

**SCOTTSDALE CITY COUNCIL
WORK STUDY SESSION MINUTES
TUESDAY, OCTOBER 5, 2021**



**CITY HALL KIVA
3939 N. DRINKWATER BOULEVARD
SCOTTSDALE, AZ 85251**

CALL TO ORDER

Mayor David D. Ortega called to order a Work Study Session of the Scottsdale City Council at 5:40 P.M. on Tuesday, October 5, 2021.

ROLL CALL

Present: Mayor David D. Ortega; Vice Mayor Tammy Caputi; and Councilmembers Tom Durham, Betty Janik, Kathy Littlefield, Linda Milhaven, and Solange Whitehead

Also Present: City Manager Jim Thompson, City Attorney Sherry Scott, City Treasurer Sonia Andrews, City Auditor Sharron Walker, and City Clerk Ben Lane

PUBLIC COMMENT – Natalie Chrisman Lazarr, Chair of the Scottsdale Environmental Advisory Commission (SEAC), discussed heat island effects and mitigation strategies and the SEAC's support of recommendations from the Arizona State University study (which is the subject of tonight's Work Study Session) and a possible Tree and Shade Plan for Scottsdale.

1. Urban Heat Island Mitigation Study Update

Request: Presentation, discussion, and possible direction to staff regarding the Urban Heat Island Mitigation Study.

Presenter(s): Tim Conner, Environmental Initiatives Manager and David Hondula, Arizona State University Professor

Staff Contact(s): Randy Grant, Planning, Economic Development, and Tourism Executive Director, 480-312-2664, rgrant@scottsdaleaz.gov

Environmental Initiatives Manager Tim Conner gave a PowerPoint presentation (attached) on the Urban Heat Island Mitigation Study.

Arizona State University Professor David Hondula gave a PowerPoint presentation (attached) on the Urban Heat Island Mitigation Study.

NOTE: MINUTES OF CITY COUNCIL MEETINGS AND WORK STUDY SESSIONS ARE PREPARED IN ACCORDANCE WITH THE PROVISIONS OF ARIZONA REVISED STATUTES. THESE MINUTES ARE INTENDED TO BE AN ACCURATE REFLECTION OF ACTION TAKEN AND DIRECTION GIVEN BY THE CITY COUNCIL AND ARE NOT VERBATIM TRANSCRIPTS. DIGITAL RECORDINGS AND CLOSED CAPTION TRANSCRIPTS OF SCOTTSDALE CITY COUNCIL MEETINGS ARE AVAILABLE ONLINE AND ARE ON FILE IN THE CITY CLERK'S OFFICE.

Councilmembers provided the following recommendations:

- Provide recommendations on methods for enforcing tree replacement.
- Determine a balance between water conservation and heat island mitigation.
- Analyze and test the use of water needs in the desert to determine proven results.
- Reorganize the timeline to move up community engagement and citizen input on land temperature and story maps.
- Provide a cost benefit analysis for the City Council's evaluation.
- Divide the city into similar characteristic (prototype) areas and select one or two to evaluate the processes and budget considerations.
- The City Council should follow the guidelines adopted in any sustainability plans.
- Consider a holistic approach to sustainability.
- Engage community groups to assist with proposed landscaping improvements, including planting trees.
- Investigate the possibility of adding shading to alleys.
- Include transportation elements in sustainability plans to reduce heat loads on major streets.
- Incorporate enforcement mechanisms related to broken and/or leaking pipes and irrigation systems.

2. Sustainability Planning Process Update

Request: Presentation, discussion, and possible direction to staff regarding the City's Sustainability Planning Process.

Presenter(s): Tim Conner, Environmental Initiatives Manager and Bill Campbell, Arizona State University Walton Sustainability Services Portfolio Manager

Staff Contact(s): Randy Grant, Planning, Economic Development, and Tourism Executive Director, 480-312-2664, rgrant@scottsdaleaz.gov

Environmental Initiatives Manager Tim Connor introduced the presentation on the sustainability planning process updates.

Arizona State University Walton Sustainability Services Portfolio Manager Bill Campbell gave a PowerPoint presentation (attached) on the Sustainability Planning process.

