



Goodyear Water Conservation: A Case Study

★ Green Team

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💡 Current State of Goodyear Water

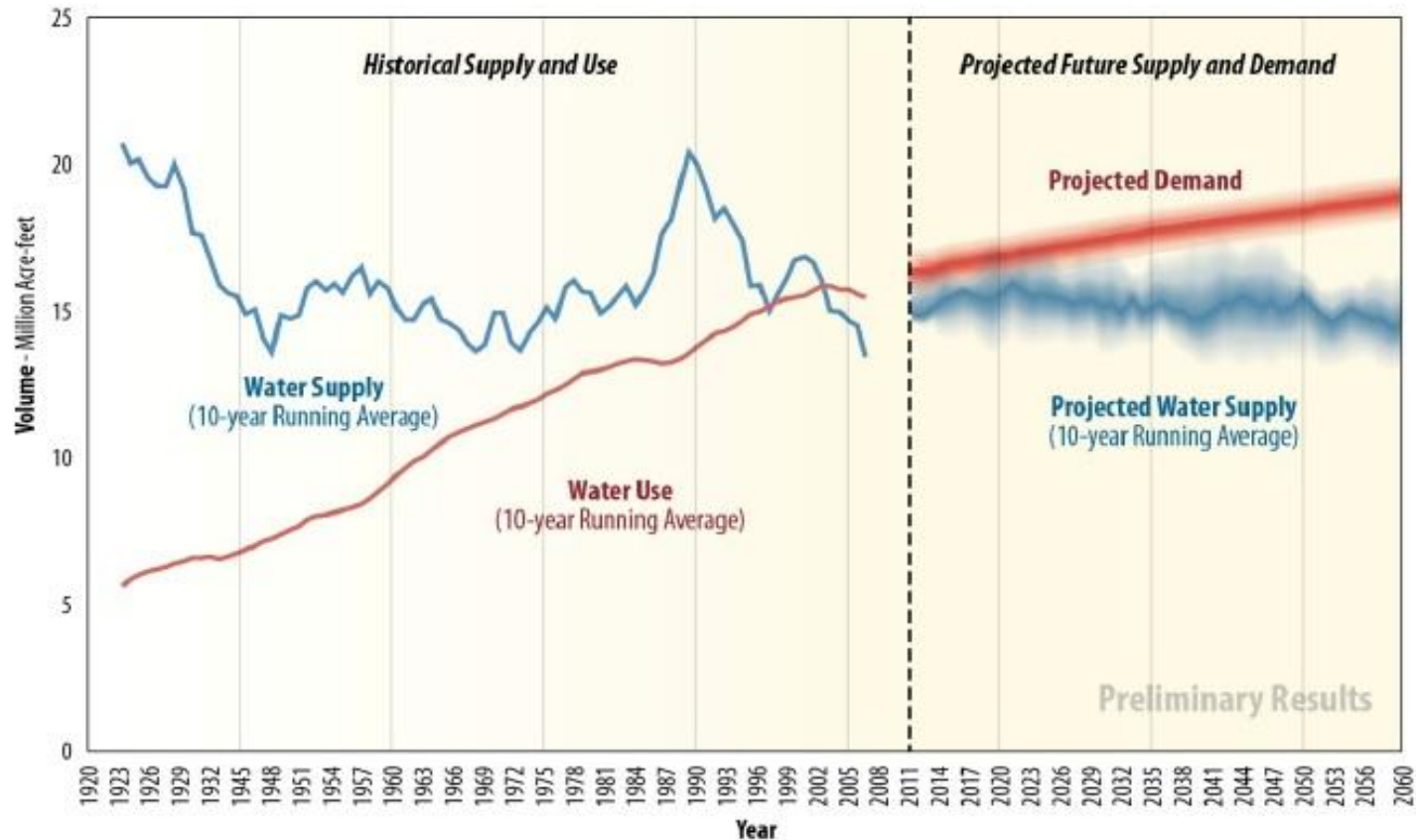




Total Colorado River Basin Water Storage (Blue) and Water Use (Red).

