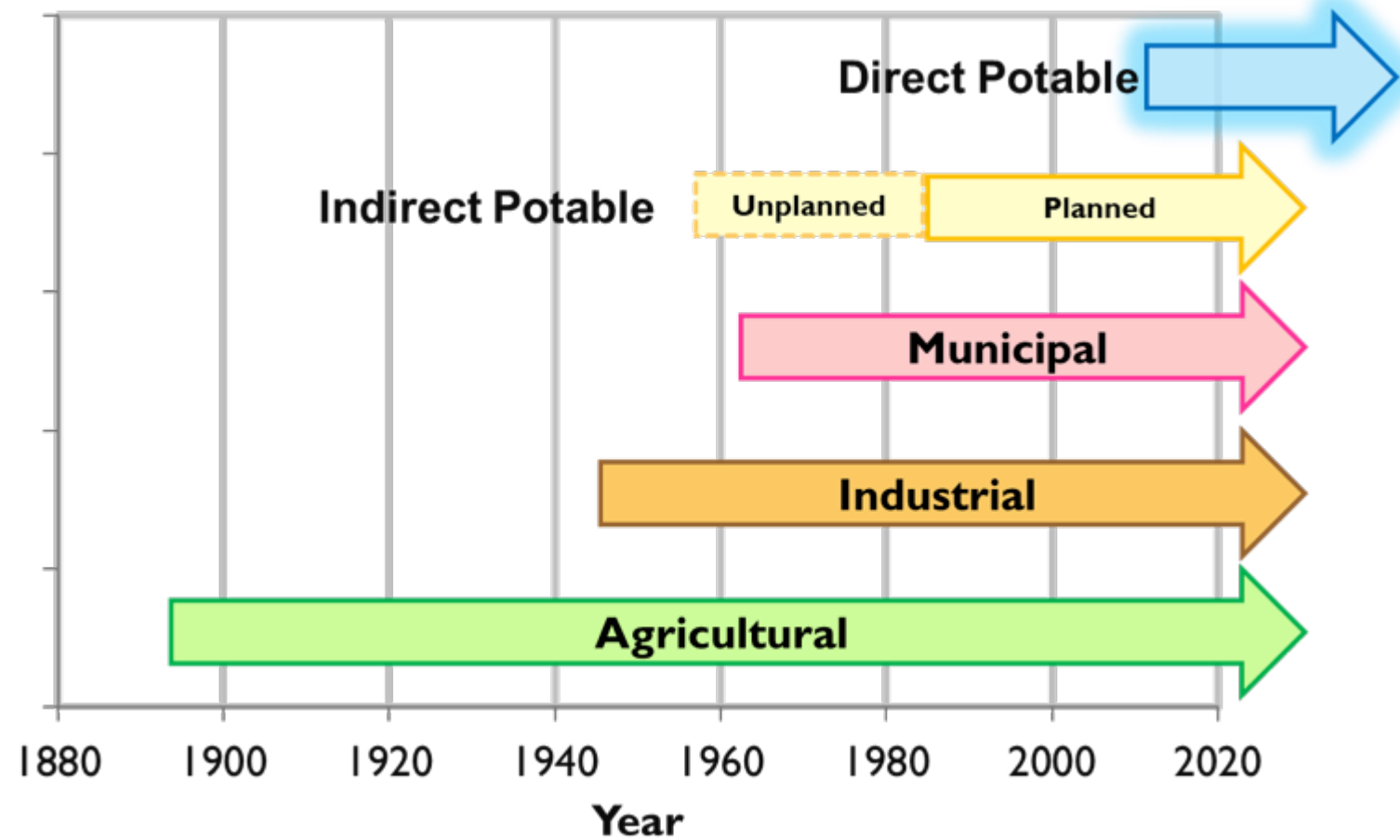


REUSE IN TEXAS- PAST, PRESENT AND FUTURE

ELLEN MCDONALD, PHD, PE, ALAN PLUMMER ASSOCIATES, INC.



