

4,000,000 People, 100°F, 100 Days in a Row: “Greening” Phoenix and Other “Tan” Cities



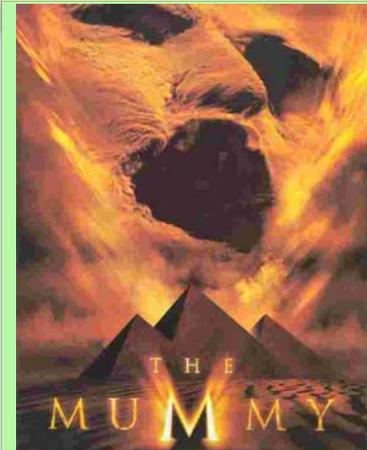
**Jon Fink, Director, Center for Sustainability Science Applications
Rob Melnick, Executive Dean, School of Sustainability
Arizona State University
Gaining Ground Conference
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Gaining Ground Conference Mantra: Cities are the Key to Global Sustainability

- Urban sustainability solutions require many perspectives
 - Different cities
 - Different regions
 - Different sectors
 - Different disciplines
- We bring a “tan” perspective to a “green” region

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Green City
View of
Tan People

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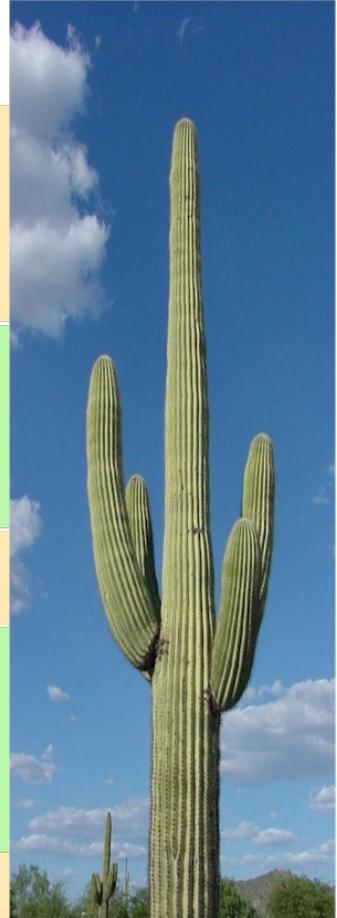
Why a Tag Team Presentation?

- Rob: Public policy wonk
- Jon: Science geek
- Senior administrators at Arizona State U.
- Run Global Institute of Sustainability
- Local, state, national, global experience



Today's Talk

- History and sustainability challenges of Phoenix and other “tan” cities differ from “green” cities
- Role of universities in addressing urban sustainability (ASU as an example)
- Three alternative futures for Phoenix
- Do we need an *Urban Genome Project* to synthesize our knowledge of cities?



Tan Cities / Green Cities

“Tan” Cities: Young, Fast Growth, Arid, “Wild West”
(Phoenix, Albuquerque, Las Vegas, Austin)

“Green” Cities: Mature, Slow Growth, Wet, Ecotopian
(Vancouver, Seattle, Portland, San Francisco)

Different sustainability challenges and lessons



PHOENIX



VANCOUVER

What are 4 Million People Doing in This Stinkin' Desert in the First Place?



Tan Cities in the Western U.S.

- Many emerged after World War II
- Economies started with agriculture, then tourism
- Dominated today by construction/real estate (growth)
- Depend on low-paying jobs and illegal immigration
- Water problems overcome (or ignored) for short run
- Young research universities with large responsibilities
- ***Today's tan issues will affect many more cities in future***



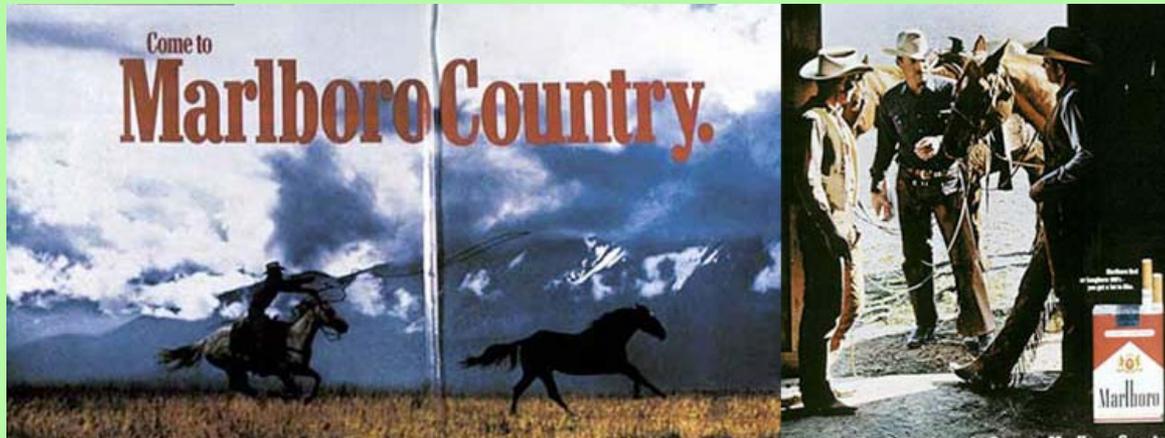
Tan City Grand Challenges of Sustainability and Urban Resilience

- How do we best manage a limited water supply?
- How to capitalize on abundant sunshine?
- Can urban design reduce the heat island effect?
- How can we protect biodiversity while still growing?
- How do we overcome an auto-centric mentality?
- Can transient population achieve “ownership of place”?



