

**CHAPTER 12**  
**CONSERVATION ELEMENT**

## CHAPTER 12

### CONSERVATION ELEMENT

#### A. OVERVIEW

The Conservation Element provides the framework for the preservation, protection, and enhancement, of the County's natural resources. As such, the goals, objectives, and policies outlined in this Element are strongly intertwined with other elements in the Comprehensive Plan relating to land use, utilities, recreation and open space, transportation, and coastal management. It is the intent of this Element to provide a basis for responsible decision making for the appropriate use of natural resources when confronted by growth and corresponding development, as well as the identification and preservation of ecologically irreplaceable resources.

In spite of rapid urban growth, the County contains a large abundance of high quality natural resources. The need for protection and management of the County's natural resources will continually increase as growth expands. Therefore, this Element is taking a responsible approach toward natural resource protection, recognizing the tremendous contribution of these resources to the quality of life of Volusia County residents and visitors.

This Element divides the goals, objectives, and policies relating to natural resources into four broad categories: water resources; natural communities and wildlife; air quality; and mineral resources.

The Element is directed toward the elimination of any further degradation of the County's lakes, rivers, and estuaries. A program designed to protect the County's cleanest waters has been initiated, along with a sister program of cleaning up the County's more polluted waterways. Provisions for the protection of natural functions of waterbodies, flood plains, and natural drainageways are also included.

Protection of upland and wetland ecological resources is provided for in a number of ways. Large relatively uninterrupted expanses of natural communities are managed more systematically compared to areas of the County targeted for urban growth. Protection of the natural environment in the undeveloped areas is given a high priority, recognizing that these areas contain the highest ecological diversity and functional value. Direction of urban growth away from these areas is a by-product of protecting the natural system. Protection of wetlands is another high priority. Wildlife protection is accomplished primarily by preserving and appropriately managing habitat critical to the survival of wildlife species. Specific programs actively protecting and managing endangered species are also proposed.

Although air quality is not believed to be a significant issue at this time, provisions are proposed to ensure that degradation of the County's air quality is prevented as urban growth continues. This growth will also require an increased need for excavations and fill. Mineral extraction resource areas are proposed such that other types of development will not "lock up" these valuable resources, while minimizing environmental impacts.

Because many of the programs and policies proposed in this Element are technically complex, a reliable database of natural resource inventories, mapping, and quality levels has been formulated. In addition to the management techniques contained in this Element, the County has aggressively protected significant natural resource areas for future generations. This initiative began in 1986 with establishment and implementation of a land acquisition program. This effort was renewed and enhanced in the year 2000 when the county's voters passed a referendum establishing the Volusia Forever Program. This long-term (20 year) initiative will generate approximately 80 million dollars. The Volusia Forever program is intended to acquire and improve environmentally sensitive, water resource, and outdoor recreation lands. In order to promote efficient acquisition efforts and maximize the use of available funds, it is the intention of the County, where feasible, to cooperate with appropriate governmental agencies/jurisdictions and to seek out grants and other sources of support

NOTE: Requirements of this Element relating to groundwater resources and hazardous waste are presented in the Natural Groundwater and Aquifer Recharge, and Solid Waste Elements, respectively.

## B. GOALS, OBJECTIVES AND POLICIES

### WATER RESOURCES

#### GOAL:

- 12.1 Ensure the protection and improvement of the natural functions and quality of Volusia County's Water Resources.

#### OBJECTIVE:

- 12.1.1 To prevent the further degradation of the ambient water quality of the County's surface water resources, and to restore to acceptable levels those surface waters which exceed Federal, State and local pollutant standards.

#### POLICIES:

- 12.1.1.1 An ongoing surface water quality monitoring network, incorporating the standards and activities provided in the Coastal Management Element shall continue. The water quality monitoring network will determine levels and trends of ambient water quality. Criteria and standards for the categorization of water bodies based on ambient water quality shall also be maintained. Degradation of ambient water quality shall be tied to the established categories rather than individual readings.
- 12.1.1.2 The County shall continue to initiate and encourage Surface Water Restoration Programs which will, at minimum: identify and initiate the cleanup of highly polluted aquatic systems; identify those areas of the County where on-site sewage disposal systems are determined to be, or have the potential to be significant surface water pollution sources; and coordinate with stormwater facility redesign activities where necessary.

