 9J-5.011 (2)(b) and (c), F.A.C, the following represents the Infrastructure Goals, Objectives and Policies of Washington County and the municipalities of Caryville, Ebro, Vernon, and Wausau, Florida. In addition to statutory requirements, the Goals, Objectives, and Policies were developed in keeping with the character, conditions – both environmental and social – and desires of the community.

GOAL 1: The County and municipalities shall provide needed public facilities in a manner that ensures protection of investments in existing facilities, and which promotes orderly growth**.**

Objective 1-1: The County shall, in coordination with the municipalities, implement adopted procedures to insure that, at the time a development order or development permit is issued, adequate facility capacity is available or will be available at the adopted Level of Service Standard concurrent with the impacts of development.

Policy 1-la: The following Levels of Service Standards are hereby adopted by the County and municipalities, and shall be used for determining the availability of service capacity:

INFRASTRUCTURE LEVEL OF SERVICE STANDARDS		
Sanitary Sewer	Location	Level of Service Standards
	City of Chipley	As established in the City of Chipley's Comprehensive Plan. Washington County hereby adopts the same LOS as the City of Chipley for facilities extended into unincorporated Washington County.
	City of Vernon	80 gpcpd
	Sunny Hills	100 gpcpd
	Onsite Sewage Septic Tanks and not served by central sanitary sewer	1.0 per 0.5 acres in parcels of record as of the adopted date of this Plan. Otherwise 1 septic tank per acre
Potable Water	City of Caryville	125 gpcpd
	Sunny Hills Subdivision	100 gpcpd
	City of Chipley	115 gpcpd As established in the City of Chipley's Comprehensive Plan. Washington County hereby adopts the same LOS as the City of Chipley for facilities extended into unincorporated Washington County.
	Town of Vernon	75 gpcpd
	Town of Wausau	146 gpcpd
Solid Waste	County-wide	5.0 lbs per capita per day

Policy 1-lb: Any extensions of existing sanitary sewer services into the unincorporated areas of Washington County shall be in accordance with the adopted Level of Service Standard of the specific facility.

Policy 1-lc: Package sanitary sewer treatment systems shall only be permitted in accordance with FDEP standards and the LOS standards for such facilities shall be established on an individual basis in accordance with FDEP guidelines and the demands placed on each such facility.

Policy 1-ld: The following tiered Level of Service Standards for stormwater management are hereby adopted for the County and municipalities, and they shall be used for determining the availability of service capacity as well as for evaluating development applications relative to the onsite provision of stormwater management facilities and associated water quality control.

Facility	**Location**	**Design Capacity**
Stormwater Management	Development fronting or contributing to stormwater on principal or minor arterial roadways	LOS A for 50 year, 24-hour storm event and treatment retention/detention systems as required by LDRs and State regulation (i.e., 17-25-FAC – without exemptions)
Stormwater Management	Development fronting or Contributing to stormwater on collector roadways	LOS A for 25 year, 24-hour storm event and treatment retention/detention systems as required by LDRs and State regulation (i.e., 17-25-FAC – without exemptions)
Stormwater Management	Development fronting on local streets and residential neighborhoods (including new subdivisions)	LOS A for 15 year, 24-hour storm event and treatment retention/detention systems as required by LDRs and State regulation (i.e., 17-25-FAC – without exemptions)
Stormwater Management	In agricultural and silviculture areas and along dirt roads in non-subdivided areas	LOS A for 10- year, 24-hour storm event and in accordance with Division of Forestry Best Management Practices (as specified below)

Best Management Practices (in accordance with the Division of Forestry's Silviculture Best Management Practices Manual) shall be complied with to control agricultural runoff, erosion and sedimentation from agriculture and silviculture lands and unpaved roads. These implementing mechanisms include, but are not necessarily limited to, such provisions as the following:

a. Water turnouts and broad based dips being used to direct runoff and sediment from dirt road surfaces into the surrounding woods and away from surface waters

b. Water bars being utilized to perform the same function for skid trails and fire breaks

c. Structural solutions such as properly controlled vegetated swales, detention and retention ponds, etc., are being utilized when necessary

d. Dirt roads being closed and stabilized with vegetation when they are no longer in use

e. Dirt roads, skid trails, and fire trails being avoided in environmentally sensitive areas such as wetlands

Policy 1-le: To ensure that Best Management Practices are followed, the County Road and Bridge Department shall be responsible for inspecting once every two (2) years all existing paved and unpaved roads constructed in the County. As newly constructed unpaved roads are no longer accepted as adequate transportation facilities, the County will not inspect or accept any new dirt roads to accommodate new development.