Councilmembers provided the following recommendations:

- Encourage citizen involvement by informing the public, offering opportunities to view or listen, and possibly participate, in all workshops and meetings.
- Send out regular reports to citizens with updates on the process.
- Incorporate transportation elements into the sustainability plan by encouraging installation of, and identifying locations of, available electric vehicle charging stations.

ADJOURNMENT

MOTION AND VOTE – ADJOURNMENT

Councilwoman Whitehead made a motion to adjourn. Councilwoman Janik seconded the motion, which carried 7/0, with Mayor Ortega, Vice Mayor Caputi, and Councilmembers Durham, Janik, Littlefield, Milhaven, and Whitehead voting in the affirmative.

The Work Study Session adjourned at 7:09 P.M.

SUBMITTED BY:



Ben Lane, City Clerk

Officially approved by the City Council on November 9, 2021

CERTIFICATE

I hereby certify that the foregoing Minutes are a true and correct copy of the Minutes of the Work Study Session of the City Council of Scottsdale, Arizona, held on the 5th day of October 2021.

I further certify that the meeting was duly called and held, and that a quorum was present.

DATED this 9th day of November 2021.



Ben Lane, City Clerk

Heat Island Mitigation Plan Update
Identifying Strategies for a Cooler Scottsdale
Scottsdale City Council
Work Study Session October 5, 2021

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Tonight:

Presentation of ASU's Work to Date

Discussion / Questions and Answers

Possible Direction to Staff & ASU

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Intergovernmental Agreement Signed June 2020



3-Year Agreement with (3) 1-Year Scopes of Work
Up to \$100,000 / Year

3

Why Start with Urban Heat Island Study?

Input Provided from
Scottsdale Environmental Advisory Commission
Record Elevated Temperatures in Summers
Growth and Density Anticipated in Scottsdale
Growth Areas

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Identifying Strategies for a Cooler Scottsdale

First Year Scope of Work FY 2020 – 2021



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Project Overview



Bill
Campbell



Jenni
Vanos



David
Hondula



Mary
Wright



David
Saffor

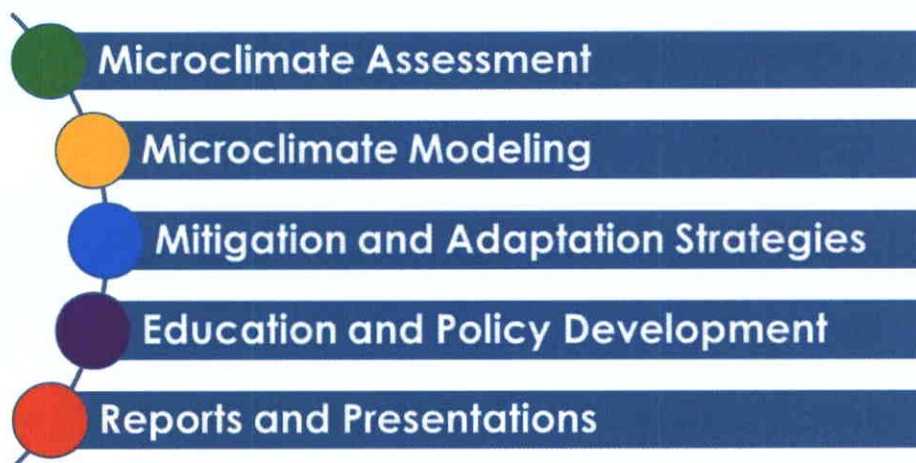
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Project Overview

- Conduct a series of assessments to...
 - Aid the city in prioritizing programs and policies
 - Provide staff and residents with a better understanding of current risks, and possible heat mitigation and adaptation options
- September 2020–June 2021

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Project Overview



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Project Overview

- Deliverables
 - Technical report (two volumes)
 - Data package
 - StoryMap
 - Presentations to staff, SEAC, City Council

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Project geography & key terms

- Growth areas
 - McDowell Road/Scottsdale Road (MRSR)
 - Old Town
 - Greater Airpark
- “Metro Scottsdale”
- Scottsdale
- Census block groups
- Parcels

