

Water Treatment Plant Upgrade Meets New Demand

Once again, McCrone had the opportunity to assist Kent County, MD in completing a substantial water treatment plant upgrade to meet the increased demand of the Town of Worton’s residential and commercial customers. Our long-standing relationship with the County’s Department of Water and Wastewater Services (DWWS) has enabled McCrone’s Public Works team to provide the agency with detailed studies, design, and construction management services since the early 1990s.



Worton WTP 163k GPD, Kent County, MD.

Kent County DWWS has had a history of success with the existing treatment process of oxidation, clarification, followed by filtration. The goal of this project was to expand treatment capacity without increasing complexity for the operators. Thus, McCrone designed around use of the existing manufacturers and technology in order to increase capacity at the Worton Water Treatment Plant (WTP).

McCrone’s Preliminary Engineering Report analyzed the Worton Priority Funding Area, and determined an ultimate flow from developed and undeveloped parcels within that area. Existing water and sewer infrastructure were then compared to the ultimate flow in order to determine deficiencies. The report was completed in accordance with USDA Rural Development guidelines. This made the project eligible for grants and loans, and was used to secure funding from USDA Rural Development.

The master plan for the Worton WTP includes upgrading its capacity to 300 GPM in two phases. Phase 1 (recently completed) upgrades the plant to 200 GPM. McCrone’s design increased the pumping capacity from the existing raw water wells, added an additional Microfloc clarifier, relocated and upgraded the existing distribution pumps, added a greensand filter, and provided a backwash recycling system.

As part of the design, a pre-engineered metal building is furnished for the additional Microfloc clarifier which allows one of the Microfloc units to be taken down for maintenance or repair if needed.

A key challenge during the upgrade was to keep the water treatment plant online for continuous service to the existing users. The McCrone Public Works team developed a sequence of construction during design that allowed the plant to remain online during the entire construction period, except for a few single day outages. During the single day outages, potable water was still provided to the existing customers via the existing elevated storage tank.

Room was made for a third Microfloc unit by relocating the existing distribution pumps. Below grade and above grade piping associated with the third Microfloc clarifier is provided in the design for easier future expansion.



View from on top of the clarifier where the first step of treatment occurs. All equipment shown is new inside the new Worton WTP building.

During the final stages of design, there were concerns from the citizens of Worton regarding the aesthetics of the water treatment plant since it is located in the center of Worton on the main road (MD 297). McCrone contracted with Torchio Architects in Centreville, MD to add features to the proposed metal building so it would blend with the existing structures for a more aesthetically pleasing building. The aesthetic improvements gained permitting approval.

Part of the Worton Water Treatment Plant upgrade included a new 250,000 gallon elevated storage tank addition to the distribution system in the Butlertown area. The potable water storage tank was constructed in the Knight's Landing subdivision (another one of McCrone's projects) on a vacant lot.

The new 250,000 gallon tank combined with the existing 125,000 gallon elevated storage tank (located at the WTP site) provides the Town with 400,000 gallons of storage to assist in riding out peak demand events, to provide water for fire events, and to provide storage in case of an interruption of the production of water at the treatment plant including mechanical failure or power outage.

Because our team responds quickly to questions and concerns, the Kent County DWWS is confident that McCrone will provide a professional and cost-effective design every time. The continued repeat business from this agency is a testament to the level of satisfaction achieved from study to design to construction.

Please contact [Barry Ebersole](#) or [Ryan Rangel](#) at 410-267-6947 for more information on how McCrone may assist you with upcoming water or wastewater needs.



Worton Butlertown, 250k Gallon EST, Kent County, MD.