- 12.1.1.3 The County shall continue to regulate channelization or impoundment of the County's surface water bodies to the extent that such activities shall be limited to: those operations necessary to correct existing threats to public health or safety; maintenance of existing navigational waterways, as needed; and for reasonable access to water dependent shore-based facilities. In such cases, adverse impacts to the biological attributes of the water resources and water dependent natural ecosystems shall be mitigated through shoreline restoration, preservation of shoreline habitat, and/or mitigation fees.
- 12.1.1.4 On-site sewage disposal systems and associated drainfields shall continue to be limited within the flood plain of surface water bodies as provided for in land development regulations, to the extent that such systems are designed and located so as to not contribute to the degradation of ambient water quality.
- 12.1.1.5 The most current best management practices which control erosion and limit the amount of sediment reaching surface waters shall continue to be required and encouraged for construction, agriculture, silviculture, excavation, dredge and fill, and stormwater management activities.
- 12.1.1.6 The County shall ensure that discharge of wastewater effluent into surface water bodies will not result in the lowering of the ambient water quality (as indicated in Policy 12.1.1.1), when such information is available, unless such discharge can be shown to be in the overriding public interest.
- 12.1.1.7 The County shall ensure that stormwater management systems which discharge into surface water bodies shall not degrade the ambient water quality (as indicated in Policy 12.1.1.1) of the receiving water body, when such information is available.
- 12.1.1.8 The County shall coordinate with the SJRWMD to ensure that withdrawal of surface waters for purposes such as irrigation and freeze protection will not degrade ambient water quality, as indicated in Policy 12.1.1.1, when such information is available.
- 12.1.1.9 Those standards for marina siting as provided in the Coastal Management Element shall be applied throughout the County.

**OBJECTIVE:**

- 12.1.2 To protect and enhance the natural hydrologic functions and wildlife habitat attributes of surface water resources, including estuarine and oceanic waters, as well as waters which flow into estuarine and oceanic water, and the floodplains associated with these waters.

**POLICIES:**

- 12.1.2.1 Natural shoreline buffers or setbacks shall remain established for surface water bodies, the extent of which will depend on, at minimum: existing soils; cover and type of vegetation; topography; wildlife habitat; ambient water quality; and the protective status of the water body.

- 12.1.2.2 Where possible, Environmental Systems Corridors shall connect with significant surface water resources, particularly those which have special protection status.
- 12.1.2.3 Removal or control of submerged, emergent, or floating vegetation shall continue to be limited to that necessary to provide reasonable access, and aquatic weed control as defined by the appropriate agencies. Any use of chemical herbicides for such purposes shall ensure that water quality and ecological integrity are not degraded.
- 12.1.2.4 Vertical seawalls and bulkheads along the banks and shorelines of naturally occurring surface water bodies shall continue to be limited to those instances where serious threat to life or property can be demonstrated. In such cases, utilization of sloping stabilization methods combined with vegetation shall be used as an alternative to vertical seawalls and bulkheads where feasible.
- 12.1.2.5 Headwater areas of significant surface water resources shall continue to be protected through land use controls, public acquisition, easements, or other appropriate methods.
- 12.1.2.6 The County shall coordinate with the SJRWMD to ensure that withdrawals from or discharges to surface water bodies which alter hydroperiods or water stage levels do not adversely impact water dependent ecosystems and aquatic habitats.
- 12.1.2.7 Undisturbed segments of flood plains associated with surface water bodies shall continue to be protected through public acquisition, land use controls, conservation easements, or other methods as appropriate.
- 12.1.2.8 Proposed structures located within the flood plain of surface water bodies and within flood prone areas, shall continue to be required to utilize building methods as provided in land development regulations, to the extent that fill material required for construction or other impervious surfaces will not reduce the ability of the floodplains to store and convey floodwaters, or degrade the natural physical and biological functions of protected habitat without approved mitigation. Impacts of fill in the floodplains and floodprone areas shall be considered both site specifically and cumulatively.
- 12.1.2.9 Dwelling unit densities shall continue to be limited within the flood plains of surface water bodies and in other flood prone.
- 12.1.2.10 The County shall coordinate with the National Estuary Program and continue to protect the Class II Waters of Mosquito Lagoon.

**OBJECTIVE:**

- 12.1.3 To protect and appropriately utilize the physical and ecological functions of natural drainageways and drainage patterns.