- Air temperature
- Surface temperature
- Mean radiant temperature



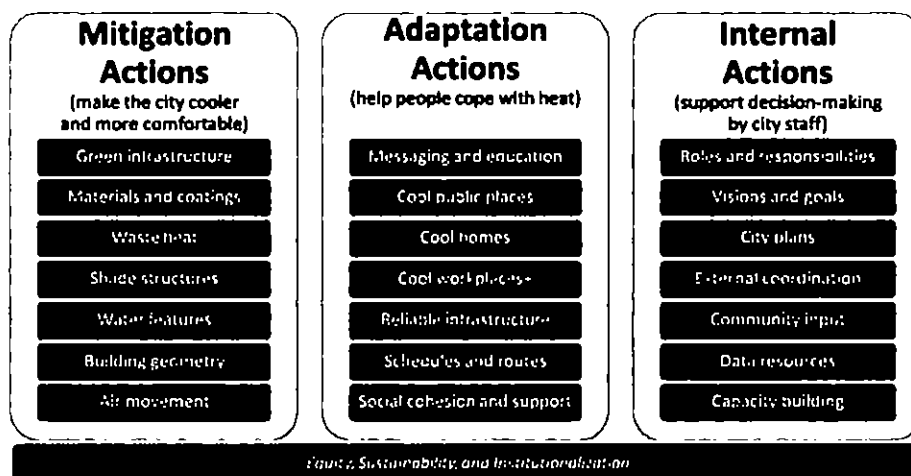
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Today's presentation

- Interruptions welcome!
- Overview of recommendations
- Land cover analysis
- Land surface temperature analysis & modeling
- Tree analysis
- Mean radiant temperature analysis & thermal photography
- Possible actions to support recommendations

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HeatReady Cities Framework



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Recommended Heat Mitigation Goals

1. Increase tree canopy, particularly along frequently traveled pedestrian walkways and along the south and west facades of buildings
2. Reduce the land area of exposed dark asphalt, dark roofs, and other hot surfaces
3. Improve and increase pedestrian shade amenities through building-integrated and free-standing shade structures, particularly along frequently traveled walkways and in locations that support public transportation

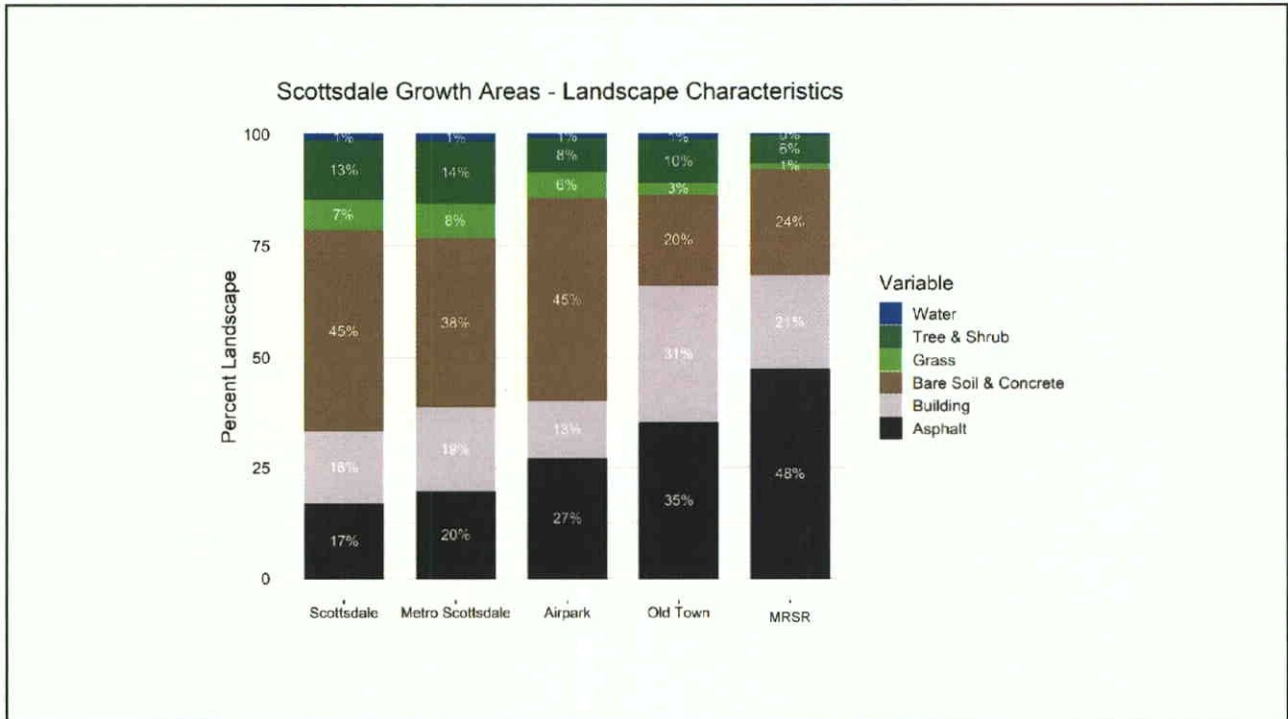
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Land cover analysis

