

SOS 321: Policy and Governance in Sustainable Systems

Taught by: Dr. Michael Schoon



- Michael Schoon is an assistant professor in Arizona State University's School of Sustainability, focusing on policy and governance in sustainable systems.
- His work combines multiple methodological approaches and looks at causal clusters for the formation and governance outcomes of institutional arrangements.
- Dr. Schoon is active in international research communities on resilience, robustness, and complex systems through the Resilience Alliance and the Beijer Institute of Ecological Economics. He serves on the board for IUCN's Transboundary Conservation Specialist Group, which advises academics and practitioners on large-scale, cross-border conservation.
- He serves as co-Editor-in-Chief of the International Journal of the Commons, the leading journal in common-pool resource management.

AVONDALE COMMUNITY FARMERS MARKET

Julia Colbert, Maria Eller, Kirsten Martin, Evan Siegel, Christina Young

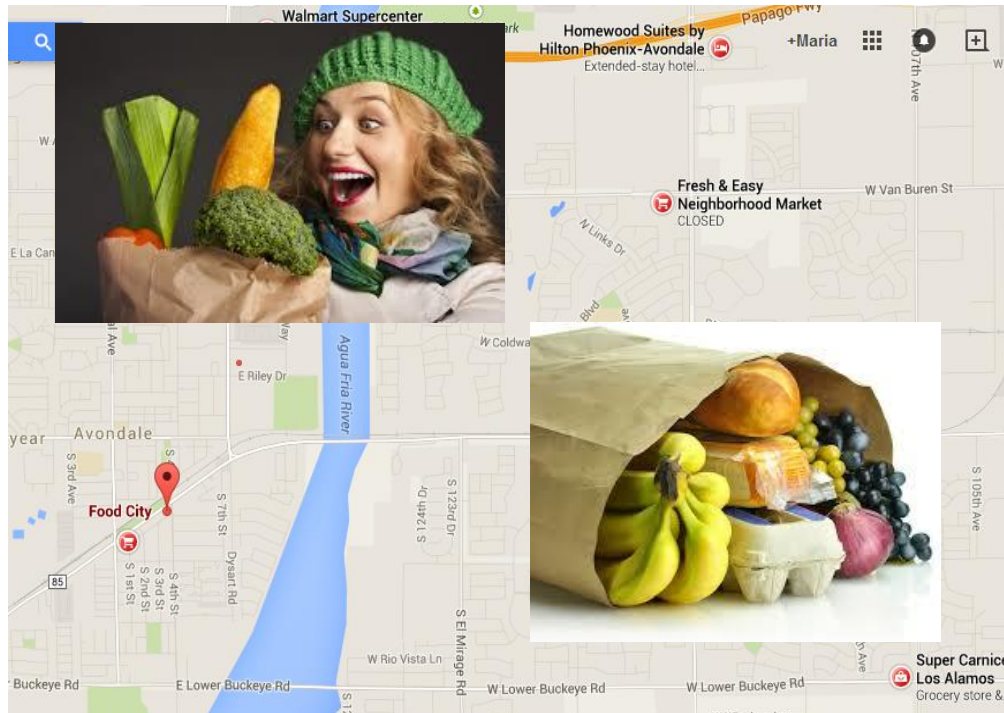
History

- Avondale began as a farming community nearby Agua Fria and Gila Rivers.
- Avondale has grown over 114% in the last decade, making the current population an estimated 76,238 residents.¹
- Growth has created a profusion of new housing stock within the mix of older, low income neighborhoods.
- Despite this positive wave of exponential growth, there are still large portions of Avondale that exist as food deserts.