**POLICIES:**

- 12.1.3.1 Land planning and development proposals shall continue to identify areas where soils, vegetation, hydrogeology, topography, and other factors indicate where water flows or ponds. These areas shall be utilized to the maximum extent feasible, without

significant structural and natural habitat alteration, for on-site stormwater management, and should be integrated into an area-wide stormwater management design. Where wet detention systems are employed, they should mimic natural systems as appropriate.

- 12.1.3.2 Significant natural drainageways shall be identified and incorporated into the Environmental Systems Corridor network, where appropriate.
- 12.1.3.3 The Deep Creek/Haw Creek drainageway shall be protected through public acquisition, land use controls, or other methods deemed appropriate.
- 12.1.3.4 Certain types of isolated wetlands (such as smaller, degraded cypress domes, wet prairies or bay heads), may be considered for integration into a stormwater management system. In such cases, hydroperiods and stage elevations shall be designed to maintain the appropriate wetland community, and shall provide for first flush diversions.

## NATURAL COMMUNITIES AND WILDLIFE

### GOAL:

- 12.2 Protect, conserve, and enhance the ecological resources of the County, maintaining their quality and contribution to the quality of life and economic well-being of Volusia County.

### OBJECTIVE:

- 12.2.1 To provide for the protection of areas determined to be environmentally sensitive, and direct growth away from such areas.

### POLICIES:

- 12.2.1.1 Existing, relatively uninterrupted expanses of natural resources contained within the County shall be managed as an individual unit, providing natural resources the highest degree of protection in land development decisions and planning. These lands shall comprise the Natural Resource Management Area (NRMA) established in the Future Land Use Element.

Criteria: Areas included in the NRMA consist of, in whole or a portion of at minimum: the St. John's River Valley; Talbot Terrace; Pamlico Terrace; Rima Ridge; and Turnbull Hammock. Site specific boundaries shall be based on soils, topographic, and vegetative data, particularly that which is outlined in Policy 12.2.2.1.

- 12.2.1.2 The County shall promote land use activities compatible with the intentions of the NRMA through the establishment of special use areas, the boundaries of which to be determined by resource data including: ecological community mapping as stated in Policy 12.2.2.1, USGS Topographic maps; National Wetland Inventory maps; Florida

Natural Area Inventory records; available wildlife data; and site specific field information. These special uses:

- a. **Environmental System Corridor (ESC)** - These consist of important ecological corridors consisting of environmentally sensitive and ecologically significant lands. Land use activities occurring within these corridors shall not degrade their natural functions and connections. The intention is to provide protected, natural pathways which connect to other protected areas such as parks, conservation lands and water bodies. ESC's shall include significant interconnected natural systems of environmentally sensitive lands, connecting to and including conservation areas where possible. The ESC's are not intended to include pre-existing improved, cultivated, or developed lands unless such lands contain unique or exceptional ecological value. Conservation and silviculture, utilizing best management practices, will be the preferred use, however, other compatible passive agricultural activities may also be permitted such as, unimproved pasture. The primary consideration of compatible agriculture should be potential adverse impacts to the short and long term ecological stability of the system, as well as adjacent lands and waterways. All land parcels or lots created for single family dwellings after the effective date of the Comprehensive Plan shall contain no more than 1 dwelling unit per 25 acres.

The Environmental System Corridor configuration displayed on the Future land Use Map is intended to show a generalized location for the corridor. Actual boundaries will be established utilizing the County's vegetative mapping program. Each corridor will be reviewed to determine the boundary in relation to a proposed development based upon site specific information and features and other planning related data. Any adjustments will be included in the next amendment cycle.

- b. **Forestry Resource** - The Forestry Resource category is designated on lands that are primarily suited for silvicultural uses. However, other limited agricultural activities may be appropriate. Silvicultural uses consistent with State prescribed Best Management Practices will be encouraged by the Forestry Resource category.
- c. **Low Impact Urban** - Lands within the NRMA which are determined to be suitable for urban type development, and are adjacent to existing urban development, may be designated as a Low Impact Urban Zone category. Any land use considered to be urban may be permitted within this zone, but shall comply with standards consistent with the provisions of the NRMA. These standards shall include, at minimum: a requirement to be serviced by central utilities; designation of at least 50% of required open space as provided for in land development regulations to be preservation of upland habitat sited in an ecologically strategic manner (e.g., adjacent to wetlands); and clustering of residential dwelling units.

12.2.1.3 The County shall maintain established criteria and standards for the mitigation of environmentally sensitive wetlands and associated critical habitats which are destroyed or altered. The standards shall provide for, at minimum, collection of a mitigation fee to

be used specifically for the acquisition and management of environmentally sensitive lands, and/or preservation or replacement of like kind habitat.

