

## SECTION 9: WATER RETURN MANAGEMENT PRACTICES

### Background

Different wastewater management practices return water to surface water bodies at varying rates, and therefore contribute in varying degrees to consumptive use.

All of these considerations will be relevant considerations in decisions about the appropriate mix of return management practices that will be specified in regional water development and conservation plans.

### On-Site Sewage Management Systems

On-site sewage management systems have been effectively used to address domestic wastewater management in Georgia for decades, and it is expected that there will be many more such circumstances in the future where this choice will be an effective water quality management practice. Although an effective water quality management practice, on-site sewage management was never intended to be a management practice aimed at the fairly immediate return of water to the network of streams from which that water might have originated. Depending upon soil and geological conditions, on-site sewage systems can be slower to return water to streams than centralized wastewater treatment systems that return water to streams via direct discharges.

Long-term, a significant portion of the water that is discharged from septic systems returns to groundwater and contributes to stream baseflow, and so can be available for downstream users. In the shorter term, however, returns to surface water can lag to varying degrees under varying circumstances. While the exact quantity and timing of returns will vary with location and other site conditions, some portion of the water treated in septic systems is not returned to the water source in a time frame that allows contemporary users of that water source, and users of hydrologically-connected adjoining water sources, to make corresponding reasonable use of that returned water.

This short-term lag contributes to the cumulative consumptive use in a sub-basin or watershed. The significance of this component, however, will vary for different water sources. There are also significant information gaps and legitimate scientific debate about rates and timing of surface water returns from on-site sewage systems under varying conditions throughout Georgia. In addition, current and projected population density, as well as infrastructure conditions and costs, need to be considered when evaluating use of on-site wastewater management versus centralized wastewater treatment.

### Policy: On-Site Sewage Management Systems

- (1) Properly sited, constructed, and maintained on-site sewage management systems are a cost-effective, long-term option for meeting public health and water quality goals, particularly in less densely populated areas.

- (2) Depending upon soil and geological conditions, on-site sewage systems can be slower to return water to streams than centralized wastewater treatment systems that return water to streams via direct discharges. While the exact quantity and timing of returns will vary with location and other site conditions, some portion of the water treated in septic systems is not returned to the water source in a time frame that allows contemporary users of that water source, and users of hydrologically-connected adjoining water sources, to make corresponding reasonable use of that returned water. For practical purposes, this temporarily absent water contributes to the cumulative consumptive use in a sub-basin or watershed.
- (3) Managing the effect of on-site sewage management systems on the quantity of water returned to surface water sources may be a component of managing consumptive use. The significance of this component will vary with the condition of individual water sources and the characteristics of the uses of that source. This component of consumptive use is more important to manage in areas where the source of the water is surface water, and where consumptive use from that source is approaching its consumptive use assessment.

### Implementation Actions

- (1) The Division's guidance for regional planning written pursuant to section 14 of this plan may address region-specific benchmarks for return flows to individual water sources and mechanisms for meeting those benchmarks. This guidance will be based on the best available information on quantities and timing of surface water returns from on-site systems in different parts of the state. The guidance will recognize the factors that determine the relative significance of this component of consumptive use of individual water sources and the factors that can determine the feasibility of different return management practices in different regions.
- (2) During preparation of regional water development and conservation plans, mechanisms to adjust the future use of septic systems as necessary to meet benchmarks for return flows will be considered following guidance to be provided by the Division.
- (3) On-site sewage management systems shall continue to comply with Department of Human Resources Rule 290-5-26.
- (4) Use of on-site sewage management systems shall comply with provisions for water quality management practices specified in section 13 as well as the provisions specified here.

### Land Application Systems

Similarly, land application systems are an effective wastewater management practice, which should continue to be used under appropriate circumstances. Land application systems, however, can also affect the quantities and timing of returns to surface waters. Again, the concern here is the short-term lag in returns.

In the future, evaluation of the use of land application systems must consider the extent to which these systems lag the return of treated wastewater to streams when compared to central wastewater treatment that returns water via direct discharges. As with on-site sewage management systems, there are considerable information gaps about rates and timing of returns from land application systems. The limited body of work to date suggests that, under some conditions, the lag in returns can be relatively short. More information, however, is clearly needed.

#### Policy: Land Application Systems

- (1) Land application systems have been effectively used for two decades to manage the introduction of waterborne pollutants into surface water, and must continue to be used as a water quality management practice under appropriate circumstances.
- (2) Land application systems can affect the quantities and timing of returns to surface waters. Some portion of the water treated in land application systems is not returned to surface waters in a time frame that allows contemporary users of that water source, and users of hydrologically-connected adjoining water sources, to make corresponding reasonable use of that returned water. For practical purposes, this short-term lag in returns contributes to the cumulative consumptive use in a sub-basin or watershed.
- (3) Managing the effect of land application systems on the quantity of water returned to surface water sources may be a component of managing consumptive use. The significance of this component will vary depending on the condition of a water source and the characteristics of its use. This component of consumptive use is more important to manage in areas where the source of water is surface water, and where consumptive use of that source is approaching its consumptive use assessment. The quality of the receiving waters and the availability of assimilative capacity is also a factor that has to be considered in evaluating new land application systems. Region-specific benchmarks may be established as guidance for return flows to individual water sources, but shall not be used as permitting criteria for land application systems, unless and until there is better consensus on the scientific validity of these criteria and the Board of Natural Resources in its discretion has adopted the criteria as part of the permitting requirements for such facilities.

#### Implementation Actions

- (1) The Division's guidance for regional water planning written pursuant to section 14 of this plan may address region-specific benchmarks for return flows to individual water sources. Regional plans for use of land application systems will conform with benchmarks for return flows to the water source(s) within a water planning region, following guidance to be provided by the Division and as consistent with DNR Rule 391-3-6-.03(2)(b).
- (2) Land application systems will be permitted and managed following the provisions of DNR Rules 391-3-6-11, 391-3-6-.19 and 391-3-6-.24.

#### Centralized Wastewater Treatment

Water Pollution Control Plants provide relatively rapid returns of water to surface water sources. Since returns to surface waters are not significantly delayed, contemporary users of that water source, and users of hydrologically-connected adjoining water sources, are able to make corresponding reasonable use of that returned water.

#### Policy: Centralized Wastewater Treatment Policy

- (1) Water Pollution Control Plants can provide relatively rapid returns of water to surface water sources.
- (2) Managing the return of water to surface water sources by Water Pollution Control Plants must be a component of managing consumptive use.
- (3) Where water quality or quantity considerations dictate the reuse of effluent, the effluent should be used as a replacement for another generally higher quality water source.

#### Implementation Actions

- (1) Water Pollution Control Plants will be permitted and managed following the provisions of DNR Rule 391-3-6-.06