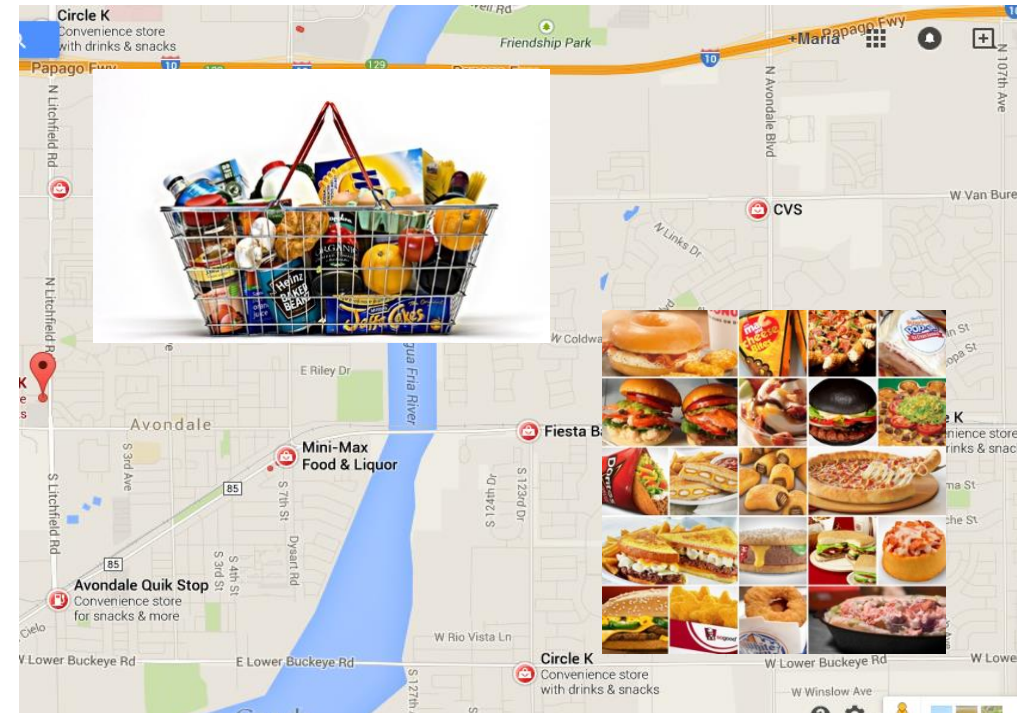


Avondale Food Desert

Grocery Stores in Avondale



Convenience Stores in Avondale



Mission

- The City of Avondale is in need of a Farmers Market in the Historic Western Avenue District as part of the revitalization efforts of the area.
- Provide a plan for Avondale to help facilitate an award of a USDA Grant (Farmers Market Promotion Program Grant)

The Mission of the Avondale Farmers Market is to increase the social well-being and overall quality of life to Avondale residents by bringing an attractive and sustainable venue which provides affordable, fresh, and local produce in order to reduce and conquer the negative impacts of the city's food desert problem.

Methods

- Case Study Research
- On-site Analysis
- Face-to-face Interviews



Advantages of Implementation

- Easy, Cost-Effective Solution
- Lower Transaction Costs for Consumers
- Healthy Food Access
- Nutritional Education
- Community Development
- Low Operating Costs



Infrastructure

Boy's & Girl's Club on Western Avenue

Open Space for Vendors



Facilities and Restrooms



Family Space



Parking and Accessibility

- Access to angled and parallel on-street public parking lining Western Avenue⁴
- Parallel secondary street public parking on all main roads perpendicular to Western Avenue between Central Avenue and Dysart Road⁴



Permits and Insurance

- Business Liability Policy
 - \$750-\$2,000 Annually
- Special Event Permit \$200
- A-Frame Permit \$30 Annually
- Prices Subject to Change Based on: Size, Scale, and Advertising Fees



Farmers Market Programs

- Women, Infants, and Children (WIC)
- Supplemental Nutritional Assistance Program (SNAP)
- Temporary Assistance for Needy Families (TANF)



Marketing

- Marketing will focus on efficiently and inexpensively creating materials that promote an attractive venue and goods that are comparable to other Farmer's Markets based on the community's culturally significant needs.

- ❖ Promotional Materials
- ❖ School Nutrition Newsletter
- ❖ Website and Social Media
- ❖ Care1st Resource Center
- ❖ Arizona Department of Economic Security



Products and Services



- Fruits and Vegetables
 - ❖ Crops sold from the grower directly are not subject to regulation
- Co-opt exchange table set up for the community growers
 - ❖ Allows the produced to be sold by a third party without the grower being present
- Crafts
 - ❖ Local retailers selling arts and crafts
- Prepared Food from vendors or local restaurants

Farmers Market Nutrition Program (FMNP)

- A requirement of the USDA grant
- FMNP is a part of WIC
 - ❖ “The WIC FMNP was established by Congress in 1992, to provide fresh, unprepared, locally grown fruits and vegetables to WIC participants, and to expand the awareness, use of, and sales at farmers’ markets.³”
- Who can sell for FMNP?
 - ❖ Growers that are certified in the FMNP
 - ❖ Classes offered by Arizona Department of Health Services