Policy 1-lf: In agricultural areas, Best Management Practices shall also be complied with, and the County shall coordinate with the Soil Conservation Service to ensure that each farm has, and is compliant with, an approved U.S. Soil Conservation Service Plan.

Policy 1-lg: All adopted Land Development Code including regulations governing the provisions and/or construction of stormwater management facilities shall be consistent with State regulations (Chapter 17-25, F.A.C.). *This policy is being met by the County with further discussion in the Identified Issues of this report.*

Policy 1-lh: All stormwater management facilities shall be constructed so as not to cause or contribute to a violation of water quality standards in the waters of the State.

Policy 1-li: Future pollutant load reduction goals for the area's surface waters developed as part of the SWIM program shall be incorporated into the adopted LOS standards for stormwater management.

Policy 1-lj: The County Building Inspector shall, working in concert with the Planning Commission, track facility demand and capacity information as development applications (for development orders and permits) are submitted, to ensure compliance with the Concurrency Management System.

Policy 1-lk: All improvements for replacement, expansion, or increase in capacity of facilities accompanying development permits shall be compatible with the adopted Level of Service Standards for the facilities and shall be electronically entered into the County's ~~Black Bear~~ permit~~ting~~ program to ensure the of levels of service s is consistently met.

Policy 1-1l: The County shall coordinate through the development approval process with its municipalities owning and operating infrastructure facilities, to ensure that proper Levels of Service Standards are maintained in keeping with the Future Land Use Element and Capital Improvement Element of this Plan.

Policy 1-lm: Prior to the execution of future contracts and/or agreements with private contractors for solid waste collection services, the County shall execute an agreement between the County and Springhill Regional Landfill and/or the Bay County Incinerator to ensure the allocation of specific facility capacity to serve the solid waste disposal needs of Washington County.

Policy 1-ln: The County shall continue to prohibit disposal of all hazardous waste in landfills and ~~shall continue to~~ annually inspect 20 percent of all small quantity hazardous waste generators to ensure that such hazardous waste is being collected by a licensed collector/hauler.

Policy 1-1o: Recognizing that both the central water system and wastewater treatment facilities owned by Aqua Utilities, Inc. may not provide adequate utilities infrastructure for the Sunny Hills Subdivision, the County will make recommendations in Aqua Utilities' coordination of expansion plans. Expansion and creation of new facilities are to ensure that facilities are available to support the densities and intensities for the future land use designated within the development.

Policy 1-p: It is the intent of the County to promote an interlocal agreement to promote the extension of the urban infrastructure of central wastewater treatment and central water systems by the City of Chipley to the SR 77 corridor south of I-10 in order to encourage major commercial development.

Policy 1-1q: A "letter of availability" from the private or municipal utility service will certify not only that the capacity is present, but that proper pressure, extension of service lines, and cost will not be a prohibitive factor in the provision of central wastewater treatment and central water to the proposed development site. Upon execution of a formal agreement between the developer and the municipality utility service agreeing to pay for the necessary infrastructure expansion, the developer may continue the appropriate development process with the County planning office.

Policy 1-1r: In cooperation with the municipalities of Caryville, Vernon, and Wausau, the County will support extension of the urban infrastructure of central wastewater treatment and central water systems available within the city limits of these municipalities to the immediate adjacent areas of the city limits to promote new development. Agreements for the developer to pay for these improvements as outlined in Policy 1-1q will be subject to the municipalities' willingness to expand such facilities based on the agreement with developer.

Policy 1-1s: Where possible, the County will support and provide technical assistance in the acquisition of both central potable water and wastewater systems.

Policy 1-1t:
Support technology and business practices that encourage telecommunities and enable people to reduce vehicle miles traveled from home to work. These include the use of home offices and technology such as wireless communications and videoconferencing.