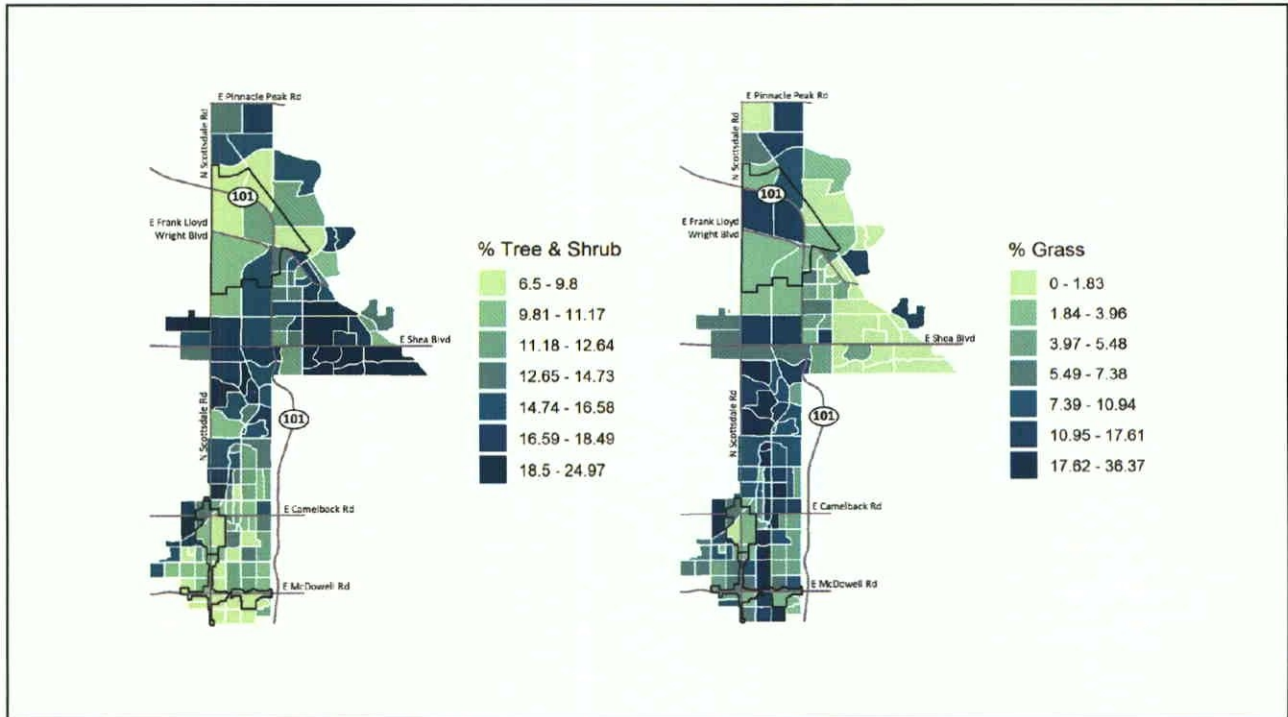
- Aerial imagery from 2015
- Classification from CAP LTER
- 1 meter scale
- 94% accuracy