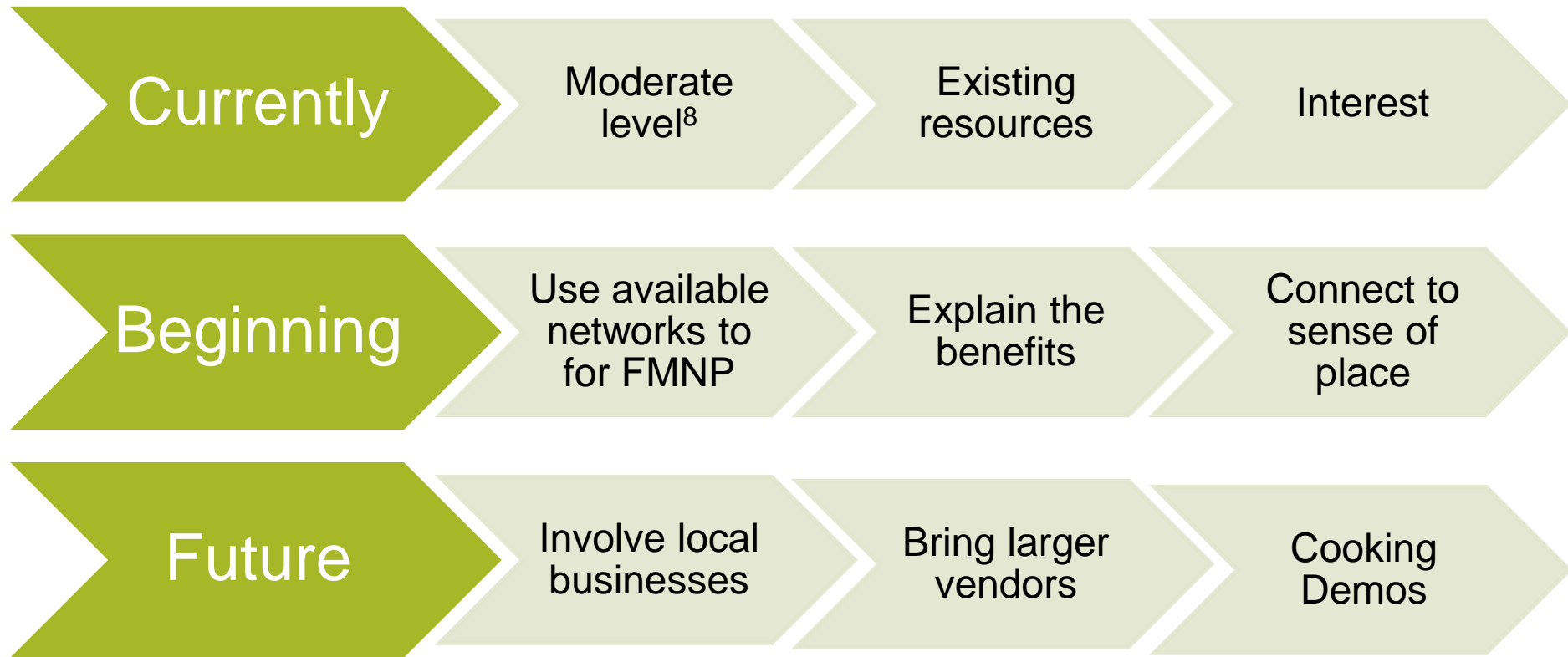


FMNP for Avondale Market

- Need at least 3 Growers Certified in FMNP
- Small Market = Small Growers
- Start in the Community
 - ❖ Community Gardens
 - ❖ Backyard Gardens

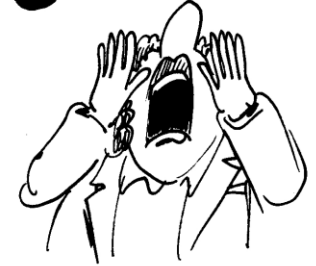


Community Engagement Timeline



Community Education & Involvement

Volunteers!



- ❖ Gardening, Cooking, Nutrition Educational Workshops
- ❖ Recruit Volunteers From: Interfaith Council Organizations, Youth Leadership Groups, Avondale Youth Advisory Commission, Boy Scouts, School Groups
- ❖ Recruit Local Businesses and Organizations: Arts & Crafts, State Forestry Edible Trees
- ❖ Donation Collection from Various Community Sources, i.e. Sprouts, who donates old seedlings to Farmers Markets

Avondale Farmers Market Guide

- ❖ A guide for local businesses and growers
- ❖ Emphasize ease of retailing at Farmers Market and its' Benefits
- ❖ Make it available on websites, through Chamber of Commerce, HAMA, and USDA



Community Engagement

- Connect the farmers market to a sense of place and to the support of local businesses
- Appeal to the individual by explaining how it will help them
- Make the benefits of the farmers market lasting and meaningful by having cooking demonstrations



Food for Thought



- Increase Methods of Local Transportation
- Voucher Program for Bus Passes
- Carpools for Vendors



- Bike Parking
- Childcare Availability
- Recycling and Composting Bins
- More Vendors=More Options



Shopping at the farmer's market
makes me feel so hip



your  cards
someecards.com

Questions?

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“The experience was really wonderful. The students did an exceptional job conceptualizing the problem and posing solutions to overcome. I was particularly impressed with the level of detail some of the groups were able to come up with! As an Alumni of the SOS myself I am glad to know there are classes like this available to students that showcase real work issues that cities work on. I hope some of the students will consider a career in local government when they graduate!”

**-Drew Bryck, Environmental
Programs Manager
City of Avondale**

Water Wise Gilbert

By: Bridget Harding, Erin Rugland, Caleb Schrank, & Adam Zogut

Prepared for:

- 💧 SOS 321 Policy and Governance
April 9, 2015
- 💧 Sustainability Open House
April 30, 2015



Why water?

- 💧 Current population ~230,000. Doubled every 5 years since 1980.
- 💧 ~93% of Arizona counties face risks of water shortages by mid-century. Demand > Supply by 2050.
- 💧 Average, national cost of water/1000 gallons is \$1.50



“This challenge to sustainability is unprecedented in scope and scale. Never before have water supplies in the arid West been so severely strained with the potential to affect so many people.”

~*The Mirage in the Valley of the Sun*

Sustainable Water Management Definition

“Sustainable water use would permit maintaining the benefits to all current users, without reducing benefits to natural ecosystems or future generations”

~ *Peter Gleick, Pacific Institute Scientist*

Problem Overview

The town of Gilbert, Arizona is looking to encourage local businesses to conserve water. So far, the city has had problems getting businesses to sign up for the Water Wise Gilbert program. Gilbert is in desperate need to find a solution that will incentivize businesses to join the Water Wise Gilbert.

Our Objective

Using policy and governance along with key concepts of sustainable practices, our goal is to transform the Water Wise Gilbert program into a hit success that other neighboring cities can use as a future template for governance.

Outline

- I. Interview
- II. Adopters
- III. Current Rate Comparisons
- IV. Proposal
- V. Economic Profile
- VI. Water Sense
- VII. Recap
- VIII. Final Questions
- IX. Appendix

Interview: Matthew Scholz

Major drivers:



1. Leadership commitment
 - 💧 Are the CEOs into water conservation?
2. Consumer perception
 - 💧 Are consumers concerned with water use?
3. Cost and savings
 - 💧 *But* water is so cheap that it is hard to motivate and there is seemingly little monetary incentive.

