



Arizona's Only Water Source That is Increasing:

Reclaimed Water and the Role it plays in Mitigation of Surface/Ground Water Depletion.



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Increasing Population Vs. Decreasing Water Supply

•The past 8 years have been the driest on record, yet AZ's population still managed to grow by 28.6%.

Arizona Water Source by Supply (ADWR):

Surface = 56.7%
Ground = 39.2%
Reclaimed = 4.1%

• **95.9%** of AZ water comes from a finite source

• **Only 4.1%** comes from a renewable source

• Reclaimed water is highly-treated municipal wastewater that can be used for many purposes as an alternative to using potable ground or surface water.

Research Question:

To determine the best allocation of reclaimed water potential end-uses, in a way that best minimizes ground water and surface water depletion.

ADEQ Internship Allowed Access to RW Data:

• Purpose was *Identify Obstacles* in the data reporting process

- End-user Reports
- Treatment Plant Reports

• ADEQ personnel guided me through the data process on both sides, provided insight on what needed to change

• Opportunity to simultaneously aid ADEQ and collect the necessary data for allocation analysis of RW.

How Reclaimed Water Minimizes Surface/Ground Water Depletion:

Reuse (70%)	Power Production (PVNGS) Irrigation for: <ul style="list-style-type: none"> • Golf Courses/Landscape • Food/Non-food crops
Recharge (20%)	Managed Aquifer Replenishment: <ul style="list-style-type: none"> • Percolation Basin • Direct Injection
Discharge (10%)	Excess RW diverted to AZ waterways: <ul style="list-style-type: none"> • Riparian environment • Indirectly recharges

Doesn't Seem Necessary or Viable to Reallocate RW:

• **Unlikely to convert "Reuse" of RW to "Recharge"** because of high demand for power and irrigation in AZ.

• **Current reclaimed water uses are stable.**

• **All reclaimed water uses function to replace a potable water demand.**

Limitations to Increasing RW

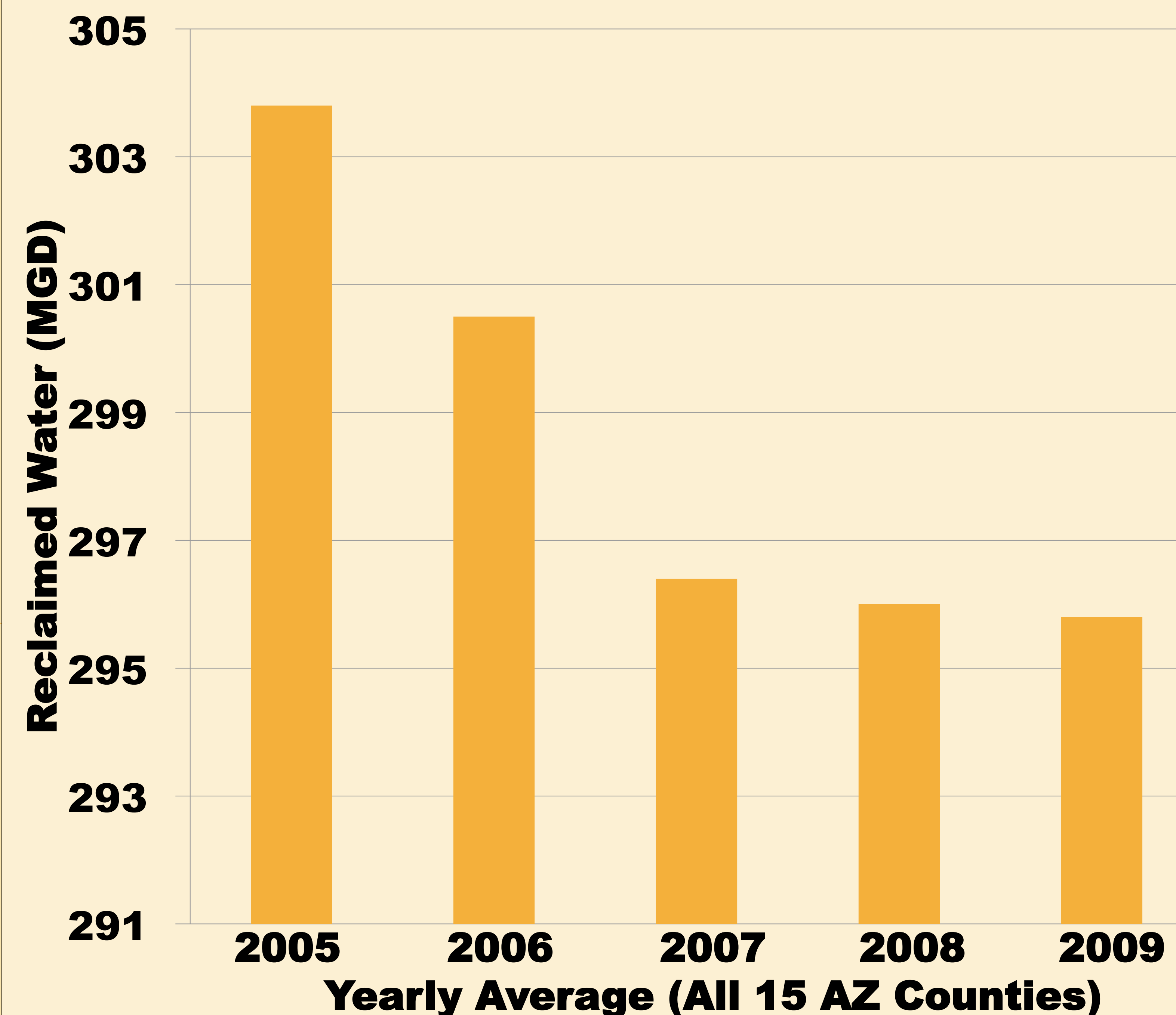
Logistic Issues:

- RW Treatment Plant Thresholds
- Topography/Location
- Seasons affect re-use levels

Retrofitting Infrastructure = \$\$

Public's Lack of Knowledge about RW.

Disparity in Reclaimed Water Potential* vs. Production



*Total AZ Design Flow = 882.1 MGD

Possible Methods to Increase Demand for Reclaimed Water:

- 1) Policy Changes
- 2) Monetary Incentives
 - Price
 - Tax Breaks
- 3) Increase public's awareness.