- 12.2.1.4 Land use activities adjacent to environmentally sensitive lands, including conservation areas designated in the Future Land Use and Recreation/Open Space Elements, shall be limited to non-intensive uses such as Environmental Systems Corridors, Forestry Resource, Agriculture, rural, or low impact urban. Otherwise, proposed land use activities must ensure that such activities will not degrade the natural physical, biological, aesthetic, or recreational functions of such lands.
- 12.2.1.5 Lands/areas proposed for acquisition under the Volusia Forever Program shall be processed and evaluated in the manner specified by the applicable County Resolution.
- 12.2.1.6 Preservation of land and environmental resources (flora and fauna) may be accomplished by both fee simple and less than fee simple acquisition techniques.

**OBJECTIVE:**

- 12.2.2 To minimize, and eliminate where reasonably achievable, impacts to ecological communities which degrade their natural physical and biological function as a result of land development activities.

**POLICIES:**

- 12.2.2.1 The County shall continue to monitor, and periodically update a mapping inventory of ecological communities by type (as indicated by vegetative composition), including at minimum:

Wetland Communities

estuarine marsh  
mangrove swamp  
freshwater marsh  
wet prairie  
bottomland hardwood swamp  
cypress swamp  
bay head swamp  
mixed hardwood swamp

Uplands Communities

pine flatwood  
mixed hardwood hammock  
oak hammock  
cabbage palm hammock  
pine/xeric oak forests  
scrub oak thicket  
sand pine forest  
coastal scrub  
grassland and shrub

- 12.2.2.2 In conjunction with the Florida Natural Areas Inventory, East Central Florida Regional Planning Council (ECFRPC), and the Florida Fish and Wildlife Conservation Commission (FWC), and based on the information generated from the data inventory as stated in Policy 12.2.2.1, the County shall determine those ecological communities which are rare, endangered, or of special concern either by type and/or geographic location. Such communities shall be considered environmentally sensitive, and receive appropriate protections as outlined elsewhere in this Element.

- 12.2.2.3 Based on the County's ecological data inventory, the County shall consider potential site specific, off-site, and cumulative impacts to ecological communities as indicated in Policy 12.2.2.1 for land development proposals.
- 12.2.2.4 The County has established criteria and standards for an Environmental Impact Assessment (EIA), to ensure protection of the Natural Resources Management Areas (NRMA). The EIA shall provide for a multi-level application process, depending on the scope and location of proposed land development projects. At minimum, the EIA shall incorporate into a single package the permitting requirements for: wetlands protection; tree protection; surface and stormwater management; land clearance; air quality; protection of environmentally sensitive lands and critical habitats; and protection of endangered species.
- 12.2.2.5 The County shall require clustering of dwelling units and/or open space for land development projects which contain environmentally sensitive lands and critical habitats within its project boundaries, in order to preserve these resources.
- 12.2.2.6 The County shall consider the abundance, status, and distribution of endangered ecosystems and other environmentally sensitive lands when reviewing land use proposals and acquisitions.
- 12.2.2.7 The County shall coordinate with appropriate governmental entities to protect environmentally sensitive lands which extend into adjacent counties and municipalities.
- 12.2.2.8 Existing expanses of upland native vegetation shall be incorporated where appropriate into site and landscaping plans of proposed land development projects.
- 12.2.2.9 Activities for the restoration and improvement of altered/degraded areas located on properties owned by the County shall be incorporated, where appropriate and feasible, into the management plans for said properties. At a minimum, these activities should include practices for the control of invasive, exotic, plant species.

**OBJECTIVE:**

- 12.2.3 To eliminate any net loss of wetlands and prevent the functional values of such wetlands to be degraded as a result of land development decisions.

**POLICIES:**

- 12.2.3.1 Coastal and riverine wetlands shall be preserved wherever possible. In cases where adverse impacts to such wetlands are found by the County to be necessary to the overriding public interest, appropriate mitigation as specified in Policy 12.2.3.5 shall be required. In those instances where coastal and riverine wetlands are found to be functionally degraded, restoration of such wetlands may be considered as appropriate mitigation.
- 12.2.3.2 Proposed activities within the NRMA (Policy 12.2.1.1) shall avoid adverse impacts to wetlands and their associated natural physical and biological functions, except in cases

where it can be demonstrated to be in the overriding public interest. In such cases, appropriate mitigation as outlined in Policy 12.2.3.5 shall be required. Wetlands which are shown to be functionally degraded shall be targeted for restoration.