“If you want to affect change in businesses, pass more laws.”

Potential Early Adopters

Restaurants

- 💧 Joe's Real BBQ
- 💧 Joe's Farm Grill
- 💧 Liberty Market
- 💧 Snooze

Government Buildings

- 💧 Schools (39 total in 2012)
- 💧 Military

Other

- 💧 Office Buildings
- 💧 Hospitals
- 💧 Laboratories
- 💧 Hotels



Xeriscape Landscaping Example

Potential Survey Locations

1. NW Gilbert

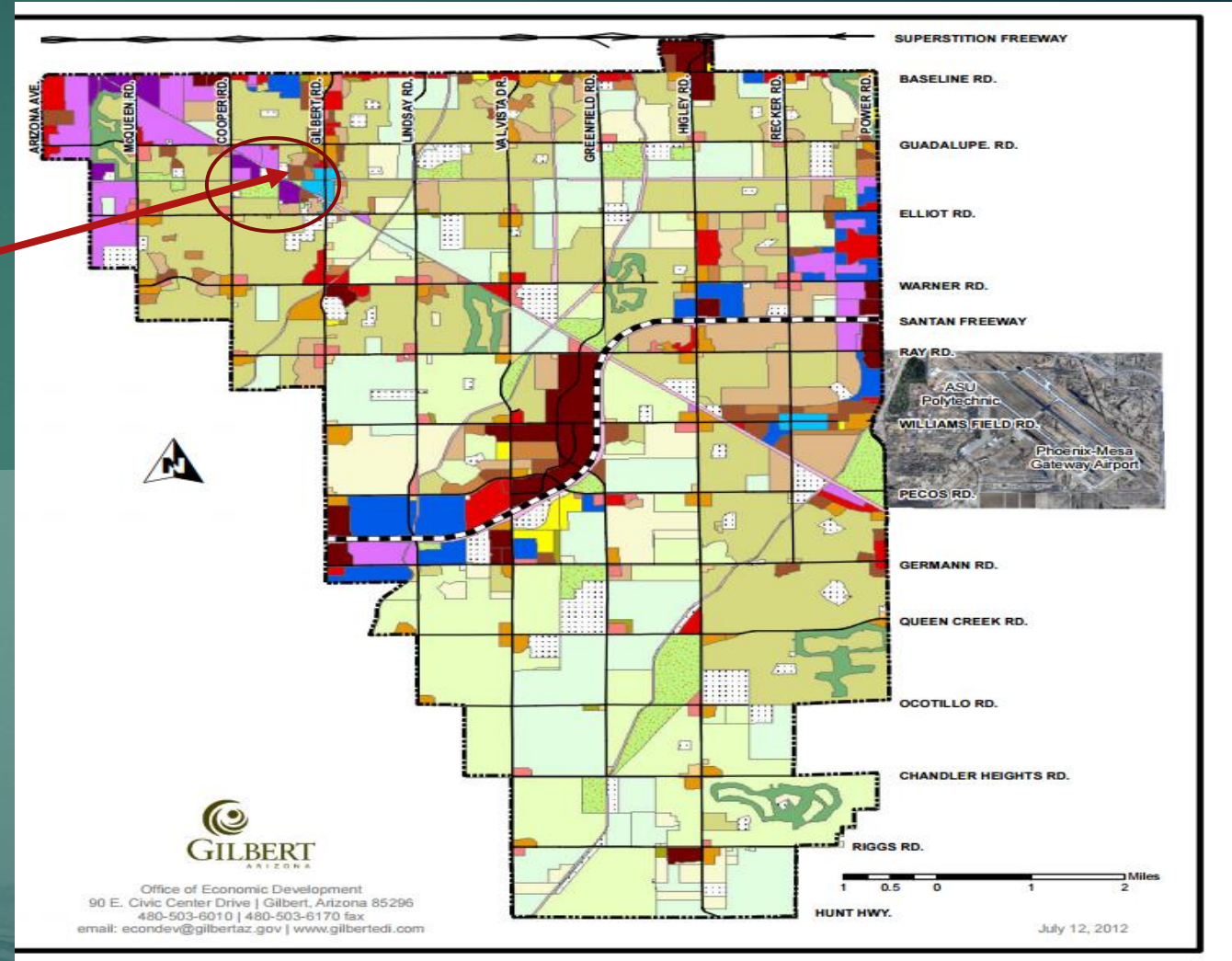
- 💧 Light industrial and general commercial
- 💧 Downtown

2. East Gilbert

- 💧 General commercial, business park, light industrial, regional commercial

3. Along the Santan Freeway (202)

- 💧 Regional commercial, business park, general commercial, etc.