Objective 1-2**:** The County and municipalities will maintain a five-year schedule of capital improvements for public facilities to be updated twice annually in conjunction with the County's large-scale amendment cycle occurring twice a year.

Policy l-2a: Proposed capital improvement projects for this element will be evaluated and ranked in the following manner:

Level 1: To protect public health and safety, to fulfill the County's and municipalities commitment to provide facilities, or to preserve full use of existing facilities.

Level 2: To increase efficiency and reduce operation costs and maintenance.

Level 3: To extend facilities within service areas.

Objective 1-3**:** The County currently requires and shall continue to require the conservation of water resources by implementing Policies l-3a through l-3b.

Policy l-3a: ~~During periods of water shortage or drought, the County shall initiate procedures to restrict potable water usage and agricultural irrigation in keeping with the Water Shortage Restrictions contained in the Northwest Florida Water Management District's Water Shortage Plan, dated March, 1992. Such procedures shall be advertised through public notice.~~ Washington County will develop and maintain updated policies to guide the County and assist the NWFWMD, particularly during times of emergency water shortages and droughts, pursuant to 373.62 and 373.609, Florida Statutes (FS). This assistance shall include, but not be limited to, notices to citizens and public awareness education programs.

Policy l-3b: In order to conserve potable water, the County shall continue to require compliance with the Water Conservation Act of 1982, which requires that all new construction activities and additions to existing structures utilize fixtures conforming to the following schedule of maximum water use:

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	0.5 gallon per (flushing cycle
Water closet	1 .6 gallons per flushing cycle
For SI: 1 gallon = 3.785 L, I gallon per minute = 3.785 *Urn* 1 pound per square inch = 6.895 kPa (.kilopascals) a. A hand-held shower spray is a shower head. b. Consumption tolerances shall be determined from referenced standards. c. Water factor in gallons per cycle per cubic foot	
Source: Florida Building Code – Plumbing (as provided by the Washington County Building Department.	

Policy 1-3c: The County will cooperate with the Northwest Florida Water Management District (NWFWMD) to identify potable water sources sufficient to meet estimated demand.

Objective 1-4**:** The County shall maximize the use of solid waste facilities by continuing to implement a county-wide recycling program in order to effectively reduce the volume of solid waste, as required by the Solid Waste Management Act of 1988 (as amended).

Policy l-4a: The County and municipalities shall continue to actively encourage and educate the public regarding solid waste recycling.

GOAL 2: The County and municipalities shall provide sanitary sewer, solid waste, stormwater management, and potable water facilities to meet existing and projected demands identified in this plan.

Objective 2-1**:** Existing and future deficiencies shall be corrected and prevented by:

a. Continually identifying sources of ground water inflow and infiltration, and develop a program through adoption of the The Land Development Code and the

Capital Improvement Element of this Plan and the City of Chipley's Comprehensive Plan for rehabilitation and future prevention;

b. Cleaning and maintaining existing drainage canals; and

c. Permitting new development only in accordance with State and Federal regulations and this Plan.

Policy 2-la: Projects shall be undertaken in accordance with the schedule in the Capital Improvements Element of this Plan.

Policy 2-lb: No development orders or permits shall be issued for new development that would result in an increase in demand such that the facilities would become deficient (i.e. fall below adopted LOS).

Objective 2-2: The County shall continue to work in concert, through existing intergovernmental mechanisms, with the County Health Department and the State Department of Environmental Protection to ensure that mandatory requirements for siting, installation, inspection, operation, and maintenance of onsite wastewater treatment systems are implemented and maintained.

Policy 2-2a: Use of onsite wastewater treatment systems (including septic tanks and package treatment plants) shall be limited to the following conditions:

a. Existing septic tank and package treatment plants may remain in service providing they are functioning properly in the manner designed and are located in a suitable soil environment;

b. Use of septic tank systems for new development shall be limited to the County areas presently not served by central sewer service and shall only be permitted subsequent to the receipt of all applicable permits, and in accordance with the densities established in Policies 3-1 through 3-11 of the Future Land Use Element;

c. New construction and/or major renovation (more than 50% of structural value of property) located in areas served by central sewer service systems shall be required to connect to central service; and

d. Use of package treatment plants shall be limited to development in areas presently not served by central sewer service and to provide pretreatment of sewage prior to discharge into central sewer systems. The installation of such facilities should only be permitted subject to the receipt of all applicable permits, and the treatment facility shall be established on an individual basis in accordance with FDEP

permitting requirements. New package plants shall be constructed so that future connection to a central system will be compatible.

e. Issuance of septic tank permits shall be prohibited in areas designated on the Future Land Use Map as commercial and/or industrial areas where the use involves the generation, handling, storage, and/or use of hazardous materials in its operation.

