Draft **Item 5 BSWCD Programs**

**Flooding**

The BSWCD began evaluating flooding along Bradford County’s Creeks and lakes after Tropical Storm Debby in June 2012. The BSWCD examined the drainage infrastructure in Bradford County to get a better understanding of the conditions that contributed to the flooding from Debby. Water levels at drainage canals, creeks and rivers were measured from bridge and culverts elements of roads in the County. The data collected along with the data Suwannee River Water Management District (SRWMD) surface water level monitoring network allowed the BSWCD to identify locations where water levels could be easily monitored and highwater levels could be used to warn downstream residents of the potential for flooding.

A Flood Warning Plan was submitted to the Bradford County Sheriff in September 2017. Hurricane Irma occurred in October 2017 before the plan could be initiated. Flooding occurred during the night and people awoke to flooded homes, apartments, and cars.

The BSWCD’s post storm evaluations of Alligator Creek, Lakes Sampson and Crosby and the Sampson River reveled significant blockages to flow from trees across the channel and accumulation of trash and debris. A major factor in flooding in Starke resulted from a major blockage just downstream of the Highway 301 bridge over Alligator Creek. Flooding around Lakes Sampson and Crosby were likely made worse by blockages along the Sampson River

After Hurricane Irma in 2017 the BSWCD urged Bradford County to apply for a USDA NRCS Grant to cover the cost associated with removing debris and sediments deposited in Alligator Creek and the Sampson River. Bradford County received a $2,494781 USDA NRCS grant to do the debris and sediment removal.

During 2022 the BSWCD drafted a report titled FloodWise Communities Stormwater System Vulnerability Assessment for a project lead by the University of Michigan.

**Surface Water Level Monitoring**

Surface water level monitoring is continuing and provides important data on the stream conditions, the impact of rain patterns on lake and stream levels, the impacts of Chemours discharges on Alligator Creek levels and the impacts of the SRWMD Edwards Bottomlands Project on Alligator Creek levels up stream of 310. Trees across creeks and canals can block or slow waterflows. Sediment accumulation can slow flows and reduce channel capacity. Reduction in flows and channel capacity increase the risk of upstream flooding.

The SRWMD the Edwards Bottomlands Project appears to be causing high water levels along Alligator Creek up stream of the Project. This impact is demonstrated by the fact that 8 of the last 10 historic crests at the Alligator Creek gauge just upstream of the Project have occurred after the completion of the project. The creation ox bows the failure to control invasive plants and other plant growth, the failure to remove trash and debris, and sediment accumulation restrict the flow through the Edwards Bottomlands Project.

The water level data can be used to identify sections of drainage system that require attention.

**Local Mitigation Strategy Workgroup**

The BSWCD participates in the Bradford County Emergency Management’s Local Mitigation Strategy Workgroupand provides input about flooding issues. The BSWCD assisted Bradford County Emergency Management staff draft a SRWMD R.I.V.E.R grant in 2021 to remove aquatic vegetation in Lake Sampson at the point where water flows from the lake into the Sampson Canal/River. The vegetations reduces flow and causes higher lake water levels than would occur in a vegetation free channel. The grant was not funded.

**Surface Water and Groundwater Quality Monitoring Program**

Turbidity

Sediment accumulation is a significant problem in Bradford County’s drainage infrastructure.

Water turbidity can be sued as a method to measure sediment from erosion. In FY 22 the BSWCD purchased equipment to analyze turbidity.

The BSWCD is currently sampling 20 to 25 sites monthly and after significant rain events.

Iron

During the surface water level monitoring of Alligator Creek near its headwaters at the confluence of the DuPont Industrial Wastewater canal and Alligator Creek significant growth of iron bacteria was observed on aquatic plants. DuPont/Chemours used iron salts to treat its Industrial Wastewater to meet discharge standards.

In FY 22 the BSWCD purchased equipment to analyze for water for total iron content.

Because of elevated levels of iron in groundwater in the groundwater monitoring wells associated with the Chemours facility the BSWCD is initiating an iron monitoring program of private wells. That program is scheduled to being in May.

**Invasive Plant Monitoring and Control**

**Alligator Creek Invasive Plant Monitoring and Control Program**

The Alligator Creek Invasive Plant Monitoring and Control project began in 2007 and was supported by two Pulling Together Initiative Grants from the National Fish and Wildlife Foundation between 2008 and 2011. The 2008 grant was for $17,600 with a $24,440 match in volunteer effort and the 2011 grant was for $20,000 with a $24,000 match in volunteer effort. The project focused on a section of Alligator Creek from the Laura Street bridge in Starke to Lake Rowell.

In November 2021 the BSWCD initiated a research project on a 2.5 acre parcel at the old Starke dump at Alligator Creek which is outside the Edwards Bottomlands Project. We are monitoring invasive plant populations and using mechanical methods to control the invasive plants that are present on the site.

**Edwards Bottomlands Project Monitoring**

The BSWCD monitored the SRWMD Edwards Bottomlands Project construction from the Edwards Road Park and began monitoring the site once construction was completed in July 2021. The Project is a wetland mitigation site constructed with FDOT mitigation funding. The BSWCD has raised concerns about the design, construction, planting, and maintenance of the site and the impacts of the project on upstream flooding.

The BSWCD monitors invasive plant population, trash and debris accumulation, erosion, sediment accumulation, planted native species, and general conditions of the site. Conditions of the site are recorded using digital images and video.

**Public Education**

In February, 2024, the BSWCD organized an evening workshop in cooperation with extension staff from Clay, Baker, and Union Counties, USDA, North Florida Land Trust, and Alachua Conservation Trust, FDACS, Division of Forestry, and FWC.

The BSWCD is initiating an 'On the Ground’ tour series with a special tour of Wetland Preserve in Putnam County on April 5th, 2024.

**Youth Education**

The BSWCD supports youth in agriculture through Bradford County Fair youth exhibitor awards through donations to 4-H and the organizations who organize the swine, goat, cattle, and small animal exhibits and shows.

The BSWCD supports youth in agriculture through awards to poster and speech contest participants.

**Environmental Permit Review and Comments**

The BSWCD reviews and comments on environmental permits submitted to SRWMD, FDEP and ACOE. Significant effort is made with respect to the permits associated with Chemours heavy mineral sands mining and processing facilities in Bradford County.

**Reviews of Subdivision Plates**

Policy V.3.2 The County shall submit proposed subdivision plats to the Soil and Water Conservation District and request the District’s review and comments regarding topographic, hydrologic and vegetative cover factors in order to identify procedures for the protection and conservation of the natural functions of soils by the proposed development.

The BSWCD began doing reviews of Subdivision Plates in 2024”