Average Monthly Bill (Res.) and Annual Rainfall

Key

Average Monthly Bill for Family of Four Using:

2010

- 50 Gallons/Person/Day
- 100 Gallons/Person/Day
- 150 Gallons/Person/Day

2011

- 50 Gallons/Person/Day
- 100 Gallons/Person/Day
- 150 Gallons/Person/Day

2012

- 50 Gallons/Person/Day
- 100 Gallons/Person/Day
- 150 Gallons/Person/Day

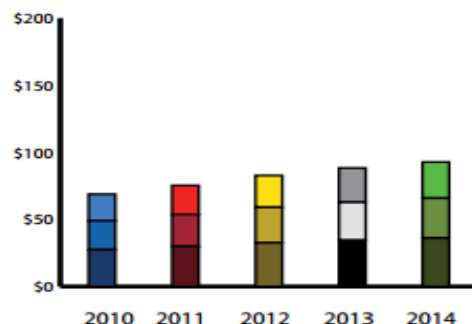
2013

- 50 Gallons/Person/Day
- 100 Gallons/Person/Day
- 150 Gallons/Person/Day

2014

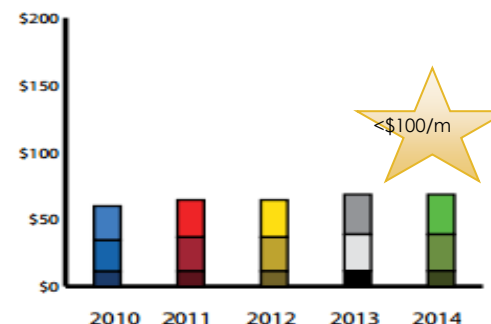
- 50 Gallons/Person/Day
- 100 Gallons/Person/Day
- 150 Gallons/Person/Day

Philadelphia



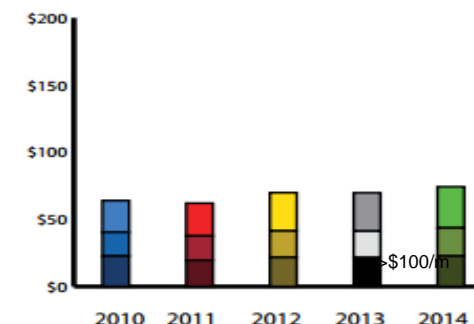
Avg. Rainfall: 41.45 in/year

Phoenix



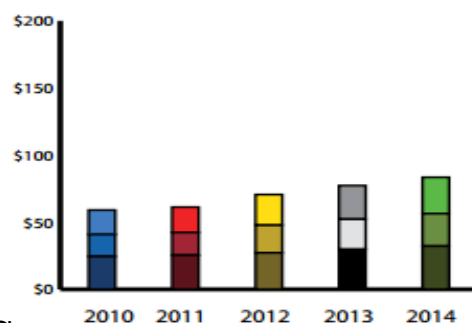
8.04 in/year

San Antonio



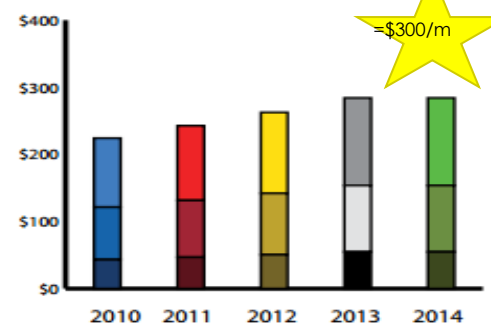
32.91 in/year

San Jose



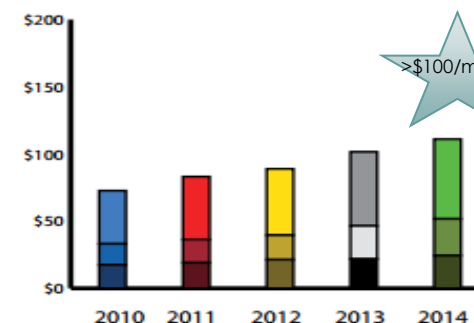
Avg. Rainfall: 15.09 in/year

Santa Fe



14.21 in/year

Tucson



11.92 in/year

Change the Tiers

Increase cost of water to reflect its importance as a resource

- 💧 Provides a further economic incentive
- 💧 Differentiate the tiers between residential and non-residential use

Model Tucson:

- 💧 Prices increased more than 50% over 5 years, yet water consumption fell 8%

To implement:

- 💧 Resistance is a given
- 💧 Provide limited, temporary rebates for early adopters so they can adjust to the new prices
 - 💧 Should help the business, but should also be invested
 - 💧 Provide only to interested businesses who are willing to be audited
- 💧 Those who are approved for the water rebate can also gain the Water Wise label

April is Water Awareness Month → tie in events to make businesses more water-conscious

Proposed New Rates

(2009 vs Proposed)

Water Rates- Meter size

Monthly Base Rate Based on Meter Size	Current Rate (as of 2009)	% Increase from 7/1/09 to Proposed Rate	Proposed Rate
¾"	\$14.63	8%	\$15.80
1.0"	\$21.09	8%	\$22.78
1.5"	\$41.34	8%	\$44.65
2.0"	\$72.72	8%	\$78.54
3.0"	\$116.60	8%	\$125.93
4.0"	\$178.40	8%	\$192.67
6.0"	\$329.34	8%	\$355.69
8.0"	\$494.17	8%	\$533.70

Water Rates- Non-residential Consumption

Non-Residential Consumption	Current Rate (\$ Per 1000 gallons) as of 2009	% Increase from 7/1/09 to Proposed Rate	Proposed Rate
0-10,000 Gallons	\$1.08	7%	\$1.16/1000
10,001-20,000	\$1.14	7%	\$1.22/1000
20,001-30,000	\$1.52	7%	\$1.62/1000
>30,000	\$1.80	7%	\$1.93/1000

Economic Profile

Gilbert Profile:

- Highest median and second highest average household income in Arizona (2012)

Household Data	Median Household income	Average household income	Average yearly water bill
Gilbert	\$76,574	\$85,672	~\$355.62-437.70*
Scottsdale	\$76,124	\$96,048	\$458.04
Phoenix	\$46,876	\$62,884	\$453

- Nearly 45% of Gilbert can be classified as "up and coming"
- Commercial consumers can afford a rate increase, especially when they are not paying sewage fees on 70% of their water bills.
- Water costs might go up, but with the rebates added, there are potentially no costs and commercial consumers will save water and go down a tier to pay a lower rate.

