

# Advanced Water Treatment Operator (AWTO™) Certification Background

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Board  
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**AWT OPERATOR  
CERTIFICATION**



American Water Works Association  
**California-Nevada** Section



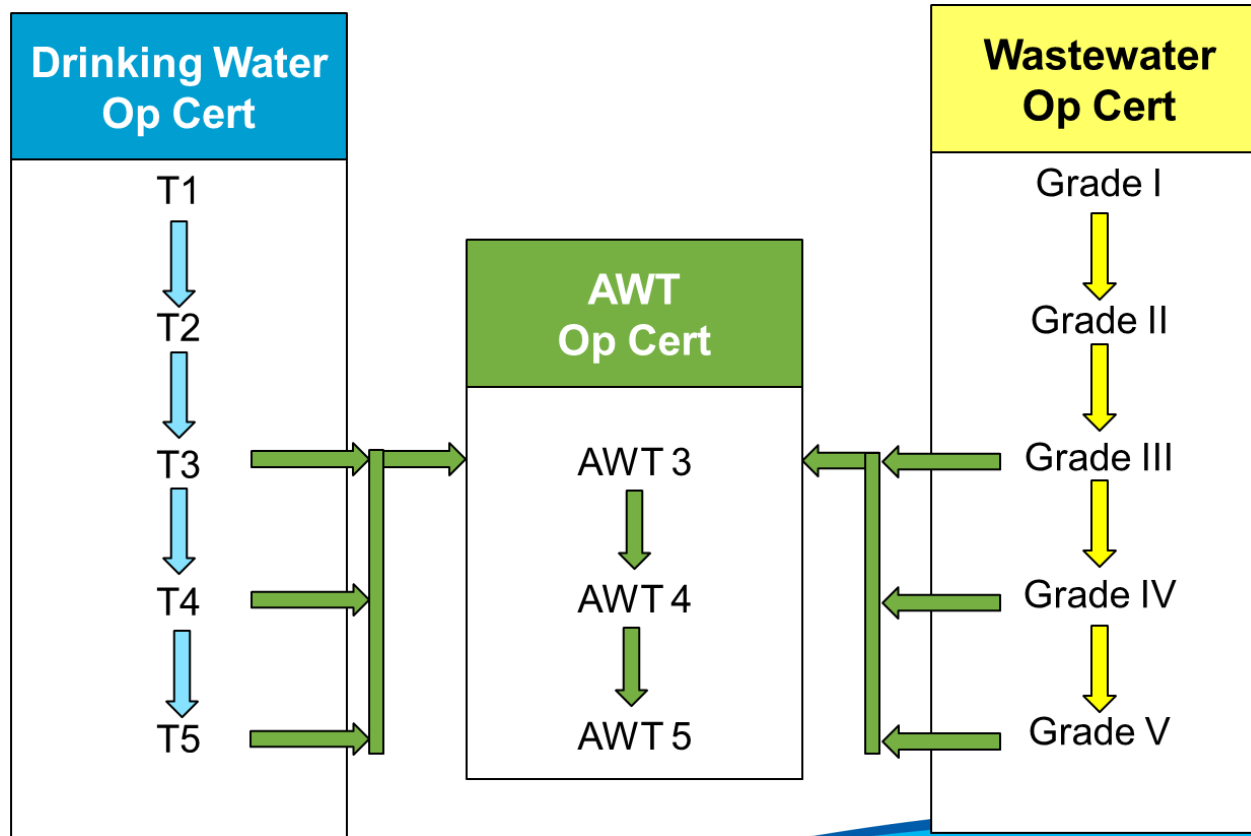
# What is AWTOTM Certification?

AWTO Certifies operators' competency in operating treatment facilities using advanced treatment processes (AWT).

AWT Processes	
Membrane Filtration	Membrane Desalination
Biological Filtration	Membrane Bioreactor
Iron and Manganese Removal	Adsorption/Exchange
Advanced Oxidation	Disinfection
Finished Water Chemical Stabilization	



# AWTO™ -A Supplement to Existing Operator Certification



# Why is AWTOTM Certification Developed?

- Number of AWT facilities is increasing, particularly in water reuse field
- Public reassurance is needed that AWT facilities are operated by competent operators
- Current state operator certifications don't test AWT knowledge area
- SWRCB expert panel identified operator training and certification as a concern for DPR
- Regulatory issues with treatment operator career path at recycle water plants

