

## CHAPTER EIGHT INFRASTRUCTURE ELEMENT

### EXECUTIVE SUMMARY

The Infrastructure Element analyzes the capacity of Greenwood's public facilities and services to accommodate new development. The Element specifically addresses solid waste, sanitary sewer, drainage, potable water, and natural groundwater aquifer recharge resources.

The Spring Hill Regional Landfill is owned and operated by Waste Management, Incorporated and serves Jackson County, Washington County, southern Okaloosa County, and portions of Calhoun County. The landfill currently has the capacity to accommodate the Town's waste through the year 2002. Waste Management is also actively acquiring land to expand the landfill in the coming years.

The Town of Greenwood is served by private wastewater treatment systems, septic tanks, and other individual domestic treatment systems. These systems must comply with Florida Health and Rehabilitative Services standards, Rule 10D-6, F.A.C.

The Town of Greenwood has public water facilities. These facilities will have more than adequate capacity to provide potable water through the planning period. However, improvements will be required to adequately service undeveloped areas and to improve the Town's fire protection capabilities. To protect groundwater resources, the Town should adopt a wellhead protection ordinance that restricts the use of land within the radii around a community or public well that are specified in Policy 2.2.1 of this element.

INFRASTRUCTURE ELEMENT  
GOALS, OBJECTIVES AND POLICIES

**GOAL 1** - To provide adequate public facilities and services based upon the community's need for environmental quality and financial health.

**Objective 1.1** - To discourage urban sprawl and maximize the use of existing transportation, solid waste, water and wastewater, and drainage facilities, land development regulations shall promote concentration of new development around existing or planned infrastructure. Such regulations shall:

- a. incorporate a point system that will encourage and reward infill development, thereby increasing utilization of existing capacity and discouraging sprawl;
- b. implement a program which includes the reduction of solid waste disposal volume by 30% by 1994; and
- c. coordinate the extension of, or increase in the capacity of, facilities to meet adopted level of service standards.

Groundwater quality shall be maintained so as to meet state groundwater quality standards. Recharge to aquifers shall be maintained so that post-development recharge volumes are at least equal to pre-development recharge volumes. Development within natural drainage features shall not decrease the flood storage capacity of these drainage features or increase flood levels or velocities for all floods that are equal to or less than the 100-year flood.

Policy 1.1.1 - Through the land development regulations, encourage future urban development in areas which are adjacent to locations currently served by existing infrastructure, or where adequate infrastructure can be provided.

Policy 1.1.2 - Development orders will be conditioned to require that users be connected to central water and sewer facilities within one year of such facility or service becoming accessible to the site.

Policy 1.1.3 - Acquired acreage for landfills shall only be put into service to meet demand consistent with adopted level of service standards for solid waste of service jurisdictions.

Policy 1.1.4 - The land development regulations shall enforce standards for construction in the 100-year floodplain. In all cases, standards shall ensure protection of life and property through floodproofing techniques recommended by FEMA. To prevent flooding of adjacent areas, compensatory storage shall be required for all development located in the 100-year floodplain.

Policy 1.1.5 - There are currently no existing facility deficiencies, but at such a time they may exist, the following ranking system shall be used to provide projects that correct existing facility deficiencies:

Level 1: To protect public health and safety, 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 1.2** - Adopt land development regulations, by the statutory deadline, which ensure the use of adopted level of service standards as a means of controlling future uses of land. Such regulations to be adopted by the statutory deadline, shall ensure that sanitary sewer or septic facilities will be provided to accommodate future populations and land uses. Such regulations shall also ensure that the existing and projected needs are met through provisions which ensure that development orders are not issued which degrade the adopted level of service.

Policy 1.2.1 - The following level of service standards are hereby adopted for the Town of Greenwood.

Sanitary Sewer Facilities: 100 gallons per capita per day

Potable Water Facilities: 155 gallons per capita per day

Solid Waste Facilities: 3.3 pounds per capita per day



## Drainage Facilities:

Conveyance Systems - All drainage swales and ditches shall be designed to convey the runoff generated from a 25-year, 24-hour storm event.

On collector roads, culverts and cross-drains shall convey the runoff from a 10-year, 24-hour storm.

On local roads and internal subdivision roads, culverts and cross-drains shall be designed to convey the runoff from a 10-year, 24-hour storm.

Stormwater Management Systems - for development in commercial, urban residential, mixed-use urban land uses districts. Stormwater management systems shall be designed to either retain on-site the runoff generated by a 25-year, 24-hour storm or detain and discharge the runoff from a 25-year, 24-hour storm at peak discharge rates which do not exceed pre-development rates.

