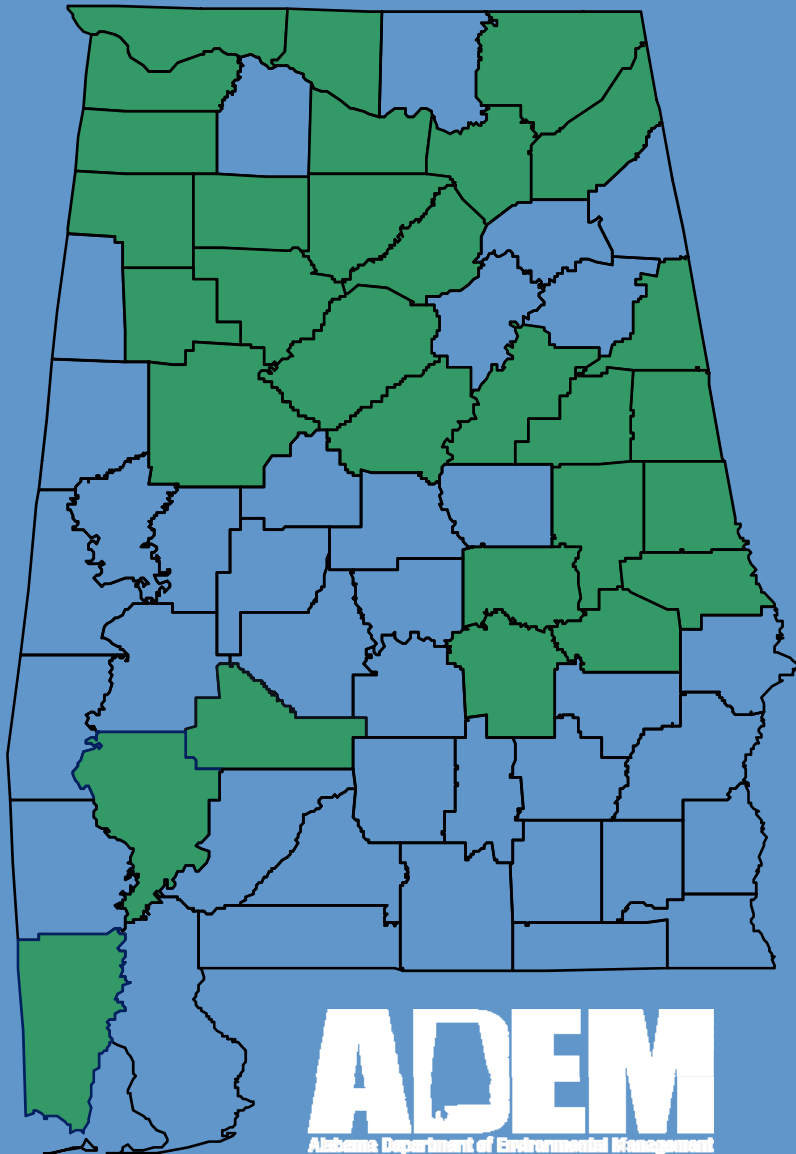


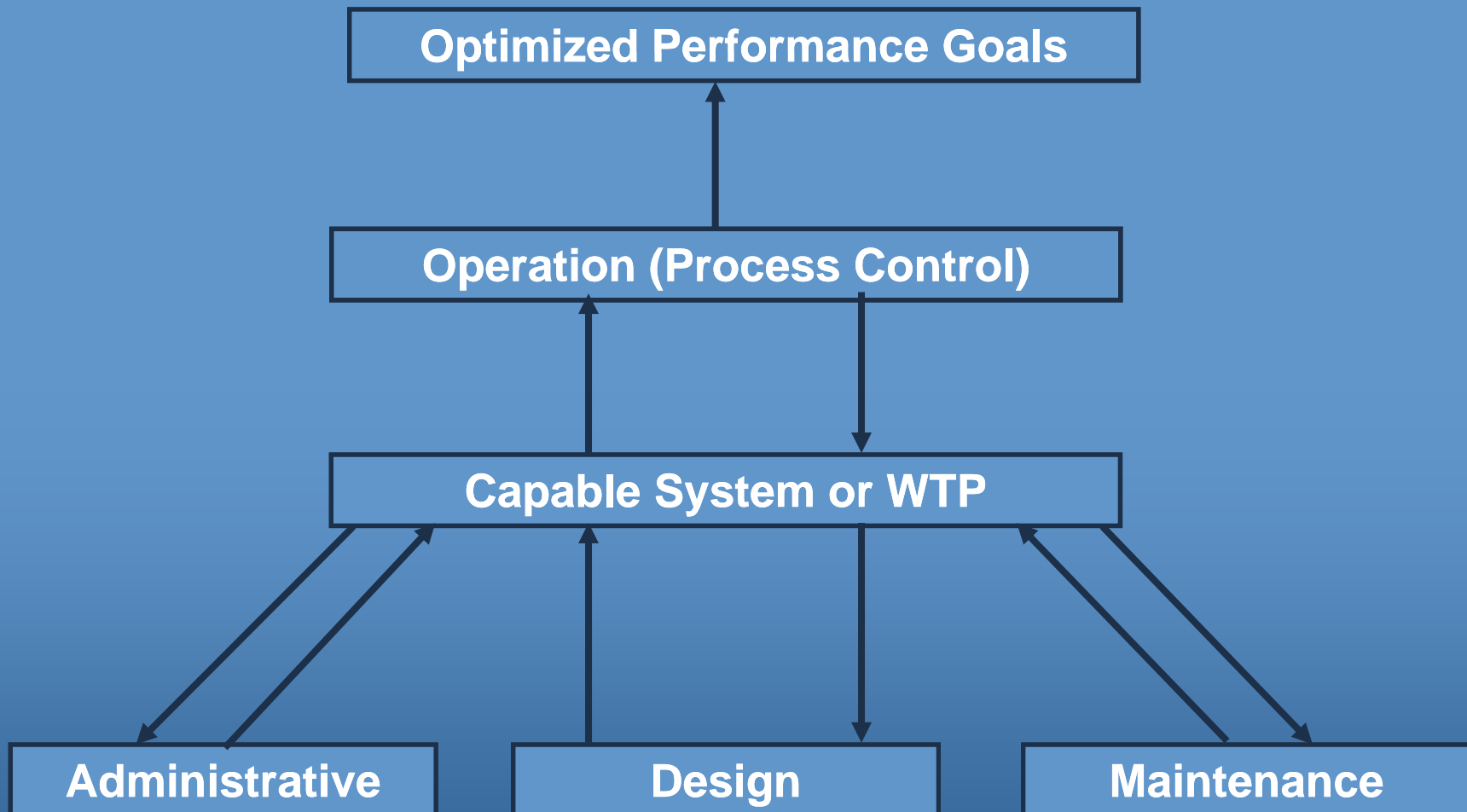
Area Wide Optimization Program



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AWOP Model



Components

- ◆ To assist water systems in meeting the AWOP goals, the components are designed to address the four areas in the AWOP model. These are:
 - Administration
 - Design
 - Maintenance
 - Operations or process control
- ◆ The components utilized are CPE, PBT, CTA or TTA.

Components (Cont.)

- ◆ CPE
 - Intense week long event to evaluate the operations of the water system or WTP in achieving the distribution goals
- ◆ PBT
 - A set of 5 - 6 classes spaced over 9 months to 1 ½ years designed to teach operators how to evaluate and ensure the best possible operation of their WTP or distribution system

Components (Cont.)

◆ CTA

- A long term project where multiple ADEM employees work with one water system directly to solve problems.
- Projects have lasted as long as five years

◆ TTA

- A short term project where one or more ADEM employee works with one water system to directly solve one or two problems
- Project typically only lasts a few months

Turbidity Goals

- ◆ Settled Water
 - Raw Water Average > 10.0 NTU
 - Settle Water < 2.0 NTU 95%
 - Raw Water Average < 10.0 NTU
 - Settle Water < 1.0 NTU 95%
- ◆ Filtered Water