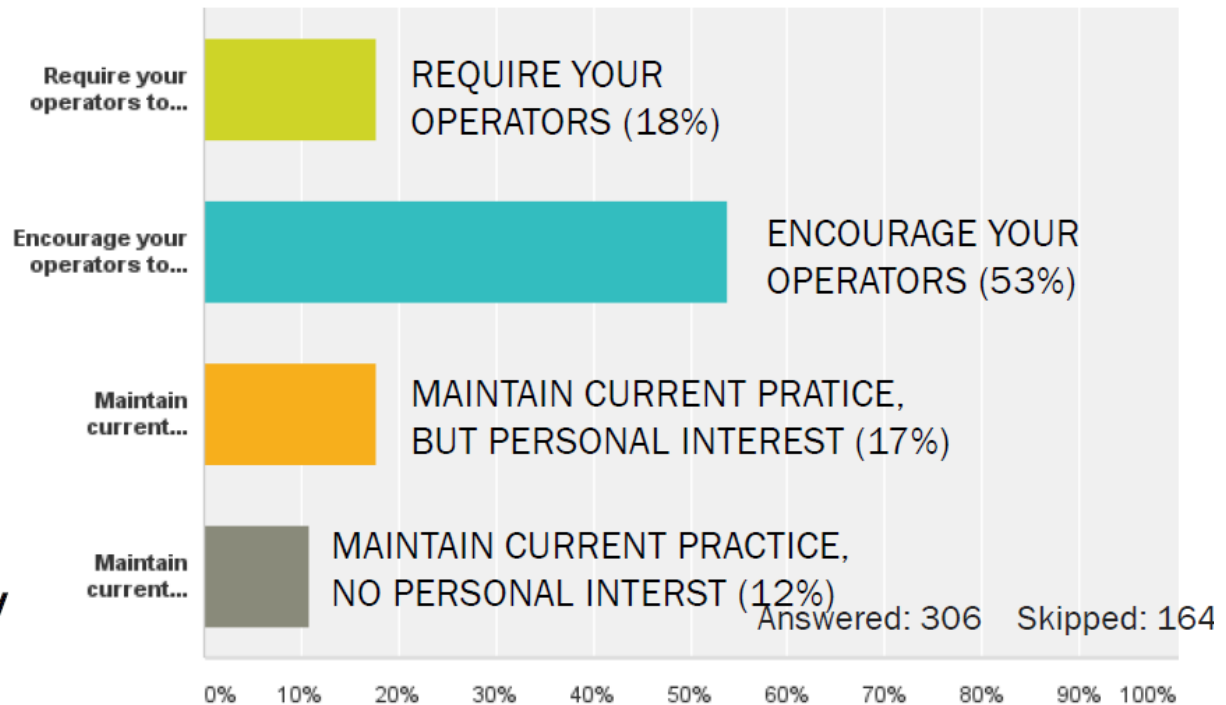


# Industry Supportive of Certification Program

88% overall favorable

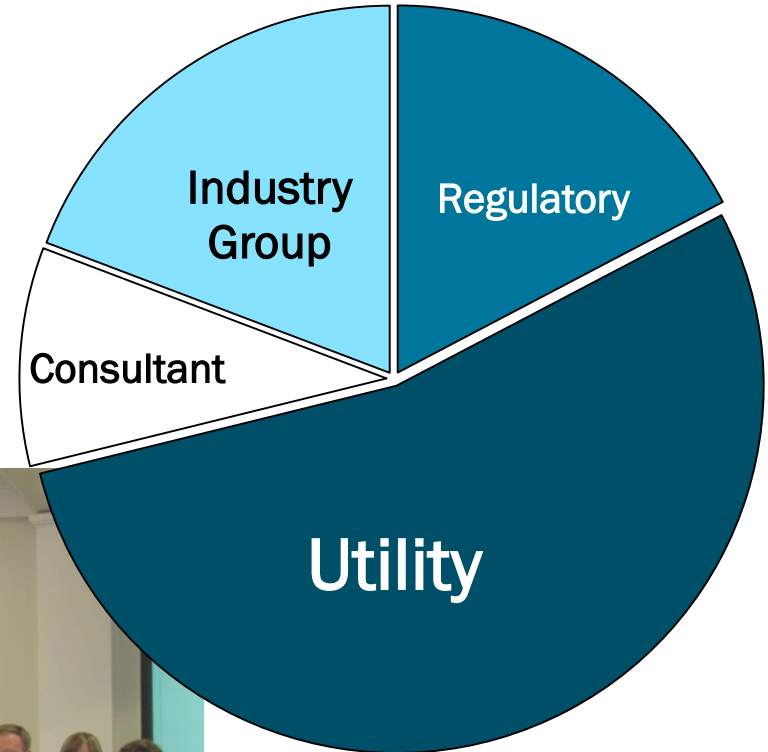
71% would look to include at their facility

Q14: If an AWT Certification program were offered, would your company / agency likely