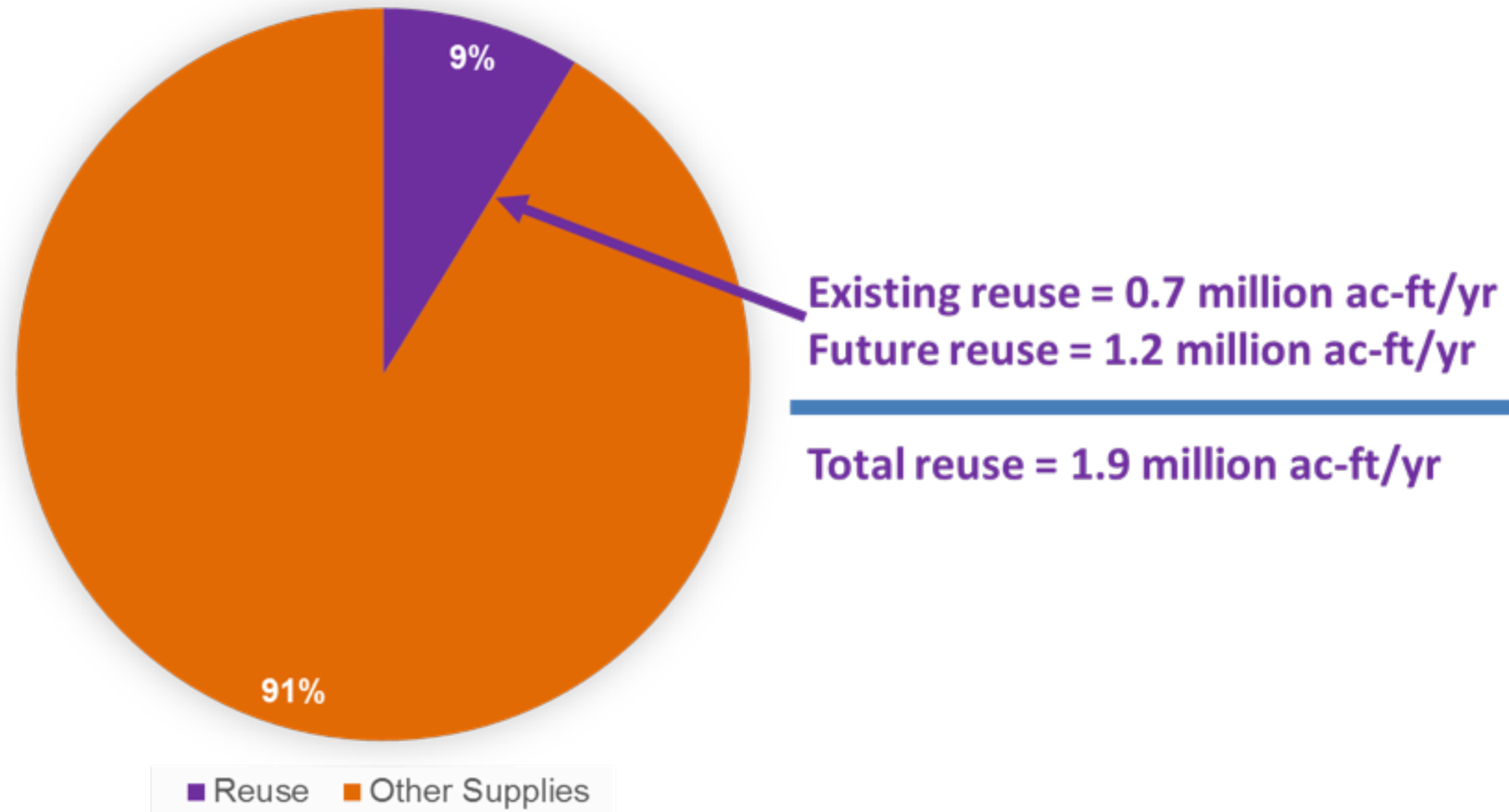
EVOLUTION OF REUSE IN TEXAS



TEXAS WATER SUPPLY PLANNING



TEXAS WATER SUPPLY PLANNING



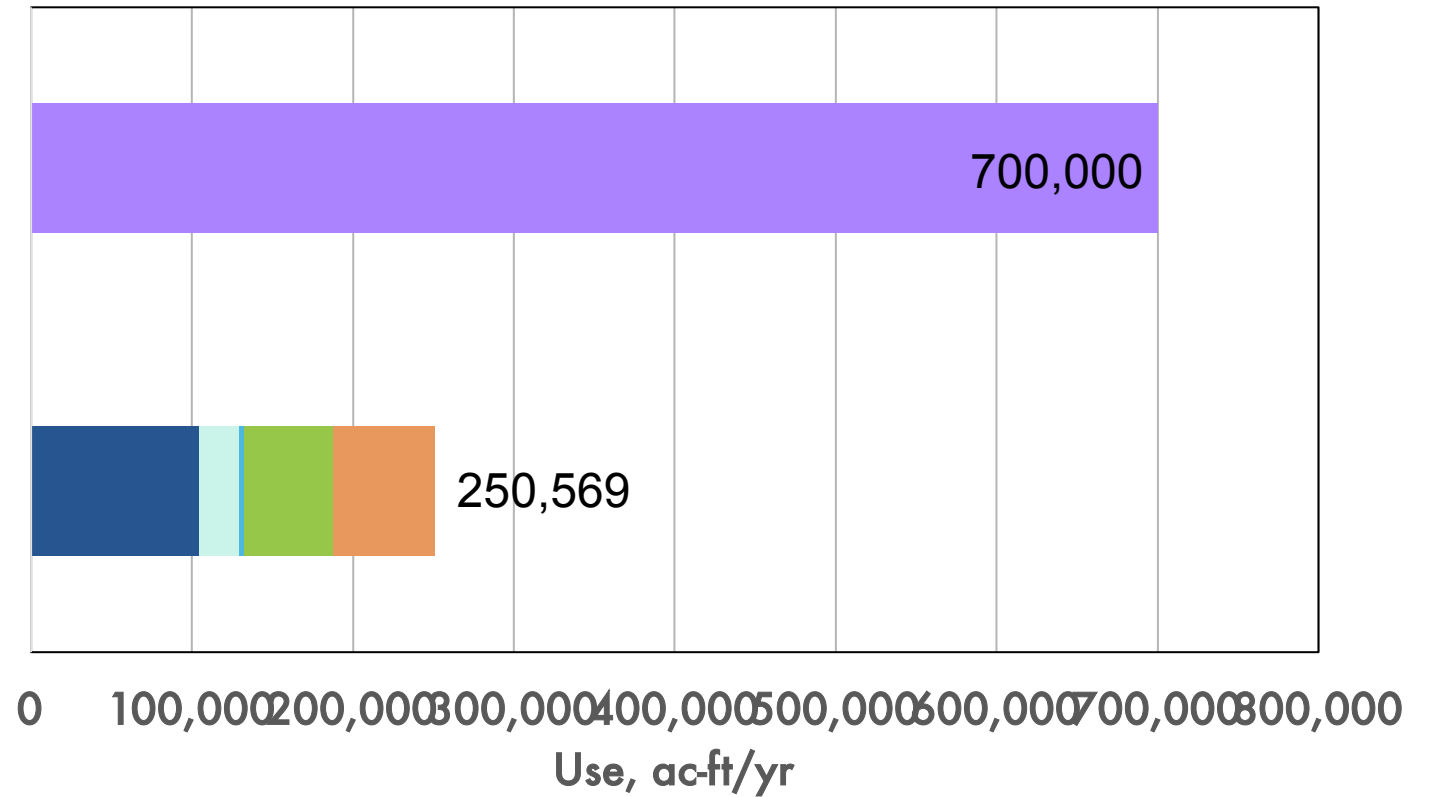
2070 REUSE POTENTIAL

- **Projected 2070 Municipal Demand = 8.4 million ac-ft/yr**
- **Assume 40% returned via wastewater = 3.4 million ac-ft/yr**
- **Assume 70% available for reuse = 2.3 million ac-ft/yr**
- **Compare to 1.9 million ac-ft/yr in 2017 Water Plan**
- **Additional potential of 400,000 ac-ft/yr?**

WHERE ARE WE ON ACTUAL USE?

"Existing" Reuse, 2017 State Water Plan

2016 Actual Reuse



■ Municipal ■ Manufacturing ■ Mining ■ Power ■ Irrigation ■ Total

NONPOTABLE REUSE SYSTEMS



SAN MARCOS



And Many More!!