Obstacles to Developing Tax Solution Sets

- Inadequate funds to address sustainability issues
- Conservatism and libertarianism: “No new taxes!”
- Civic leadership often lacking
- Relatively little philanthropy
- Managing fast-growth expectations and greed
- Uncertainty about climate, energy, water disruptions



The University's Role

- Make complex sustainability problems understandable
- Present the facts
- Describe the consequences of inaction
- Train future leaders for sustainability and resilience
- Neutral convener of local decision-makers
- Innovate to develop novel solutions
- Demonstrate best practices
- ***Academia is an underutilized sector in most cities***

Urban Sustainability Tools at ASU

- Sustainable Cities Network (inspired by Gaining Ground)
- “Green Phoenix” proposal for stimulus funding
- Customized research for Tan city sustainability solutions
 - Renewable energy: Solar and algae-based biofuels
 - Energy efficiency: Building and neighborhood redesigns
 - Heat island effect mitigation: New materials and strategies
- Decision Theater and Decision Center for a Desert City



Decision Theater

- Lets non-experts explore future policy options
- Applies to environmental, social and economic issues
- Governor, state agencies, and cities use it frequently
- Major emphasis on improved water decision-making
- Global network being considered: Dubai, Beijing, DC



Three Possible Futures for Our Tan City

1. Climate change and growth dry us up and blow us away
2. Muddle through with less water, more heat, less money
3. Embrace and build a clean-tech economy and lifestyle



Climate Change and Continued Growth: We Dry Up and Blow Away

- Long recession & sales tax reliance Balkanize metro cities
- Hope for a return to “business as usual” creates blinders
- Public policies re-stimulate rapid growth
- Urban heat island effect gets worse
- Drought intensifies, reservoirs dry up, “water wars” erupt
- Elected leaders talk “green”, but walk “tan”
- ***Media reports: “Phoenix is unlivable”; people stay away***

Muddling Through: Reduced Water, More Heat, Less Money

- Water prices increase substantially, causing disparities
- Nighttime low temperatures go up; persist for months
- Economy spirals slowly downward
- Not getting better or worse, we end up with 1st scenario
- We postpone the inevitable
- ***Arizona's reputation: "A nice place to have been from"***

Clean-tech Economy and Lifestyle: Innovative Research, Thoughtful Policies

- Locally-developed technologies address urban problems
 - Novel materials slow heat island increase
 - Solar energy becomes affordable, creates wealth
 - Decision tools enable wise water use
- Locally-developed policies address urban problems
- Tan lifestyle out; Green lifestyle a “point of pride”
- Politicians who oppose “green” don’t get elected
- ***Rest of world looks to Phoenix for urban solutions***

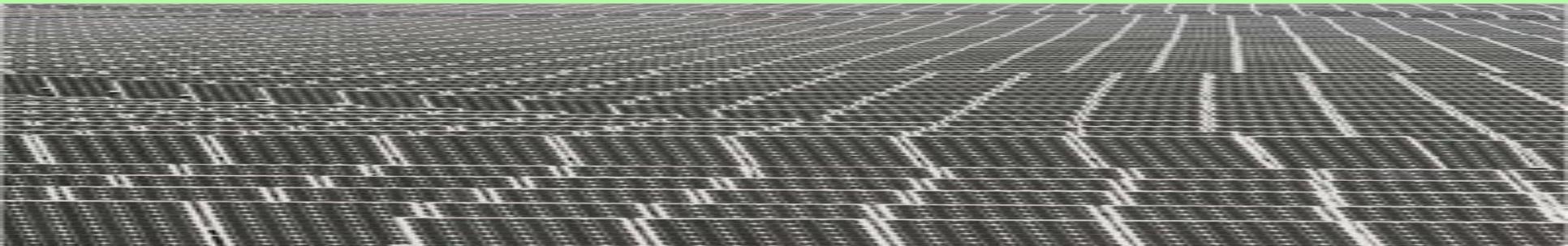
How to Achieve the Clean-tech Scenario: A Global Synthesis of Urban Knowledge

- When cities become sustainable, so will rest of society
- Urban sustainability solutions require vast knowledge
- Business, govt, NGOs, academia have different expertise
- Countless urban sustainability initiatives now emerging
- Classified cities better able to learn from each other
- ***Could an “Urban Genome Project” keep track?***



How to Figure Out Our City's Genetic Code: ASU Links Phoenix with Global Initiatives

- **World Bank:** Global Cities Indicators Facility
- **UN Habitat:** Largest 400 cities vulnerability assessments
- **NSF:** Urban Long Term Ecological Research network
- **NASA:** Urban remote sensing missions
- **IT corporations:** Cisco's Connected Urban Development
- **US National Academy of Sciences:** Urban Forum
- **MIT:** SENSEable Cities Lab



Do We Need an Urban Genome Project?

- Human Genome Project sought to cure human diseases
- Urban Genome Project seeks to cure planetary diseases
- Each person has unique characteristics embedded in DNA
- Each city's unique characteristics are reflected in its "DNA"
- HGP required multiagency and private sector funding
- Urban Genome Project needs multi-sector support
- But who will oversee it? WB? UN? EU? NASA? Google?