- 12.2.3.3 Proposed activities within urban, rural, or agricultural land use categories as indicated on the Future Land Use Map (those which are located outside of the NRMA) shall protect or enhance existing wetlands. Interior isolated wetlands which are shown to be significantly degraded, or cover small areas, may be modified to a form more suited for urban, rural or agricultural wetland functions, while allowing no net loss of wetlands. The County shall maintain acceptable criteria and designs for wetland modification, and shall address, at minimum, provisions for:

Maintaining, at least partially, stands of old mature forested vegetation; planting of littoral shelves and shorelines with appropriate vegetation in cases where an open water system will be created; an overall wetlands management plan which will discuss water levels and quality, and the ability of the wetland to attract and harbor wildlife species which are compatible in an urban, rural, or agricultural setting. This provision for wetland modification shall not be allowed in wetlands which are known or are found to provide habitat to wildlife species which are state or federally listed as rare, threatened, endangered, or of special concern, or locally designated as such.

- 12.2.3.4 Natural Buffer Zones or setbacks shall be required landward of all protected wetlands occurring in unincorporated Volusia County.

- a. Natural Buffer Zones for wetlands occurring within the NRMA shall be determined on an individual basis with standards and formulas derived for the following criteria, at minimum: existing soil erodibility; cover and type of vegetation; slope; water table depths; water quality; wildlife; and the protective status of the receiving waters. Natural buffer zones shall consist of intact natural communities comprised predominantly of appropriate native vegetative species in the overstory, shrub, and understory layers. Activities within the Natural Buffer Zone shall be limited to those which are shown to be consistent with the intended use of this zone while providing for reasonable access to water bodies.
- b. Proposed activities adjacent to isolated wetlands occurring outside the NRMA shall have yard setbacks or natural buffers measured from the upland/wetland interface, as determined by vegetative dominance. Wetlands which are hydrologically connected to a surface water body, and not located within the NRMA, shall require a natural buffer zone consistent with the standards provided in Subsection (a).
- c. In cases where the alteration of the Natural Buffer Zone is determined to be unavoidable, appropriate mitigation shall be required.

- 12.2.3.5 If, by restriction of attainment of reasonable use through the County's land development regulations, it is determined by the County that wetland alteration is unavoidable, mitigation proposals shall be considered, which should include restoration of existing degraded or converted wetlands, or creation of new wetland habitat. Such

mitigation activities shall replace like land habitat and function with an intended result of a no net loss of wetlands. Preservation of upland habitat may be considered in certain instances if deemed appropriate but shall be considered in conjunction with mitigating wetland losses. In no case shall mitigation activities degrade critical upland habitat.

- 12.2.3.6 In lieu of mitigation requirements stated in Policy 12.2.3.5, the County may collect a mitigation fee which will fund an off-site wetlands mitigation bank program. Toward that end, the County shall identify areas which are suitable for such purposes, primarily where important wetland habitats have been converted, and shall direct off-site mitigation efforts to these designated areas, which should be located within the same watershed as where the impacts will occur. To increase the program's effectiveness, the County shall coordinate with and seek the support of regional, state, and federal regulatory agencies as well as the municipalities within the County.
- 12.2.3.7 The dwelling unit density standard for wetlands in determining overall project densities for the purposes of clustering units shall be one unit per 10 acres of wetland, with the exception of the Forestry and Environmental Systems Corridor special use categories (see Policy 12.2.1.2.) which shall correspond to the minimum lot size for those categories.
- 12.2.3.8 Volusia County shall require that the most up to date Best Management Practices (BMP's) be used for all silvicultural activities proposed in wetlands. Agricultural operations will continue to be encouraged to be consistent with applicable Natural Resource Conservation Service and Cooperative Extension Service BMP's to ensure wetlands are not adversely impacted by such activities.

OBJECTIVE:

- 12.2.4 To protect habitats of wildlife species occurring in the County, particularly those which are threatened, endangered, or of special concern, to maintain, and enhance where necessary, existing species population numbers and distributions.