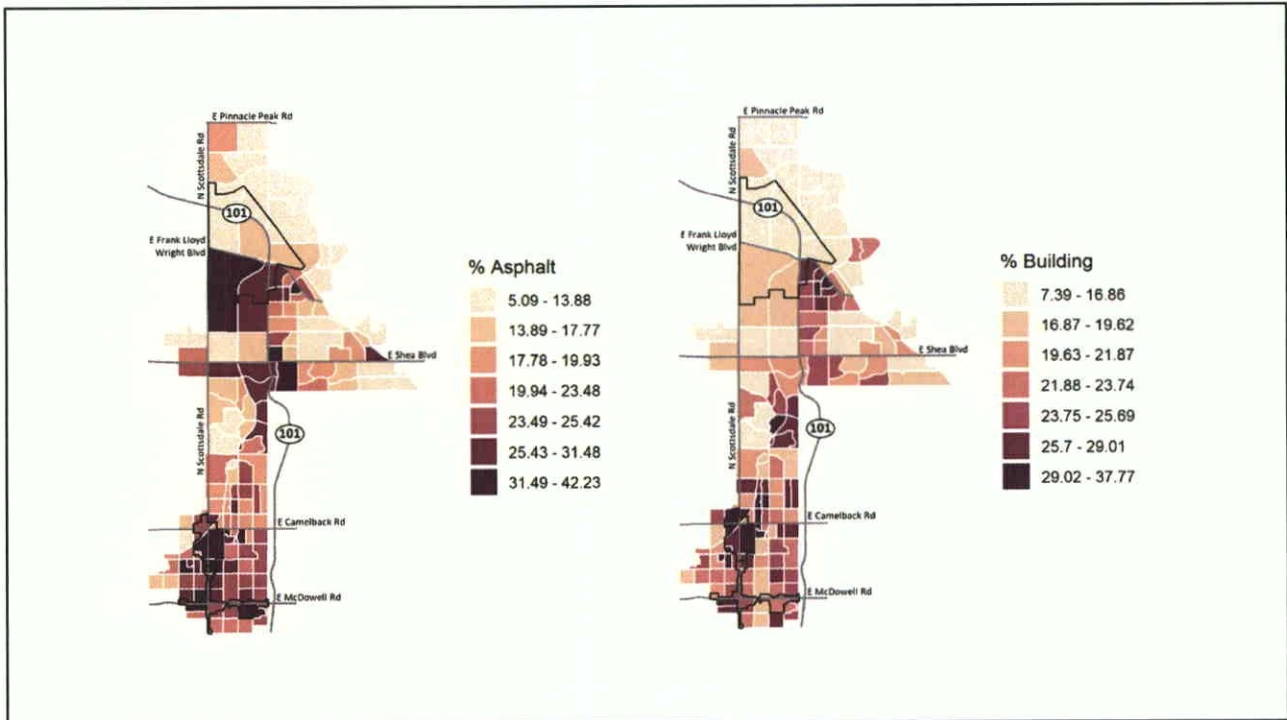
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Land cover analysis

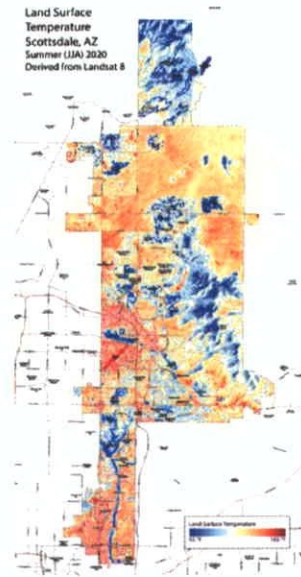
- 8201 E McDowell Road
- 68% building and asphalt
- 85.9 acres of building and asphalt