POTABLE REUSE IN TEXAS SPANS THE WHOLE SPECTRUM



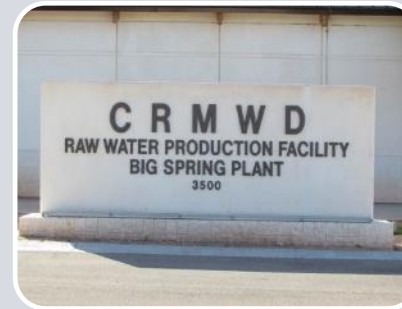
*De facto
(unplanned)*



*De facto
with water
right*



Intentional
discharge to
stream,
lake, aquifer
(planned
IPR)



DPR-
augment
raw water
supply



DPR- direct
to
distribution
system

SIGNIFICANT ADVANCEMENTS IN PAST TWO DECADES



Water Quality- Key Contaminants of Concern



Applicable Treatment Technologies



Operational Protocols

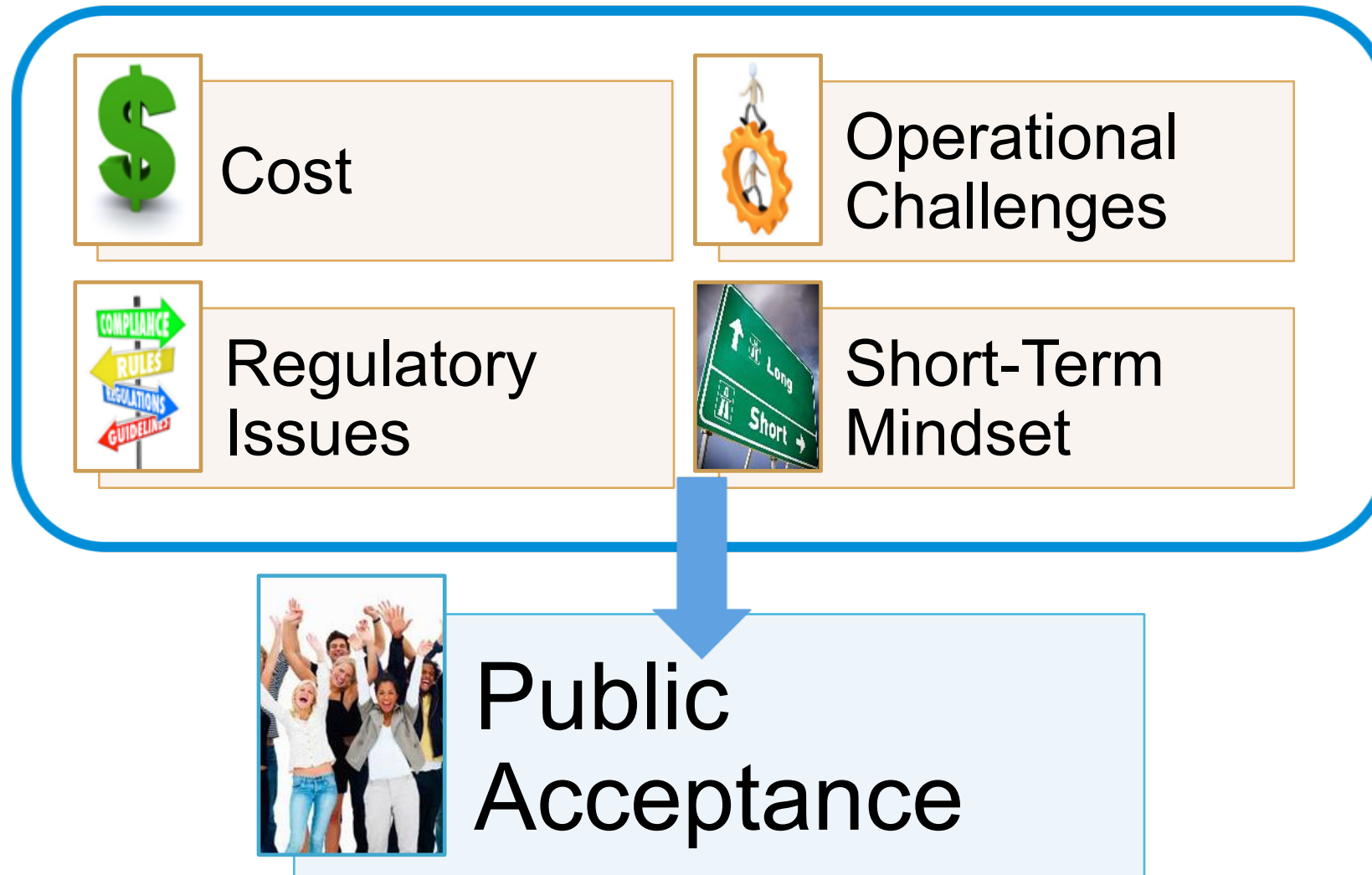


Management Best Practices



Public Outreach Strategies

CHALLENGES TO IMPLEMENTATION





THANK YOU!

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