Stormwater Management Systems - for development in all other land use districts. Stormwater management systems shall be designed to either retain on-site the runoff generated by a 5-year, 24-hour storm or detain and discharge the runoff from a 5-year, 24-hour storm at peak discharge rates which do not exceed pre-development rates.

## Water Quality:

1. Water quality treatment, in general, shall be provided for runoff from the first one-inch of rainfall; or as an option, for projects or project sub-units with drainage areas of less than 100 acres, from the first 1/2 inch of runoff consistent with Chapters 17-25, F.A.C.
2. Facilities that directly discharge into Outstanding Florida Waters shall provide water quality treatment for runoff from the first one and one-half inch of rainfall;
3. Or as an option, for projects or project sub-units with drainage areas at less than 100 acres from the first 3/4 inch of runoff consistent with Chapters 17-25, F.A.C.

All other discharge facilities shall be designated so as to not degrade the receiving water body below the minimum conditions necessary to assure the suitability

of water for the designated use of its classification as established in Chapter 17-302, F.A.C.

Policy 1.2.2 - The following level of service standard is hereby adopted for the areas of the Town of Greenwood that are served by private, on-site disposal systems.

Sanitary Sewer Facilities: Private, on-site disposal systems shall meet or exceed the requirements set by the Florida Department of Health and Rehabilitative Service, Chapter 10D-6, F.A.C.

Policy 1.2.3 - The following level of service standard is hereby adopted for the areas of the municipalities of Greenwood served, or to be served in the future, by public sanitary sewer disposal systems.

Sanitary Sewer Facilities: Public disposal systems shall maintain a level of service of 100 gallons per capita per day.

Policy 1.2.4 - Implement regulations through the Land Development Code which ensure that development orders are not issued which decrease level of service standards below adopted standards, in conformance with the concurrency requirement of rule 9J-5.

Policy 1.2.5 - In areas served by on-site wastewater treatment systems, final development orders shall not be issued prior to demonstration that appropriate permits for on-site wastewater treatment systems have been obtained.

Policy 1.2.6 - Applications for development approval for sites located in areas identified in the soils map included in the Future Land Use Map Series as belonging to a soils association that poses moderate to severe limitations to development shall comply with 10D-6, F.A.C. Clustering shall be allowed on the portion of the site posing the fewest restrictions, based on the characteristics of the soils of the site.

Policy 1.2.7 - Sanitary sewer systems of the Town of Greenwood are not expected to be expanded beyond currently planned capital improvement programs through the period of this plan. The systems shall be maintained to provide the approved level of service capacities for each system, and safe, efficient service to the populations of the municipalities.



Policy 1.2.8 - Development shall be allowed in areas served by existing sanitary sewer infrastructure, provided all other regulations are met. In those areas not served by sanitary sewer, development may be allowed if septic tank is allowed, pursuant to 10D-6, F.A.C. In those areas where sanitary sewer does not exist at the time of development and septic tanks are not approved by HRS, development shall not take place.

**Objective 1.3** - Maintain a solid waste management program that meets and maintains the adopted level of service through correction of existing facility deficiencies and minimizes adverse impacts on the environment.

Policy 1.3.1 - The County shall designate an individual to serve as liaison to Waste Management Inc. in order to keep them apprised of the potential of increases solid waste generation so they may update their facility expansion plans. The Town shall coordinate with the County and ensure that the Town's needs are also met.

Policy 1.3.2 - The current county-wide recycling program shall meet the goal of 30% reduction of solid waste disposal by 1994. The Town shall participate in the County's recycling program.

**Objective 1.4** - The Town shall correct existing drainage facility deficiencies through: utilizing of SCS erosion and sedimentation control programs, and water quality improvement programs; paving of roads according to adopted level of service standards and the schedule adopted in the CIE.

Policy 1.4.1 The development and adoption of a Stormwater Management Plan shall be completed by 1996 by the County in accordance with the County Plan subject to the availability of funds, which identifies the stormwater quality and quantity deficiencies within the portion of the Chipola River Drainage Basin designated for urban development (i.e. all land use categories other than Agriculture 1, Agriculture 2, Recreation, or Conservation). These studies shall recommend needed drainage improvements and shall analyze whether the adopted level of service standards are appropriate. These studies shall recommend alternative standards, if necessary. The Infrastructure Element of the Town of Greenwood Comprehensive Plan, including the data and analysis, level of service standards, and priorities for replacement of facilities, an analysis of the financial feasibility of correcting existing facility

deficiencies, and providing for future facility needs shall be amended, and the Capital Improvements Element of the Town of Greenwood Comprehensive Plan, including the Five-Year Schedule of Capital Improvements, shall be amended, within twelve (12) months of the completion of each of these Stormwater Management Plans, based on the findings and recommendations contained in these plans.