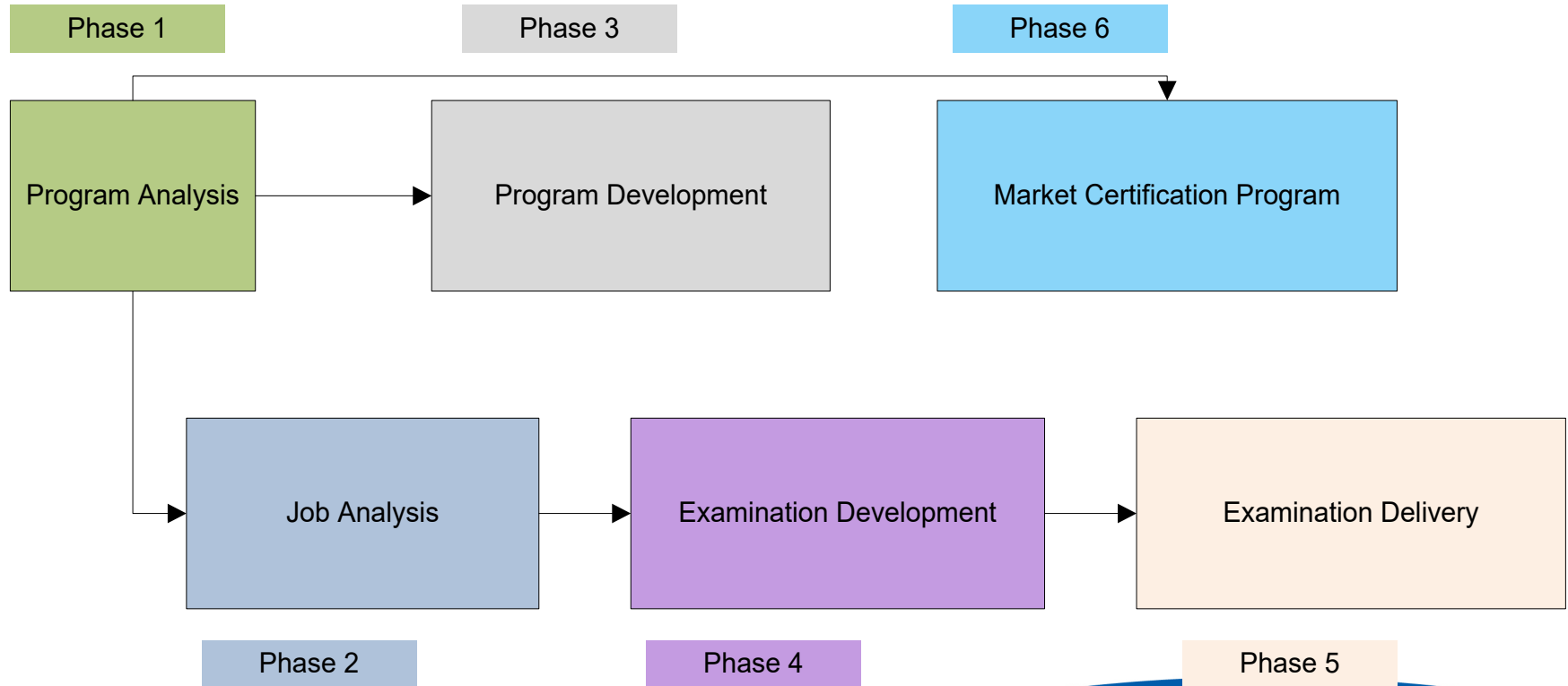
# A committee was formed in 2015

- 15+ utilities represented
- Majority in operations
- State Board Staff-DDW and Operator Certification
- CA-NV AWWA and CWEA Staff



# Certification Program Development

-Complicated, Rigorous and Prescribed



# Phase I-Program Analysis

## -SMEs Define the Program Goals

- An AWT operator certification program that **works for agencies big and small**
  - Provides benefit without being overly restrictive and affecting future qualified operator pool
- Address potable reuse operator training and certification concern – **remove potential roadblock for DPR**
- **Helping address current regulatory issues** with T operators at RW facilities





# Phase II-Job Analysis

- SMEs define knowledge and skills expected

Sample Task Statements
Membranes
Recognize and correct problems in membrane systems
Calculate membrane surface area
Calculate daily membrane water production
Advanced Oxidation
Calculate oxidant dosing
Measure oxidant residual
Track major process control inputs



# AWTO™ Certification Development

- Accomplished

- Job Analysis
- Exam Questions
- Minimum Qualification Determination
- Evaluate possible regulatory changes-Regulators involved

- Ongoing

- Finalize exam forms and deliver exam
- Outreach to operators/utilities
- Develop AWT training programs



# AWT Exam Forms

Content Domains	Grade 3 100 questions	Grade 4 85 questions	Grade 5 70 questions
Source Water	3%	4%	3%
Advanced Water Treatment Processes	40%	40%	24%
Advanced Water Treatment Support Processes	11%	14%	4%
Advanced Treated Water Management	3%	4%	3%
Operations and Maintenance	16%	18%	14%
Controls and Monitoring	6%	6%	13%
Laboratory	12%	7%	1%
Regulations and Reporting	2%	2%	10%
Safety	6%	6%	29%



# AWTO™ Minimum Qualifications

Grade	Certification	Experience (can be obtained prior to AWT exams)	Exam
AWT3	State T3 or WW3 or higher	None	Pass AWT3 exam
AWT4	AWT3	2 years in one or more AWT processes	Pass AWT4 exam
AWT5	AWT4	3 years in one or more AWT processes, of which, 1 year must be in at least two AWT processes	Pass AWT5 exam

Minimum 90 day interval between testing for different grades