FIGURE 2

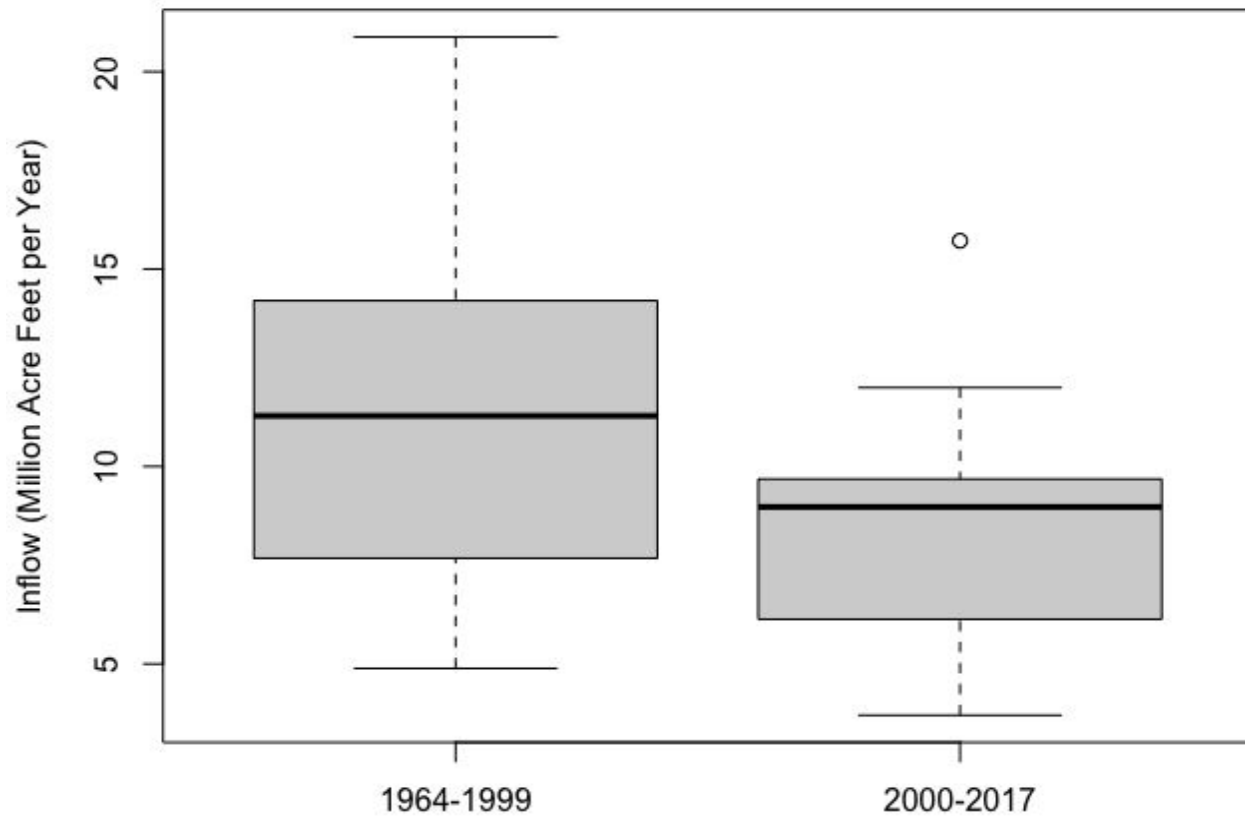
Historical Supply and Use and Projected Future Colorado River Basin Water Supply and Demand