In the event the study is not completed because of the lack of availability of funds, at the time of the Evaluation and Appraisal Report, the County shall, in accordance with its comprehensive plan, identify alternate funding sources and recommend appropriate funds to complete the study and necessary improvements. As a part of the Evaluation and Appraisal Report, the County shall, in accordance with its comprehensive plan, determine whether stormwater quality deficiencies exist within the developed portions of the Town of Greenwood based on the best data available from the Northwest Florida Water Management District and the Florida Department of Environmental Protection. The Town of Greenwood shall amend its plan to require the completion of stormwater master plans, if water quality deficiencies are identified.

Policy 1.4.2 - The land development regulations shall include development standards, such as maximum impervious surface ratios, native vegetation protection, use of silviculture/agriculture best management practices, and vegetative setback zones, that are designed to preserve natural drainage features such as waterways, wetlands, lakes and floodplains.

Policy 1.4.3 - New development shall comply with the level of service standards for stormwater quality and quantity established in Infrastructure Policy 2.1.

**Objective 1.5** - The Town shall adopt land development regulations by the statutory deadline which ensure that new development and redevelopment does not increase stormwater runoff or flooding problems. The level of service standard for drainage shall ensure that capacity of drainage structures for roads and other development are designed to meet facility needs.

**Objective 1.6** - At this time, there are no drainage facilities with excess capacity; therefore, there is no way to maximize the use of existing drainage facilities. However, the County shall discourage urban sprawl and



maximize use of future facilities through flexibility in the land development regulations to allow drainage facilities to serve more than one function, and to promote the use of regional facilities where they will not contribute to urban sprawl.

Policy 1.6.1 - Planning of Town funded drainage facilities shall be in consideration of regional drainage needs. Oversizing of facilities to accommodate any regional needs should be a priority as long as such oversizing will not contribute to urban sprawl.

Policy 1.6.2 - The Town shall provide incentives for use of pervious pavement in lieu of traditional asphalt in the land development regulations.

**GOAL 2** - Conserve the Town's potable water resources, natural drainage features and groundwater aquifer recharge areas.

**Objective 2.1** - Use sound management practices regarding prime groundwater aquifer recharge areas and natural drainage features through adoption of land development regulations and establishment of coordination mechanisms with federal, state, and local agencies by 1992.

Policy 2.1.1 - Final development orders shall not be issued until the applicant has demonstrated that proper state and federal permits have been obtained for stormwater treatment.

Policy 2.1.2 - Request Technical Assistance from the Northwest Florida Water Management District regarding the protection of high aquifer recharge areas and significant natural drainage features. At such time as these areas are identified, the land development regulations shall be modified to incorporate restrictions in 10D-6, F.A.C. In addition, the County shall forward information related to the location of abandoned wells to the NFWFMD for their implementation of abandonment procedures.

Policy 2.1.3 - Establish minimum design and construction standards for all new development which ensure that post development runoff rates, volume, and pollutant loads do not exceed predevelopment runoff rates.

Policy 2.1.4 - The land development regulations shall use DER rule 17-730, F.A.C. and Chapter 403, F.S.



concerning discharge of hazardous or toxic pollutants in areas of high aquifer recharge.

Policy 2.1.5 - The Town shall, through its land development regulations, protect vital groundwater recharge areas and closely regulate development surrounding areas of prime aquifer recharge by allowing only those land uses, site designs, and on-site stormwater drainage systems that are of a benign or beneficial influence to the prime aquifer recharge area.