POLICIES:

- 12.2.4.1 The County's automated ecological community information will be used as base data for determining the presence of listed wildlife species and related habitat. Other information, including field visits will be used to determine the presence of listed wildlife within the County. This information shall help determine type and occurrence of critical wildlife habitat, and boundaries of the NRMA and ESC's.
- 12.2.4.2 Land development proposals shall continue to be required to protect ecologically viable habitats and prepare a suitable alternative management plan when state or federally listed vegetative and wildlife species occur within project boundaries.
- 12.2.4.3 The County, under the current protected species policy, shall continue to review projects which may impact critical habitats. The type and occurrence of critical habitats shall be determined by the County and the appropriate federal (USFWS) and state

(FWC, FDEP, ECFRPC) agencies. These development reviews shall address at minimum:

- a. proper siting of development structures and infrastructure, including clustering of dwelling units away from critical habitats;
- b. management plans which protect endangered wildlife which utilize critical habitats;
- c. mitigation plans for critical habitat which is unavoidably altered;
- d. restrictions of the use of critical habitats to those which are found to be compatible with the requirements of wildlife species which are threatened, endangered, or of special concern.

12.2.4.4 Where feasible, the County shall protect critical habitat through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate.

12.2.4.5 The County shall continue to implement management plans for: sea turtles and manatees. The County shall continue to expand the management scope of suitable public lands within the County to ensure the long-term vitality of specific listed species including: scrub jays, southern bald eagles, gopher tortoises, red cockaded woodpeckers, black bears, southeastern beach mouse and piping plovers. County land management shall also consider non-listed wildlife populations and continue to explore management techniques to ensure biodiversity of plant and animal species on suitable public lands. At minimum, these management efforts and plans shall:

- a. provide for the coordination of federal, state, local, and private activities involving protection of the particular species;
- b. establish public education programs;
- c. provide for the minimization of activities which directly or indirectly adversely impact the particular species listed above;
- d. establish management standards for habitat restoration and enhancement, and/or relocation of species where appropriate.

12.2.4.6 In conjunction with the directives of Policies 12.2.4.1, 12.2.4.3, and 12.2.4.5, respectively, the County shall utilize federal and state management guidelines for the particular endangered species in reviewing land development and land management proposals.

12.2.4.7 The County shall protect the natural resource values, particularly those relating to wildlife habitat and aquifer recharge of Rima Ridge through public and/or private easements, public acquisition, land use regulations, or other methods deemed appropriate.

12.2.4.8 The County shall continue to reduce, and eliminate where possible, pollution activities which adversely impact endangered species, including illegal dumping of solid and

hazardous waste and littering near open water bodies, and the County should discourage the outdoor release of balloons.

12.2.4.9 Marine, brackish, and freshwater habitats necessary for the continued ecological and economic stability of fisheries, aquaculture, and other water dependent wildlife have been identified and shall continue to be protected through, at minimum, coordination with the FWC, Florida Department of Environmental Protection, and other governmental agencies as appropriate.

12.2.4.10 The County shall protect manatees by, at minimum, implementing Phase I (02/19/01), and Phase II (10/19/05) of the State approved Manatee Protection Plan for Volusia County; including protection of manatee habitat; enforcement of boat speeds, safety and water sport activities; utilization of the most current state and federal boat facilities permitting standards relating to manatee protection; provision of educational programs, and dissemination of materials about manatees and their protection at boat launch and marina facilities.

## AIR QUALITY

### GOAL:

12.3 Maintain and improve air quality for the protection of the natural environment and the health, safety, and welfare of the citizens of Volusia County.

### OBJECTIVE:

12.3.1 To maintain the current high levels of air quality to comply with ambient air quality standards as established by United State Environmental Protection Agency (EPA) and FDEP.

### POLICIES:

12.3.1.1 FDEP continues to maintain an air quality database. Air quality data shall be incorporated into an EPA approved air quality model which will be used to determine the impact of proposed development on ambient air quality.

12.3.1.2 Businesses which request development orders after 1991 shall be required to install all State pollution control devices and practices, and demonstrate that all necessary air quality permits have been approved prior to occupancy.

12.3.1.3 As specified in the Transportation and Capital Improvements Elements, Volusia County shall encourage alternative modes of transportation by, at minimum: expanding its mass transit system, exploring alternative fuel vehicles, setting up a County-wide car pooling information network, promoting the use of bicycles by requiring bike facilities, requiring improved pedestrian sidewalks on and off site, building and/or constructing vehicle parking bays and passenger shelters to accommodate buses and ride-shares.