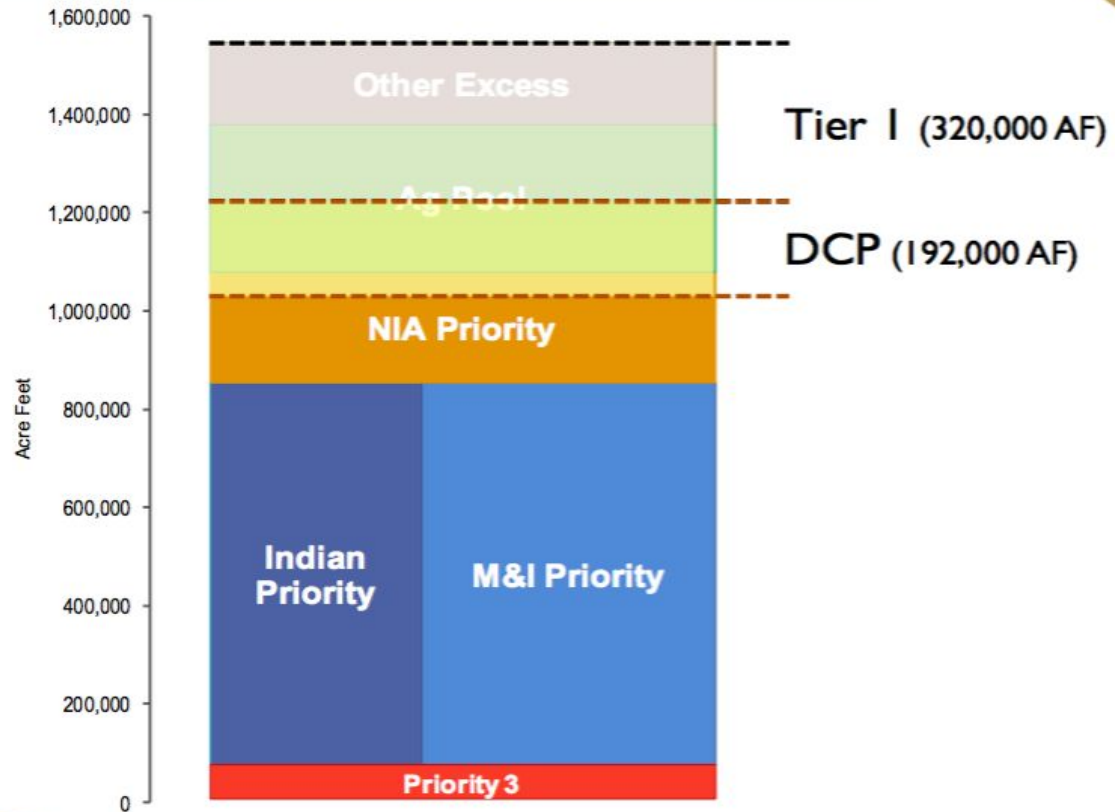


Historical Inflow to Lake Powell





CAP Priority Pools



Lake Mead – Selected Percentile Elevations Stress Test Hydrology – “No Action” and With DCP