In accordance with the existing Subdivision Ordinance, ~~the Comprehensive Plan, and~~ the Washington County Flood Ordinance, and the Washington County Comprehensive Plan the installation of sewage disposal systems requiring soil absorption systems shall be prohibited by the Planning Commission where such systems will not function due to high ground water, flooding, or unacceptable soil characteristics.

Policy 2-2: Both the County and the municipalities will, when evaluating a central wastewater treatment facility, develop facilities and programs for recycling treated wastewater and to promote water reuse through such methods as irrigation.

Objective 2-3: The County shall improve the management of stormwater and the protection of water resources by implementing the following policies.

Policy 2-3a: The County and municipalities shall implement adopted The Land Development Code which shall include provisions for stormwater management.

Policy 2-3b: The County and municipalities shall require implementation of the Division of Forestry Best Management Practices as provided by Stormwater Management Level of Service Standards defined in "Infrastructure" Policy 1-ld.

Objective 2-4: The County and municipalities (including Chipley) shall maintain established coordinating procedures the development review and approval process to ensure that public facilities (including sanitary sewer, drainage, and potable water facilities) are available to meet future needs.

Policy 2-4a: Throughout the planning period, the County Building Inspection Department shall continue to serve as the centralized point for final review of all development orders and permits.

Policy 2-4b: The County Building Inspection Department shall continually monitor development activity and shall annually furnish each operating entity for public sewer and potable water service with a quantitative report of the number of development permits issued in the County as well as in each municipality.

Policy 2-4c: Each operating entity for public sewer and potable water service shall correspondingly provide the County Planning Office with annual reports of facility capacity and use.
Policy 2-4d: To accurately track development activity by location, the County Building Inspection Department shall record location information (i.e., section, township, range, subdivision, name of municipality) on each development permit issued (including the new siting of mobile homes).

Policy 2-4e: The County shall install and maintain a computerized Development Permit Tracking System.

Policy 2-4f: The extension of municipal services to areas outside municipal boundaries will be permitted only if such extensions will not promote urban sprawl.

Objective 2-5: The County and municipalities (including Chipley) shall coordinate to ensure that urban sprawl is discouraged through the utilization of all public facilities, including sewer, potable water, and stormwater management facilities to the greatest extent possible and by implementing Policy 2-5a.

Policy 2-5a: This objective shall be achieved through the implementation of the following:

a. Policy 2-4f above

b. Policies contained in this Plan related to provisions for the sitting of onsite and package wastewater treatment systems

c. The density classifications and geographic land use distributions established in the Future Land Use Element of this Plan

d. The unified Land Development Code

Policy 2-5b: Support planning and design that reduces water consumption per capita and support implementation of water conservation practices. State and federal efforts, including the collection of data and distribution of infrastructure aid and development incentives, must support improved water planning and watershed-level decision making.

GOAL 3: The County and municipalities shall regulate land use to protect the functions of natural drainage features and natural groundwater aquifer recharge areas.

Objective 3-1**:** Consistent with level of service standards for drainage, nonstructural approaches to stormwater management shall be permitted in new development to allow for aquifer recharge.

Policy 3-la: The county and municipalities shall allow for nonstructural stormwater management systems in new development. Nonstructural approaches shall include, but not be limited to, grassed swales and waterways, earthen retention facilities, berms, etc. Such systems shall meet federal, state, and local regulations, as applicable.

Policy 3-lb: Prohibit the alteration of natural watercourses and floodways, unless in the case of a finding of overriding public interest. An overriding public interest shall be based upon reducing the hazards of flooding in areas of development existing prior to the adoption date of this comprehensive plan.