*Based on: Meter size of 3/4" and range of 12,000 - 18,000 gallons/month And current rates as well as including sewage fee

Rebates

Examples

1. Scottsdale

- 💧 Plumbing, turf removal, hot water recirculation, landscape irrigation controls
- 💧 Reimburse changes for up to a set amount of money

2. WaterSense

- 💧 Rebate finder

Recommendations

1. Offer rebates to 'innovators' to help ease the transition to higher water prices

2. Provide relevant rebates for water fixtures in businesses

- 💧 Toilets, sinks, etc.
- 💧 Turf removal
- 💧 Weather-based irrigation controllers

3. Use a "Rebate Finder" feature on the Water Wise website for ease of use

WaterSense Framework

Voluntary EPA Program Benefits:

- 💧 Achieve cost savings
- 💧 Increase competitive advantage
- 💧 Reduce Risk (water variability)
- 💧 Demonstrate leadership

Water Management Planning Steps:

1. Make a commitment
2. Assess facility water use
3. Set & communicate goals
4. Create an action plan
5. Implement the action plan
6. Evaluate progress
7. Recognize achievement

Recommendations

1. Educate Businesses
2. Partner with a marketing company to “speak their language”
 - 💧 Incorporate a new catchy slogan such as “Every Drop Counts”
 - 💧 Revamp the Water Wise Gilbert website
3. Provide an easy & effective way to monitor water usage
4. Change the tiers
 - 💧 Further economic incentive/a political backbone
5. Interdisciplinary approach
 - 💧 Partner with other departments, Energy Star, etc, to enhance promotion
6. Reinvent new ways to operate daily business functions

Conserving water is a no-brainer for businesses once the cost savings are communicated effectively!

Closing Remarks

Recap our proposed solutions:

With these new implementations, we are positive that the Water Wise Gllbert program can be extremely successful and draw in not only businesses, but encourage consumers to promote the program to laggard businesses as well.

Conserving water is not hard at all; it just takes a little effort and knowledge. If history has taught us anything, it is that water conservation needs to be a priority for not only residential households, but for businesses alike. After all, we all consume water, no matter who we are or where we come from; water helps keep the planet and the people living in it alive.

Final Questions

- 💧 How can the water pricing tiers be changed--would it depend on a vote, a referendum, or can it simply be done?
- 💧 Who are the large water users in Gilbert? Is the largest user overall the same as the largest user within the commercial sector? Is there one business who uses significantly more water than others?

“ The least expensive
gallon of water for
tomorrow is the one
save today.

we
”

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Appendix Outline

- I. Full Interview: Matthew Scholz
- II. Interview Questions
- III. Gilbert General Plan
- IV. Case Studies



Full Interview with Matthew Scholz

Q: What is the mission of the Sustainability Consortium and what is your roll?

A: Overall mission is to make consumer products more sustainable. Look at all different product categories. We use research to evaluate the most sustainable process and use of products. We ask, 'where are the main impacts in the supply chain and production?' We also use and distribute surveys with all suppliers, about 10-15 questions. An example question may be, "What do you do with your waste water?".

Q: The heart of what we are trying to get at: What drives business to be sustainable? To care about saving water? Is 'the bottom line' the end all be all or is there chance for other motivations?

A: Major drivers:

1. Leadership commitment, Are the CEOs into water conservation?
2. Consumer perception: Are consumers concerned with water use?
3. Cost and savings are driver, but do not pop up as much. No reason to go above and beyond the regulations if savings aren't made clear. (e.g. advertise water audits)
 - Water is so cheap, it's hard to motivate. There is little monetary incentive.
 - A big barrier is that businesses have limited time and resource to address sustainability issues. It's hard to commit. Even many of the really big companies have only one person committed to sustainability.
 - If you really want to affect change, pass more laws.

Full Interview with Matthew Scholz (cont.)

Q: What role do/can consumers play in commercial water conservation?

A: It's as simple as consumer preferences and decisions driving business actions. As stated earlier, are consumers concerned with water use? If they are, businesses will change to accommodate that.

Q: Do you know of any specific businesses that are implementing water conserving practices? If so, what motivates them?

A: Look into CSRs - corporate sustainability reports. Water is usually very high up. Most big companies are tracking their water use. The driver is supply risk, as well as public pressure through NGOs.