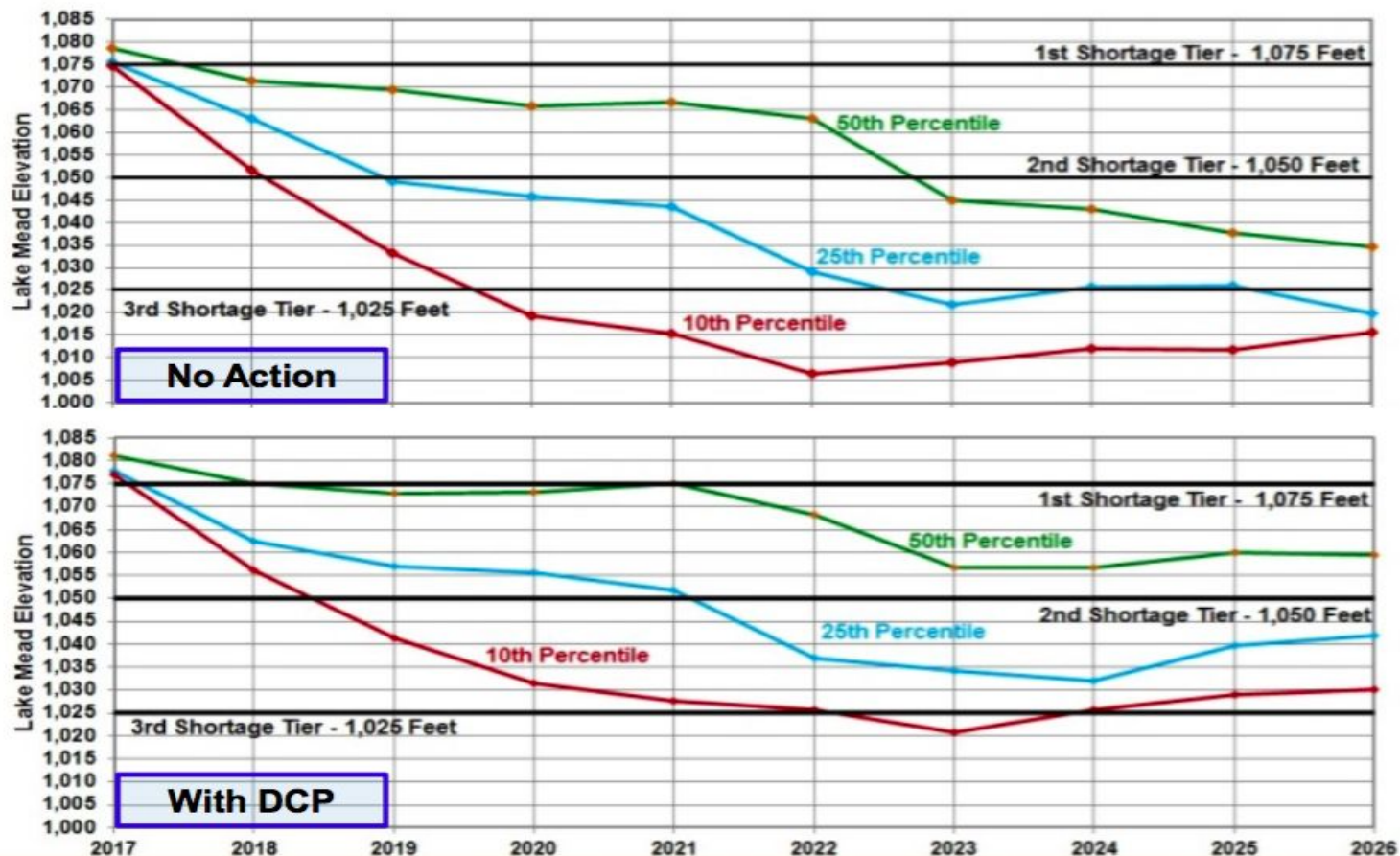
