The Acacia Park Retention Treatment Basin (RTB) was constructed as part of an $82 million national demonstration project. The demonstration project was a three-phase project aimed at eliminating combined sewage overflows (CSO) in the Rouge River watershed. The RTB is operated and maintained by the Office of the Oakland County Water Resources Commissioner (WRC).

The Acacia Park RTB services an 816-acre watershed, treating approximately 70 million gallons of CSO annually, of which 19 million gallons are discharged to the Rouge River. The RTB has a capacity of four million gallons. The facility is designed to provide 30 minutes of detention time for a one-year, one-hour storm.

As shown in the diagram on the reverse side, flow is normally regulated to 4 cfs by a tipping plate regulator. Flow exceeding 4 cfs is diverted to a 10-foot diameter influent tunnel, providing approximately 400,000 gallons of storage. Two separate cells are sequentially filled as the facility provides disinfection, settling and skimming. Treated flow exceeding the storage capacity of the two cells is screened and overflows via weir troughs to an effluent channel that discharges to the Rouge River. Discharge water quality has consistently exceeded water quality from separated storm sewers upstream and downstream from the RTB. Retained flow in the RTB is pumped back into the Evergreen Interceptor for treatment at the Detroit Publicly Owned Treatment Works. After the basin is dewatered, a pivoting trough flushing system is used to flush any remaining sediment from the tank bottom to the interceptor sewer.

Construction of the RTB was completed in February 1997. Located within the Village of Beverly Hills Nature Preserve, construction included the re-establishment of a “Relic Prairie” meadow and mitigation of almost an acre of wetland. The sitting of the facility allowed for several unique design characteristics. An example of this is the control building architecture that resembles a stable. As a result, it blends with the aesthetics of the surrounding area.

The WRC, working in conjunction with the Michigan Department of Natural Resources and Environment, has completed its required Total Residual Chlorine minimization program. Control system improvements also were made along with the replacement of the programmable logic controller, expanded hypochlorite pumping capabilities and further automation of the hypochlorite feed system. Upgrades to the Supervisory Control and Data Acquisition (SCADA) system made full remote operation of the RTB possible.