Policy 2.1.6 - The generation, use, storage, transfer, or disposal of hazardous materials and hazardous wastes shall be prohibited within areas shown as "High Recharge Potential" on Map 15 of the Conservation Element Technical Support Documents that were submitted with the adopted plan. "Hazardous waste" shall be defined in terms of 40 Code of Federal Regulations Part 261, as modified by Rule 17-730.030, Florida Administrative Code, concerning the definition and identification of hazardous waste. "Hazardous materials" shall be defined as those additional priority pollutants, volatile organics, and trace metals referenced in the Clean Water Act administered by the U.S. Environmental Protection Agency (as may be amended from time to time). This policy shall not apply to small quantity hazardous waste generators, and shall not apply to the sale of agricultural chemicals, provided that an appropriate spill containment and floor drain system is constructed, which shall be designed to hold spilled hazardous materials for cleanup to prevent such material from entering surface waters, groundwaters, or the stormwater drainage system. In addition, monitoring wells shall be installed and utilized for such uses. Furthermore, this policy shall not apply to land uses which are not defined as "development" in s. 380.04, Florida Statutes.

Policy 2.1.7 - Within areas shown as "High Recharge Potential" or "Moderate Recharge Potential" on Map 15 of the Conservation Element Technical Support Documents that were submitted with the adopted Comprehensive Plan, maximum impervious areas, minimum retention requirements for stormwater, or a combination thereof shall be enforced so that post-development runoff volumes from development sites do not exceed pre-development runoff volumes. Within these recharge areas, stormwater runoff from development sites and sanitary sewer effluent shall be

treated so that state groundwater quality standards are not violated.

**Objective 2.2** - Conserve and protect potable water resources from adverse impacts through adoption of land development regulations and coordination with federal, state, and local agencies.

Policy 2.2.1 - An interim Water Well Protection Zone of 400 feet in radius is adopted for each potable water well which serves a "public water system" as defined in Rule 17-550.200, Florida Administrative Code. Except that within areas shown as "High Recharge Potential" on Map 15 of the Conservation Element Technical Support Documents that accompanied the adopted plan, this protection zone shall have a radius of 600 feet. The first 200 foot radius shall be a zone of exclusion, where no development shall be permitted other than parks, except that one single family dwelling shall be permitted on a lot or parcel of record which was created prior to the adoption of the remedial amendments to this plan. Within the remainder of the Water Well Protection Zone, land use and development shall be regulated to prohibit:

- (a) Landfills;
- (b) Facilities for the bulk storage, handling, or processing of materials on the Florida Substance List (Chapter 442, Florida Statutes);
- (c) Activities that require the storage, use, or transportation of restricted substances, including agricultural chemicals, petroleum products, hazardous or toxic waste, or medical wastes;
- (d) Feedlots or other concentrated animal facilities;
- (e) Wastewater treatment plants, percolation ponds, and similar facilities;
- (f) Mines; and
- (g) Excavation of waterways or drainage facilities which intersect the water table.

Developments existing on the date of the adoption of the remedial amendment which first brings the plan into compliance shall not be required to meet this Well Protection Zone standard for any well replacements or new wells on the same lot or parcel which they occupied on the date of the adoption of said remedial amendment, provided



that no contiguous land has since been acquired which would enable this standard to be met. In addition, land uses which, in accordance with professionally acceptable standards and methodology, are estimated to require less than 6,000 g.p.d. of water shall be exempt from this Well Protection Zone standard.

Policy 2.2.2 - The Town shall participate in water conservation and protection programs of the NFWFMD and provide incentives for the use of water conservation devices in all new development.

Policy 2.2.3 - Encourage the use of native vegetation in landscaping, which requires minimal watering.

Policy 2.2.4 - Cooperate with no-watering restrictions of the county, and NFWFMD during declared water shortages.

Policy 2.2.5 - Coordinate with NFWFMD in the protection of aquifer recharge areas after information on prime recharge areas is made available. As an interim measure, the Town shall protect areas of high or moderate aquifer recharge through land development regulations that limit impervious surfaces and require management of stormwater runoff, adopted by the statutory deadline.

Policy 2.2.6 - Enforce state plumbing laws requiring the use of low volume plumbing fixtures for new development.

Policy 2.2.7 - The Comprehensive Plan shall be amended, as appropriate, within twelve (12) months of the mapping of cones of influence by the Northwest Florida Water Management District. These cones of influence shall be designated as wellfield protection zones, and appropriate standards for wellfield protection, as recommended by the Northwest Florida Water Management District, shall be adopted as a part of the plan and the land development regulations.

**Objective 2.3** - There are currently adequate capacity for potable water facilities in the Town of Greenwood. However, improvements will be required to service undeveloped areas and to upgrade the Town's fire protection capabilities. The Town shall ensure adequate facilities needs through the land development regulations, to be adopted by the statutory deadline. The land development regulations shall contain provisions to ensure that development does not take place unless the facilities are available concurrent with the impacts of development.