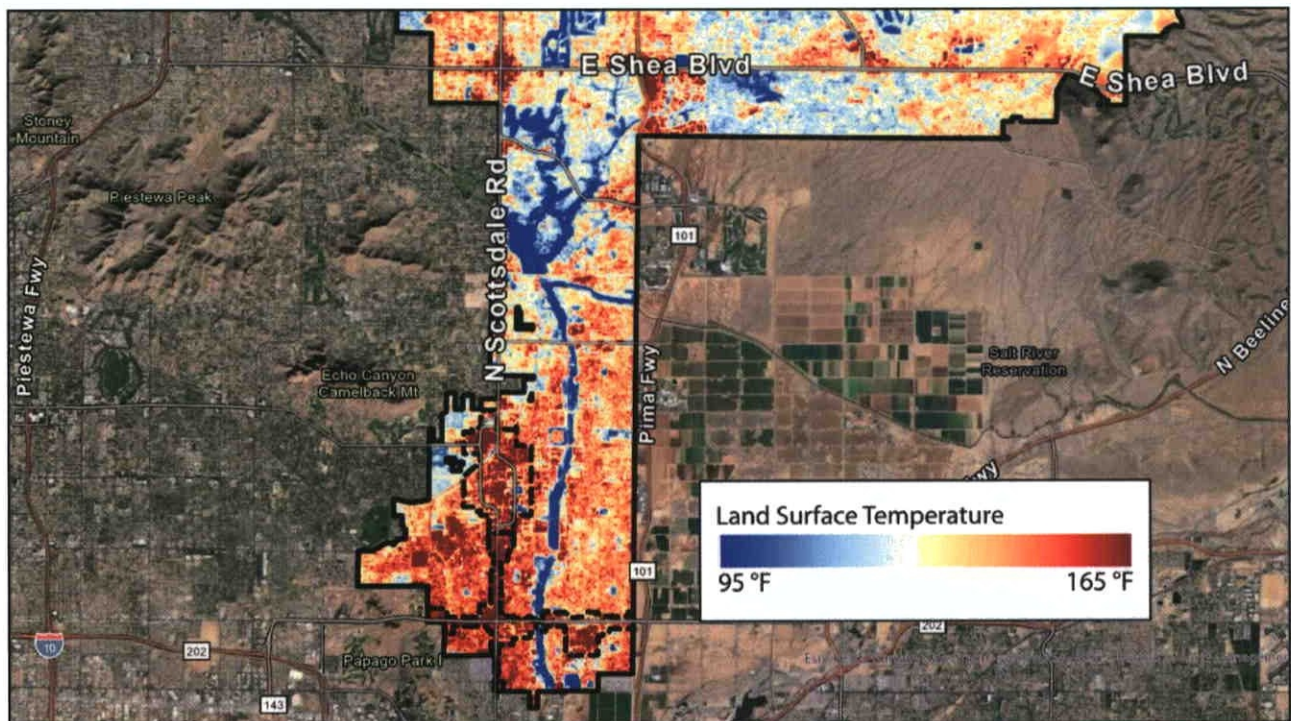
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Land surface temperature analysis

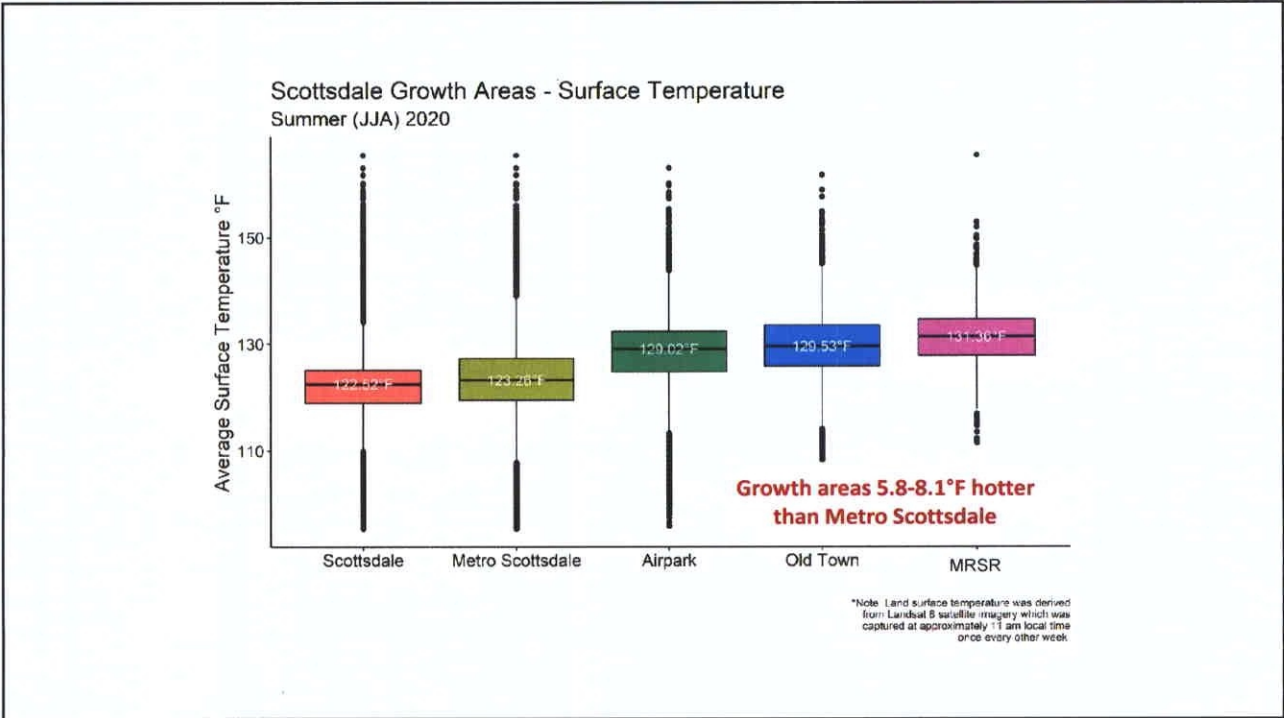
- NASA LANDSAT
- 2015 and 2020, June-August
- Late morning overpass
- 30m resolution