Policy 3-lc: The county and municipalities shall protect the functions of all natural drainage features (such as streams, lakes, wetlands, and estuaries, etc.). The purpose of such protection is to allow for the natural treatment and recharge of water from overland flow, to reduce sedimentation and soil erosion, and to allow for the retention, infiltration, evapotranspiration, and evaporation of water, as well as wildlife habitat and floodplain protection.

Policy 3-ld: Recognize that periodic flooding is natural and acceptable, and therefore. In order to prevent damage to property and life, the County will require that all development within the 100-year floodplain be in compliance with Washington County's adopted The Land Development Code (including their FEMA Flood Damage Prevention Ordinance), state, and federal regulations. Any development encroaching into the 100 year flood hazard area shall provide compensating storage such that no development shall serve to increase the height and/or velocity of regulatory floods.

Policy 3-le: Require that all proposed building and development within the 100-year floodplain shall be constructed consistent with established state and federal standards regulating development within designated floodplains.

Policy 3-1f: If during the development review process, the possibility of a flood zone is identified, a *Flood Elevation Certificate* is required. The Building Inspection Department will ensure the certificate, obtained by the developer, is kept on file in the Building Department.

Objective 3-2: The County shall establish procedures/mechanisms to protect and enhance the natural functions of the natural groundwater aquifer recharge areas, springs, and potable water well fields by implementing the following policies:

Policy 3-2a: The County and municipalities shall maintain wellhead protection zones in the Land Development Regulations.

Policy 3-2b: Land Development Regulations shall require that structures and septic tanks be setback from public and private wellheads in accordance with the requirements of Chapter 10D-6 and 10D-4 F.A.C.

Policy 3-2c: Moderate to high recharge zones of the Floridan Aquifer shall be conserved and protected from contamination and restricted recharge through the implementation of Policy 6-11 contained in the Future Land Use Element.

Policy 3-2d: Based upon the SWIM program for the Choctawhatchee River, Holmes and Econfina Creek projects related to Washington County, the County and municipalities shall coordinate with the NWFWMD to ensure that recommended amendments to this Plan and the The Land Development Code are incorporated in future revisions.

Policy 3-2e: The natural functions of wetlands (i.e., groundwater recharge, wildlife habitat, floodplain protection, etc.) shall be conserved by limiting future development in such areas in concert with the conservation land use classification found in the Future Land Use Element of this Plan as identified as on by the National Wetland Inventory Map.

Policy 3-2f: Structures within 500 feet of a public potable water wellhead will be given priority for the construction of sewer pipelines when such facilities become available in a given locality. Such structures will be given one year to connect to the sewer from the date of notification of availability.

Policy 3-2g: The Land Development Code shall be amended to include provisions for plugging of abandoned wells prior to issuance of development orders or permits. The County may only offer assistance as provided for in existing County policies and all Florida Department of Environmental Protection permitting requirements.

Policy 3-2h: The Land Development Regulations as adopted by the County in 1991 and last revised in 2006~~, to be adopted by October 1, 1991,~~ shall prohibit the siting of potentially adverse land uses, such as dry cleaning facilities, package treatment plants, gasoline stations, and all mining operations, etc. within 500 feet of a public potable water wellhead.

Policy 3-2i: Placement of new wastewater treatment facilities and tanks shall be evaluated for its adverse impact on aquifer recharge and discharge areas, and their vulnerability to contamination shall be assessed before any development is permitted.

Policy 3-2j: Development shall be subject to the following setbacks and buffers:

30 feet	Permanent natural vegetative buffers (or landscaped area as outlined in the Land Development Code) from wetlands jurisdiction line or observed normal waterline – whichever is most. No permanent structures are allowed within this setback and only accessory recreational uses are allowed (dock, piers, and boat ramps) will be allowed. If removal of natural vegetation occurs, then it should be replaced with an approved landscape plan as outlined in the Land Development Code.

100 feet Development setback from ordinary high water mark for all surface water bodies required. Only accessory structures are allowed within this area (dock, piers, and boat ramps).

500 feet Setback for any development from any Public Water Supply Wellheads

500 feet Mining Setbacks from Potable Water Wells. New proposed mines' outermost perimeter must be setback at least 500 feet from any existing public water supply wellheads, or potable water system. Placement of other potable water wells by other developers or property owners will be at the discretion and risk of the developer or property owner.