 - Filters < 0.10 NTU 95%
 - No reading above 0.30 NTU
 - Return-To-Service within 15 minutes or filter-to-waste until below 0.10 NTU

Distribution Goals

- ◆ DBPs
 - Short Term Goal
 - Each individual site's LRAA is ≤ 70 ppb for TTHM and ≤ 50 ppb for HAA5.
 - Long Term Goal
 - Average of maximum LRAA based upon 11 quarters of data should be below 60 ppb for TTHM and 40 ppb for HAA5.

Distribution Goals

- ◆ Chlorine
 - Maintain a chlorine residual above 0.20 mg/L at all locations
 - Total chlorine should be within 0.2 mg/L of the free chlorine residual
- ◆ pH (New AWOP Area Being Developed)
 - The pH should not significantly differ (± 0.5) from the source's pH

Distribution Goals

- ◆ Water Storage Tanks
 - Turnover time < 4 days
 - Mixing ratio > 1.0
- ◆ Corrosion (New AWOP Area Being Developed)
 - Minimize corrosion in the distribution system.
 - Ensure that phosphates (if used) are present at a sufficient level in all areas of the distribution system

WTP Effluent DBP Goals

- ◆ TTHM RAA 20 ppb or less
- ◆ HAA5 RAA 15 ppb or less
- ◆ TOC RAA 1.7 ppm or less

WTP Effluent Chlorine Goals

- ◆ Maintain minimum chlorine required for CT
- ◆ Maintain a minimum chlorine residual leaving to ensure chlorine is being maintained in the distribution system unless booster chlorination is used

WTP OPTIMIZATION AWARDS