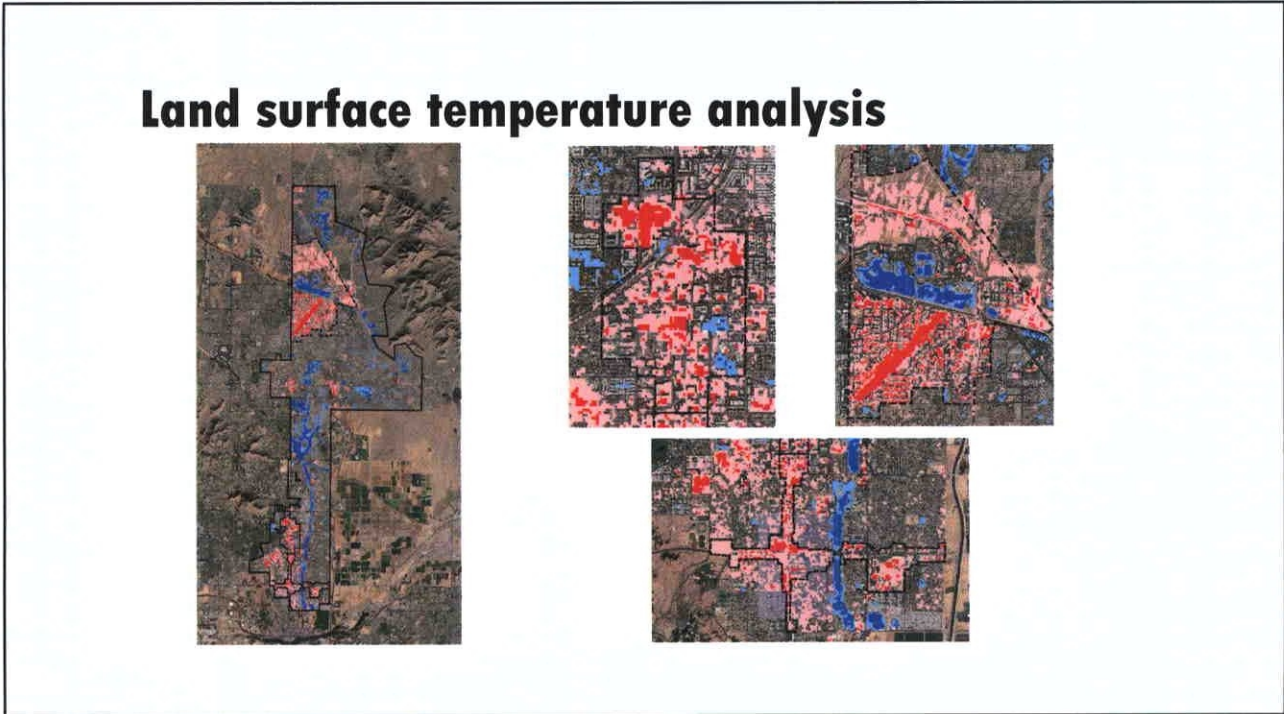
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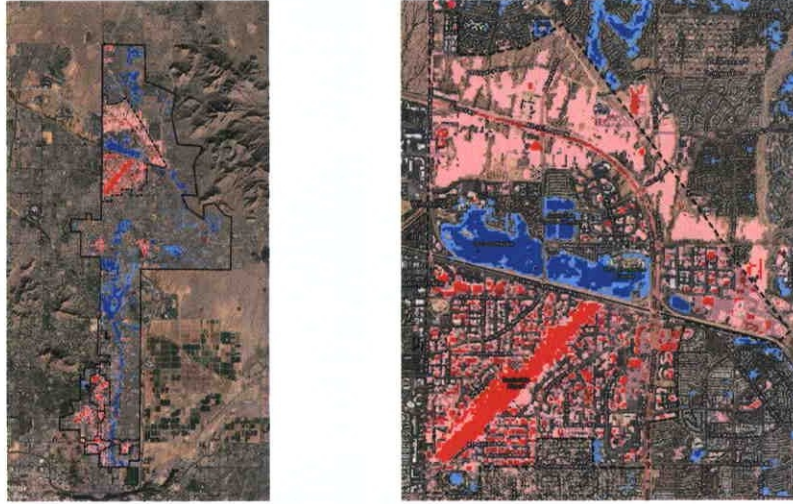