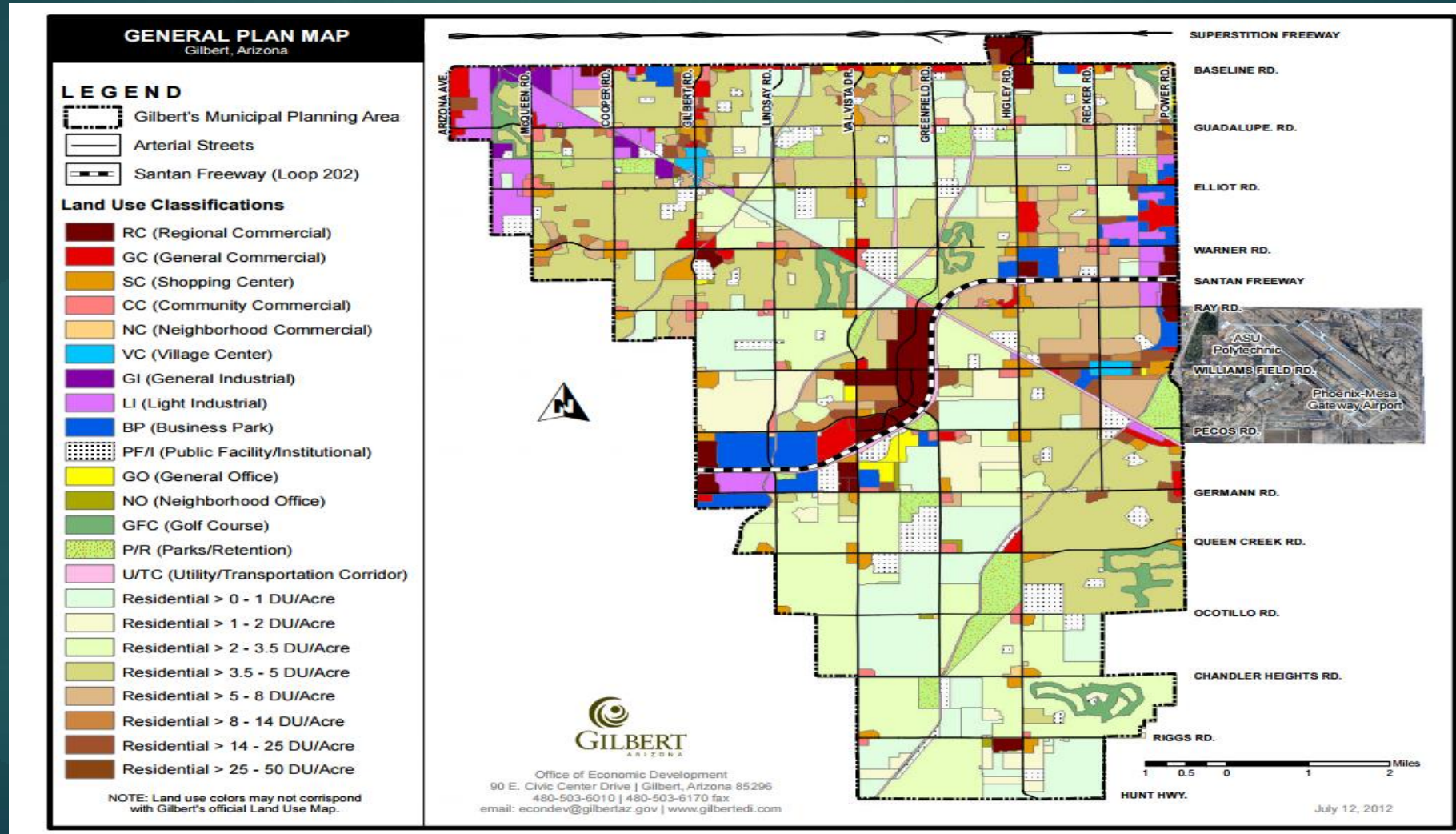
Q: Are there any ways water conservation can be made easier for businesses?

A: Make savings clear.

Interview Questions for Businesses

1. Are you interested in marketing sustainability initiatives?
2. Can you identify all the ways in which your business uses water? Do you know potential sources of excessive water use within your business?
3. On a scale of 1-10, how efficient would you rate your water use? (1 being least efficient).
4. What prevents you from implementing more efficient practices?
5. Is your water bill considered a financial burden? What percentage of the total costs does water make up for your business?
6. Why do you see water as deserving little (or a lot) of attention?
7. Which practices are you aware of that can save your business water (and \$)?
8. Are you willing to be “audited”, and let the city come and inspect your water use?
9. Given the tools, would your business pursue water conservation initiatives?

Gilbert General Plan Map



Case Study #1

During the early 1990's, parts of Southern California experienced severe droughts, which required "almost two-thirds of the water used within the Metropolitan Water District of Southern California (MWD) to be imported" (Morris & Lund 12). To combat the ongoing water scarcity problems, the state of California created "the 1991 and 1992 Drought Emergency Water Banks, which acted as a reserve for municipal cities that experience any future droughts. This provided the opportunity "to learn by doing" and "to learn from mistakes"" (Morris & Lund 17).



Case Study #2

Another place to look would be the city of Goodyear, Arizona, which is located in the western portion of the Phoenix Metropolitan area. Their “Fix a Leak” program is designed around households, but the same principles can be applied to businesses located within the city of Gilbert. “The program incentivizes household residents to reduce the amount of water they use by fixing a leak (or taking shorter showers, replacing turf with desert land-scaping, etc.) and in return, customers receive free spring training baseball tickets and other undisclosed gifts from the city of Goodyear” (Water Use It Wisely). The qualifications for receiving free baseball tickets are quite simple, “check your monthly water bill. If you use less water this January or February of 2015 than you did in January and February of 2014, you win. The community response is astonishing, about 2,000 households already qualified in January 2015” (Water Use It Wisely).