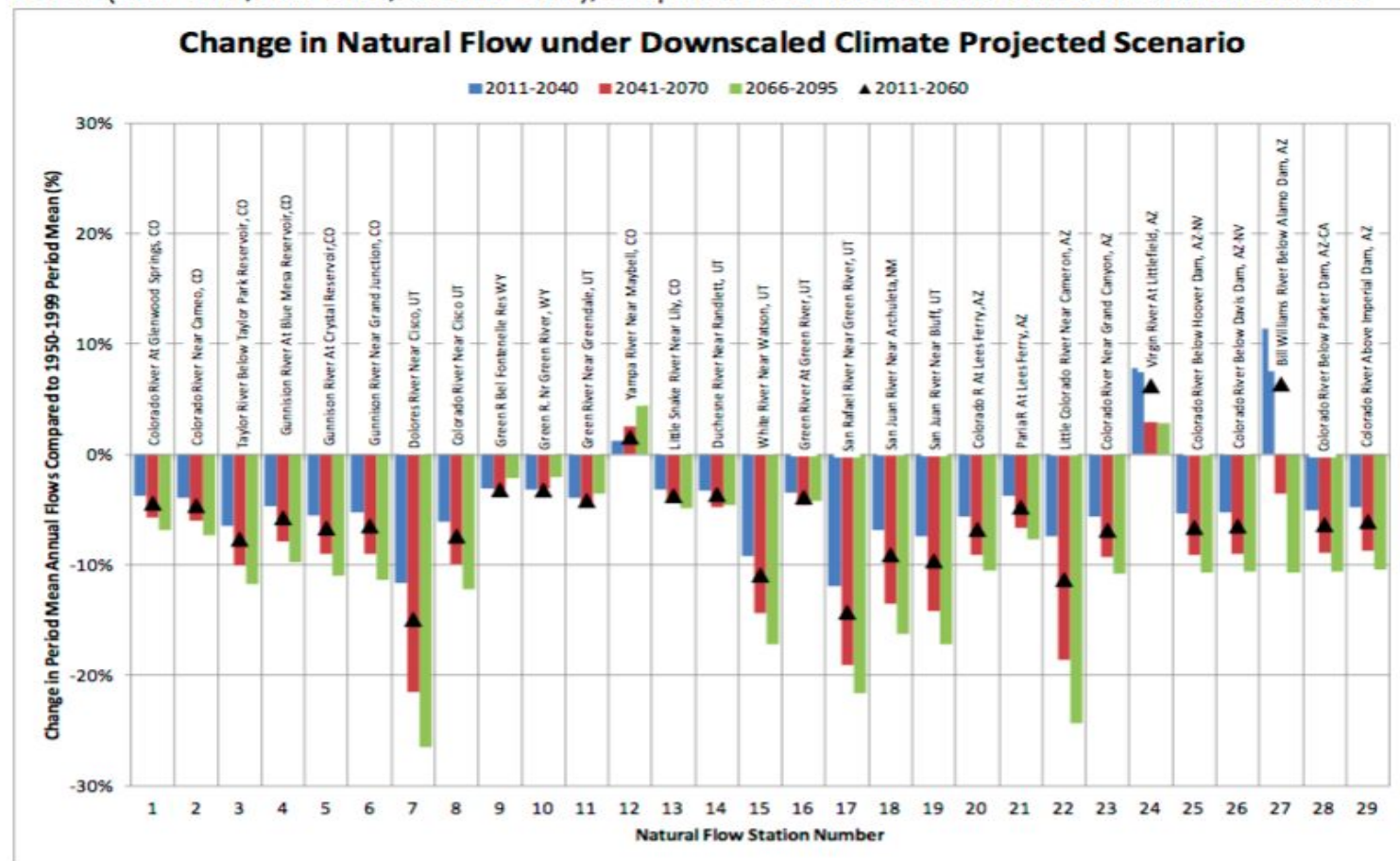