100 feet Major Managed Areas. A minimum of a one hundred (100) foot permanent natural vegetative buffer shall also be maintained from all major managed areas. Setbacks for septic systems of any type will be 100 feet.

1. Pine Log State Forest;
2. Falling Waters State Recreational Area;
3. Choctawhatchee Water Management Area;
4. Holmes Creek State Canoe Trail; and
5. Econfina State Canoe Trail

50-foot Natural Buffer of not less than 50 feet between different adjacent land uses to minimize land use conflicts.

25-feet Historic. All development (regardless of location) shall maintain a minimum twenty-five (25) foot buffer from known archaeological or historical sites.

25-feet Archaeological Sites. 25-foot and other requirements as dictated by State of Florida.

75-feet Mining. A minimum a 75-foot vegetative buffer from adjacent property line. Buffer shall be adequate in vegetation and buffering to minimize air and noise nuisances in accordance with Section 2.06.02 of the Land Development Code.

100-feet Mining. A minimum a 100-foot vegetative buffer from adjacent property line. Buffer shall be adequate in vegetation and buffering to minimize air and noise nuisances in accordance with Section 2.06.02 of the Land Development Code. Based on particular development facts, the County may require greater buffers if the circumstances indicate the need.

300-feet Karst lakes and springs

Policy 3-2k: No wastewater treatment facility of any type will be placed within 100 feet any first (if identified), second, or third magnitude springs.

Policy 3-2l: The County shall include recommendations for the use of water efficient landscaping in new development projects in Washington County in the Land Development Code.

GOAL 4: The County and municipalities will ensure that high-quality water is made available to meet existing and future demand of the municipalities of Caryville, Ebro, Vernon, Wausau, and Unincorporated Washington County.

Objective 4-1: The County shall monitor projected demands for potable water to maintain adequate Levels of Service of these facilities.

Policy 4-1a. The County and/or municipalities shall encourage growth toward those areas that have available central water and central sewage systems available.

Policy 4-1b: The County and/or municipalities shall provide within the schedule contained in the Capital Improvements Element, those capital improvements projects needed for replacement or correction of existing deficiencies be given priority over providing for future facilities needs. Existing deficiencies or projected needs identified by the County shall be included in annual updates to the Capital Improvements Element.

Policy 4-1c: The County and/or municipalities shall promote the extension of central water and sewer to existing or developing high-density areas and limit expansion into environmentally sensitive areas.

Policy 4-1d: Densities exceeding 3.57 units per acre shall be required to have both central sewage and water.

Policy 4-1e: The County adopts an average daily flow of one hundred (100) gallons per capita per day gpcpd as the design Level of Service Standards for potable water facilities serving the unincorporated areas of the County. For proposed subdivision design, the design rate shall be three hundred fifty (350) gallons per dwelling unit per day.

Policy 4-1f: During any water use restriction as declared by West Florida Water Management District, the County/Municipalities will continue to enforce water restrictions only as necessary.

Policy 4-1g: The County shall provide a water conservation program that stresses education for adults and children concerning practices and methods. This program will address basic and innovative strategies such as water conserving plumbing Fixtures and the use of drought tolerant native vegetation.

Policy 4-1h: The County shall use guidelines as provided by Northwest Florida Water Management to develop a Water Shortage Plan if deemed necessary.

Objective 5: The County shall develop amend the LDC with the following policies for the Choctawhatchee River, Holmes Creek, and Econfina Creek Recharge Area. The Recharge Area shall be determined by the Policy 3-2d:

Policy 5-1: Promote the expansion and installation of a sanitary sewer system,

Policy 5-2: Develop a requirement for enhanced sanitary septic tank standards for all existing platted lots having less than a 1 acre minimum lot area,

a. Require advanced septic systems,
b. Require a minimum separation of 30 feet between all septic system from all wetlands,
c. Require a minimum elevation 6 feet for the placement of septic systems above the mean ground water table,

Policy 5-3: Promote the county acquisition of lots throughout the County via delinquent taxes using a priority criterion:

a. Properties having wetland characteristics,
b. Properties adjoining water bodies,
c. Properties adjoining creeks or steephead ravines,
d. Properties adjacent to other county owned property.