FREE SPRING TRAINING TICKETS

The Cleveland Indians and Cincinnati Reds offer your household two complimentary outfield box tickets if you reduced your water use this winter. Come to Goodyear Ballpark

Fix a Leak Week
March 16 - 22

Bring your utility bill or voucher to the information table for a water-saving gift!
To learn how to reduce your water use and redeem tickets, visit:

www.goodyearaz.gov/fixaleak

Goodyear
Indians
WaterSense
Fix a Leak Week
Reds
Liberty Utilities

The city of Goodyear joins U.S. Environmental Protection Agency WaterSense and Arizona Municipal Water Users Association encouraging residents to fix a leak and save water.

Case Study #3

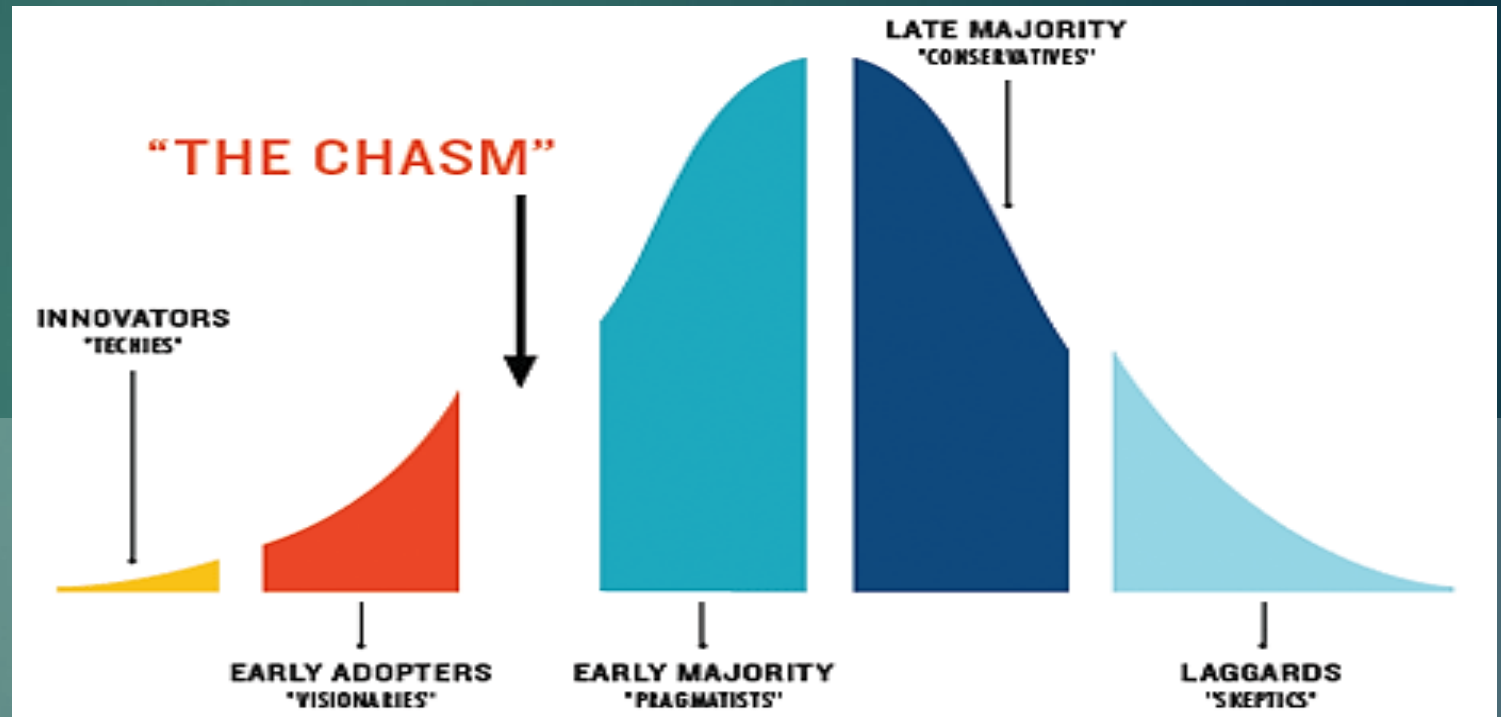
California Imposes First Mandatory Water Restrictions to Deal with Drought

- 💧 Governor implemented an executive order imposing mandatory water restrictions, a first in CA history
- 💧 **25%** Reduction for 400 Agencies over the next year
 - 💧 Serves 90% of residents
 - 💧 Reduction for residential and non residential consumers
- 💧 The final option in dealing with a imminent water crises



Idea Adoption

- 💧 Basics of getting people on board!
- 💧 Innovation: is the idea we want others to adapt
- 💧 Innovators and early adaptors are who you want to target
- 💧 “The Chasm”



Good resource:

http://www.indiana.edu/~t581qual/Assignments/Diffusion_of_Innovations.pdf

Steps to Diffusion of Idea/Innovation

5-Step Process:

- (1) **Knowledge** – person becomes aware of an innovation and has some idea of how it functions
- (2) **Persuasion** – person forms a favorable or unfavorable attitude toward the innovation
- (3) **Decision** – person engages in activities that lead to a choice to adopt or reject the innovation
- (4) **Implementation** – person puts an innovation into use
- (5) **Confirmation** – person evaluates the results of an innovation-decision already made