Figure 5. Probabilities of shortage in Lake Mead. (Central Arizona Project 2016)

FIGURE B-48

Simulated Relative Change in Mean Annual Flows (Ensemble Mean) for the Study Period (2011–2060), and Three Future Periods (2011–2040, 2041–2079, and 2066–2095), Compared to 1950–1999 for each of the 29 Natural Flow Locations



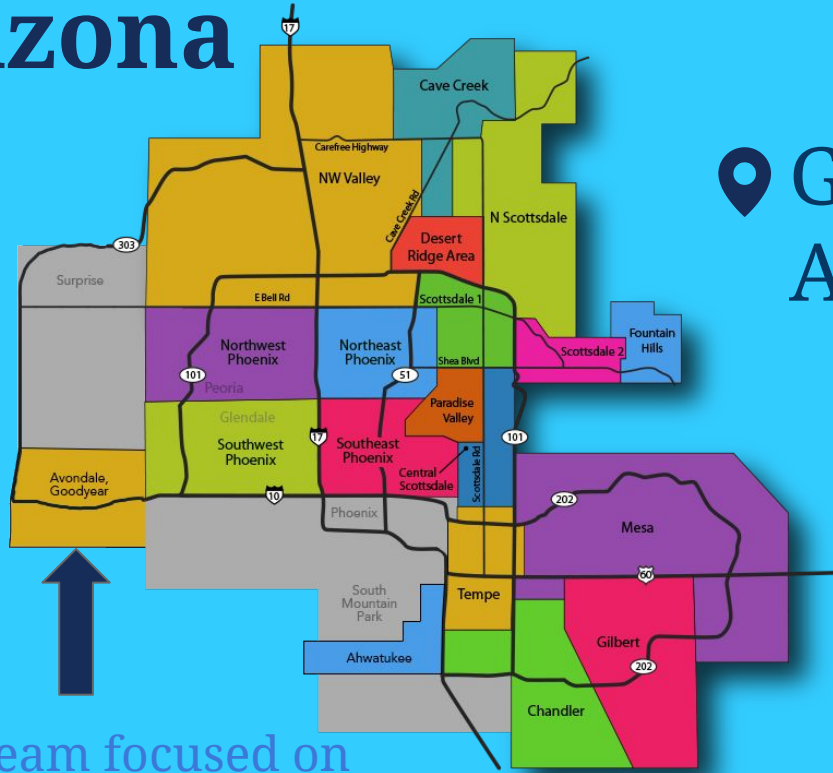
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Overview of Study



Map of Greater Phoenix, Arizona



📍 Goodyear,
Arizona

★ Our team focused on
a HOA in Goodyear,
AZ

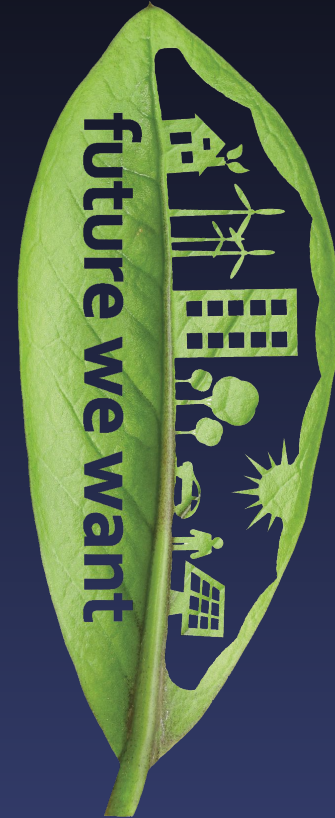
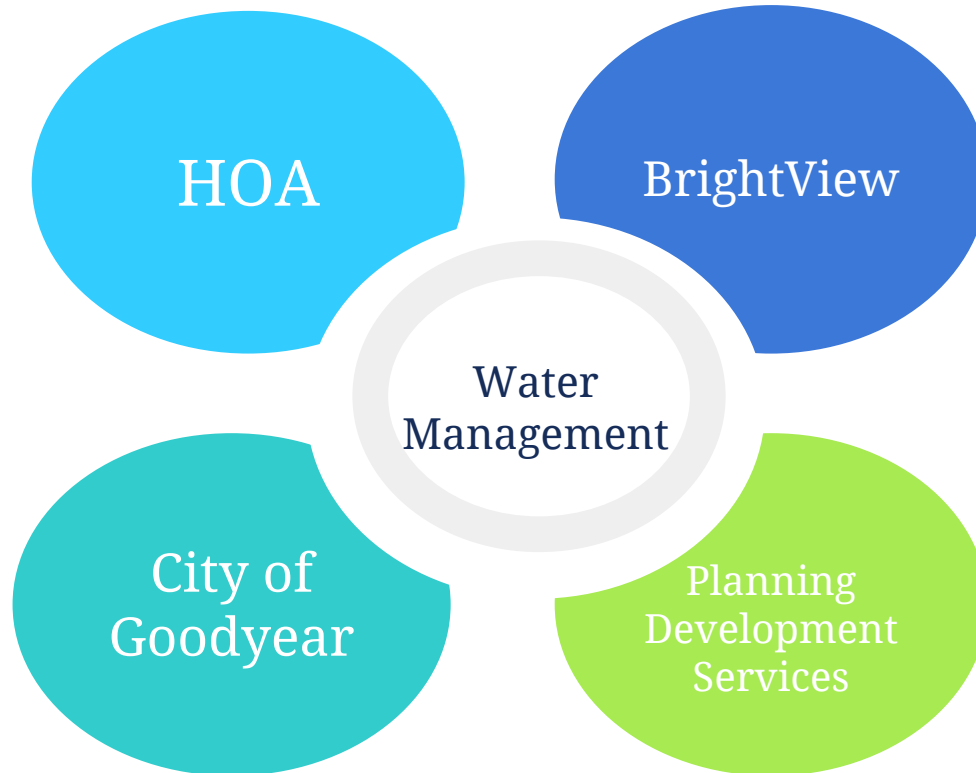