- 12.3.1.4 Industrial facilities which emit air pollutants shall be sited to avoid detrimental impacts to schools (grades K-12), nursing homes, residential neighborhoods and highly urbanized centers to reduce adverse impacts of air pollution on adjacent residents.
- 12.3.1.5 Industrial parks, industrial subdivisions, public and private utilities, and arterial roads shall have a vegetation buffer between them and other land use types. This buffer shall include a mix of both taller overstory trees and shrubs (scrub, bushes, etc.). Vegetation with a high carbon dioxide/carbon monoxide exchange shall be required in the buffer (i.e., broadleaf species appropriate for site conditions, such as oaks, sycamores, and other hardwoods) in places where there are no existing trees and planting is required.
- 12.3.1.6 Volusia County shall continue to act as a clearing house for air quality information and directives which shall entail, at minimum:
- a. reduce dependence on and increase efficiency of air-conditioning units (i.e., greater use of fans, strategic location of trees, and buildings);
  - b. discuss the problem of vehicle emissions to air quality;
  - c. encourage businesses, to institute flexible or rotating work schedules to reduce peak traffic.
  - d. encourage the banning of smoking in businesses and work places.
- 12.3.1.7 Volusia County shall ensure that state and local regulations pertaining to open burning are enforced and that alternatives to open burning of debris from land clearing, such as composting, mulching, or chipping facilities, are encouraged.
- 12.3.1.8 Where appropriate County transportation projects, new or expanded, shall include: bicycle facilities, sidewalks (except in controlled access facilities), parking bays for buses, and passenger shelters for both public and private bus or ride sharing programs.
- 12.3.1.9 Volusia County shall monitor the air quality within its buildings in order to protect the health and welfare of all persons using the buildings. Such measures shall include: periodic monitoring of air quality for radon, formaldehyde, asbestos, carbon monoxide, mold, mildew, fungus, smoke, fumes, and other pollutants; banning smoking in all County buildings; the installation and proper replacement of high efficiency air filters; installation and proper maintenance of central vacuuming cleaning systems to prevent the build-up of airborne contaminants in conditioned, non-industrial work environments. The Facilities Services Manager shall conduct monitoring activities and supervise this activity.

## MINERAL AND SOIL RESOURCES

GOAL:

12.4 Conserve and appropriately use mineral and soil resources.

OBJECTIVE:

12.4.1 To minimize the impacts of mineral extraction activities on natural systems, while allowing appropriate utilization of the mineral resources.

POLICIES:

12.4.1.1 Prior to 1999, the County shall identify those areas with the highest suitability for mineral extraction, based on the quality of mineral deposits, and the patterns of land use and natural systems, and shall prevent the premature encroachment of incompatible land uses into these areas.

12.4.1.2 Mineral extraction activities proposed outside of the areas identified in Policy 12.4.1.1 shall be adequately buffered from residential areas to avoid adverse fluctuations of groundwater levels to nearby individual well systems, and to minimize noise pollution.

12.4.1.3 Proposed mineral extraction activities shall continue to minimize impacts to environmentally sensitive lands and critical habitats. In cases where adverse alteration of such lands are unavoidable, appropriate mitigation shall be required.

12.4.1.4 The County shall continue to implement standards for reclamation of excavation sites so as to resemble a natural system to the greatest extent feasible, including, at minimum:

- a. creation of sinuous shorelines;
- b. bank gradients properly sloped to establish planted littoral shelves with appropriate submerged and emergent vegetation;
- c. fish stocking, if warranted;
- d. ambient water quality testing;
- e. completion of the reclamation plans;
- f. compliance with standards established for artificial lakes by the SJRWMD and other appropriate agencies.

OBJECTIVE:

12.4.2 To incorporate the inherent limitation of existing soils in land planning and development, and minimize impacts which result in soil erosion.

POLICIES:

- 12.4.2.1 Prior to any land disturbance, development activities shall indicate on a site plan areas of highly erodible soils, as defined by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) or the Florida Department of Agriculture, and take adequate measures to ensure that soil erosion is avoided, including utilization of all appropriate Best Management Practices.
- 12.4.2.2 Building construction in soils which are determined to be hydric in character, as defined by the NRCS and the Florida Department of Agriculture, shall be regulated to the extent that proposed construction activities will not adversely impact the natural physical and biological functions of protected resources without appropriate mitigation.
- 12.4.2.3 Silvicultural and agricultural activities shall utilize the most current Best Management Practices to prevent soil erosion and subsequent siltation of surface water bodies.