Background & Recent History

- Canyon Trails 1 & 2 HOA Annual Water Budget in 2015 was: \$250,000
- In 2015, Canyon Trails 1 & 2:
 - Were the **highest** water consumers of all Goodyear HOAs
- Currently rising water prices = serious financial and sustainability challenge.



Water Management in Goodyear, Arizona



This process is multi-faceted



Portfolio of Solutions



Xeriscaping, Low-water use plants, Shifting social norms

Solutions

- Close working relationship
- Installed smart irrigation systems
- Changed existing landscaping to xeriscape



Canyon Trails Turf Conversion Project

BrightView



June, 2016

0 15 30 Feet
60 90 120

Legend
Existing Features
City lot lines (MCDNR/Maple)
Existing sidewalk
Utility lines
Curb cut line

West Van Buren Street

Legend
 • Trees (14)
 • Dog Station (3)
 • Irrigation (2)
 • New Trail (27' x 10' (New Sidewalk/Trail) x 14,725 Sq Ft)
 • Local Oak (20,000 Sq Ft)
Proposed Plants
 • Aspen / Elm (7)
 • Red Oak (11)
 • Creeper (6)
 • Dogwood (5)
 • Dogwood (5)
 • Yellow Birch (1)
 • Elm / Red Oak (10)
 • Oak (5)
 • Red Oak (10) (New Oak)
 • Red Oak / Red Oak (1)
 • Texas Olive (2)

West Van Buren Street

Canyon Trails HOA Plant Palette



Sissoo Tree



Pistache Tree



Brazilian
Pepper Tree

Canyon Trails HOA Plant Palette



Hybrid Palo
Verde



Chaste Tree



Texas Ebony
Tree

Canyon Trails HOA Plant Palette



Yellow Bird of
Paradise



Orange Bird of
Paradise



Langmans Sage

Canyon Trails HOA Plant Palette



Bougainvillea



Torch Glow
Bougainvillea



Texas Olive
Bush

Canyon Trails HOA Plant Palette



Ocotillo



Pencil Bush



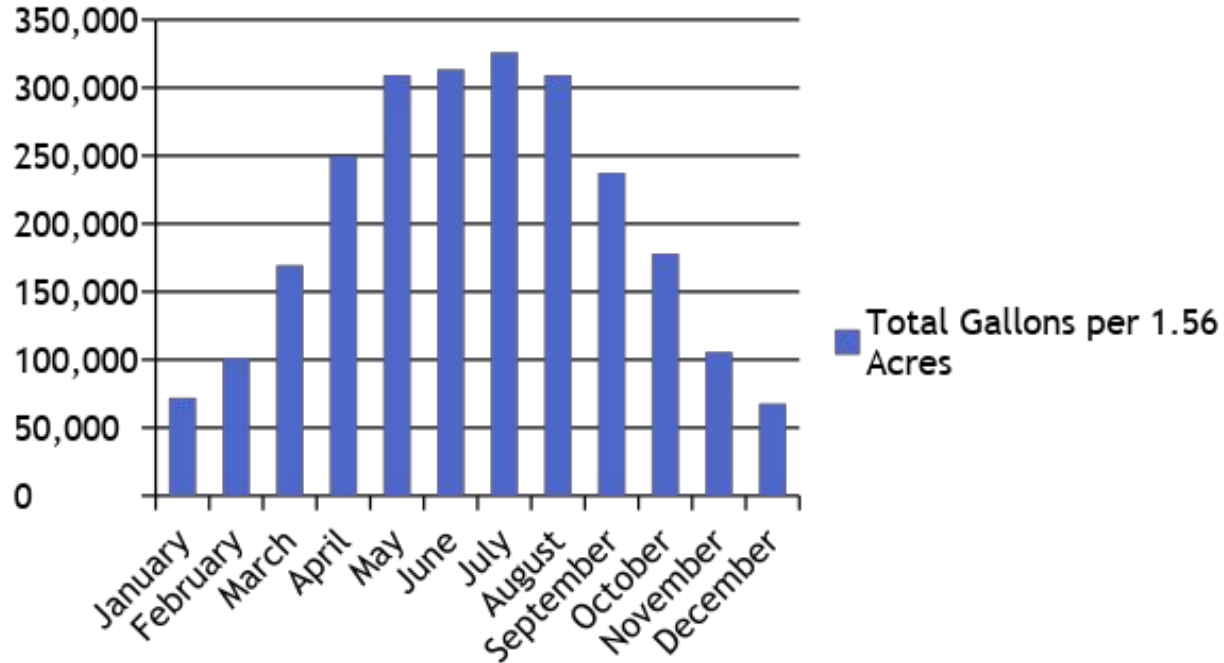
Golden Barrel
Cactus

3

Effects of Water Conservation



Outline of Resource Use



Water consumption before conversion = 2.5 million gallons

4

Economic Impact



Economics

★ Funding

- HOA has a yearly budget of over 1 million dollars

★ Water Price

- In 2015, the HOA was spending over \$230,000 annually
- This was roughly 20% of total HOA budget.

★ ROI

- The HOA spent \$33,650 to redesign and xeriscape certain areas
- Today, they are saving ~\$12,000 a year
- 3 year ROI!!!



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Environmental Impact



[illegible]

-
- A large green recycling symbol, composed of three clusters of trees arranged in a triangular pattern. The symbol is centered on a white background.



Burrowing Owls

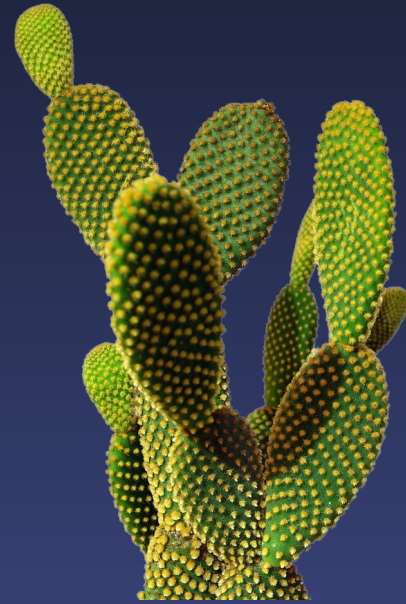
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🏠 Societal Impact



How did the Community React?

- ★ At first, there was push-back. People did not want change.
 - ★ Now residents utilize the area way more than before!
 - ★ Residents now realize how simple changes can result in a large reduction of water use.
- In fact, some community members have changed their front yards to xeriscape!!



Photos of the Site in the Past



Photos of the Site Today





More Photos of the Site



Recognition

"The Board at Canyon Trails is comprised of many forward-thinking members who each possess a great vision to make their community water-wise, as well as beautiful."

- Nicolas Galligan, BrightView Account Manager



"This project is an example of how ASU connects with communities through mutually beneficial partnerships."

- Dave White, Director, ASU Decision Center for a Desert City



Thank you!

Any questions?

Further inquiries:

- Arizona State University
- School of Sustainability



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