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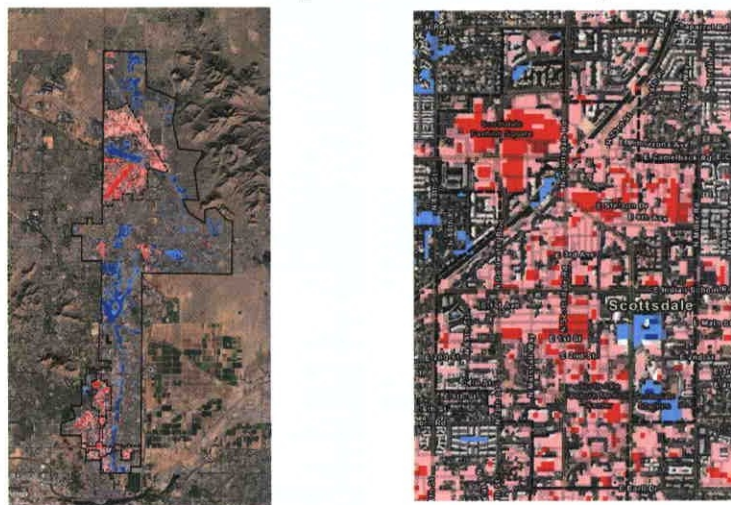
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Land surface temperature analysis



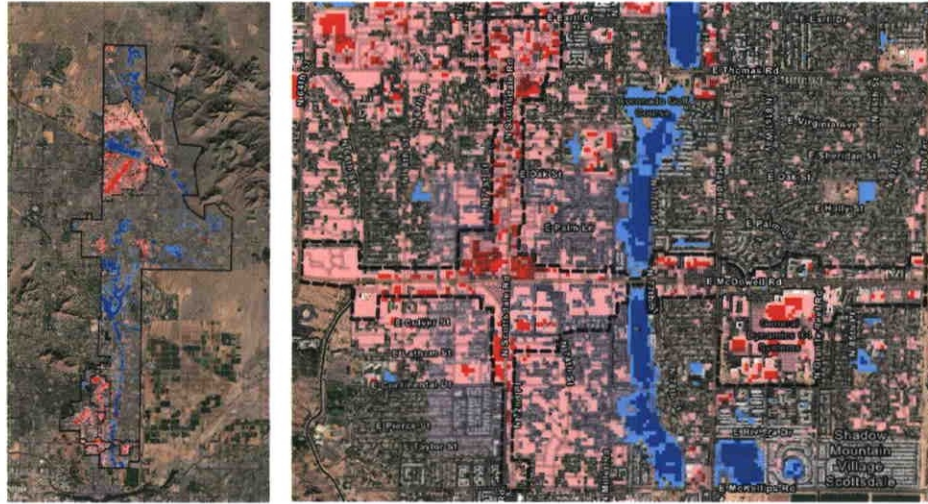
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Land surface temperature analysis

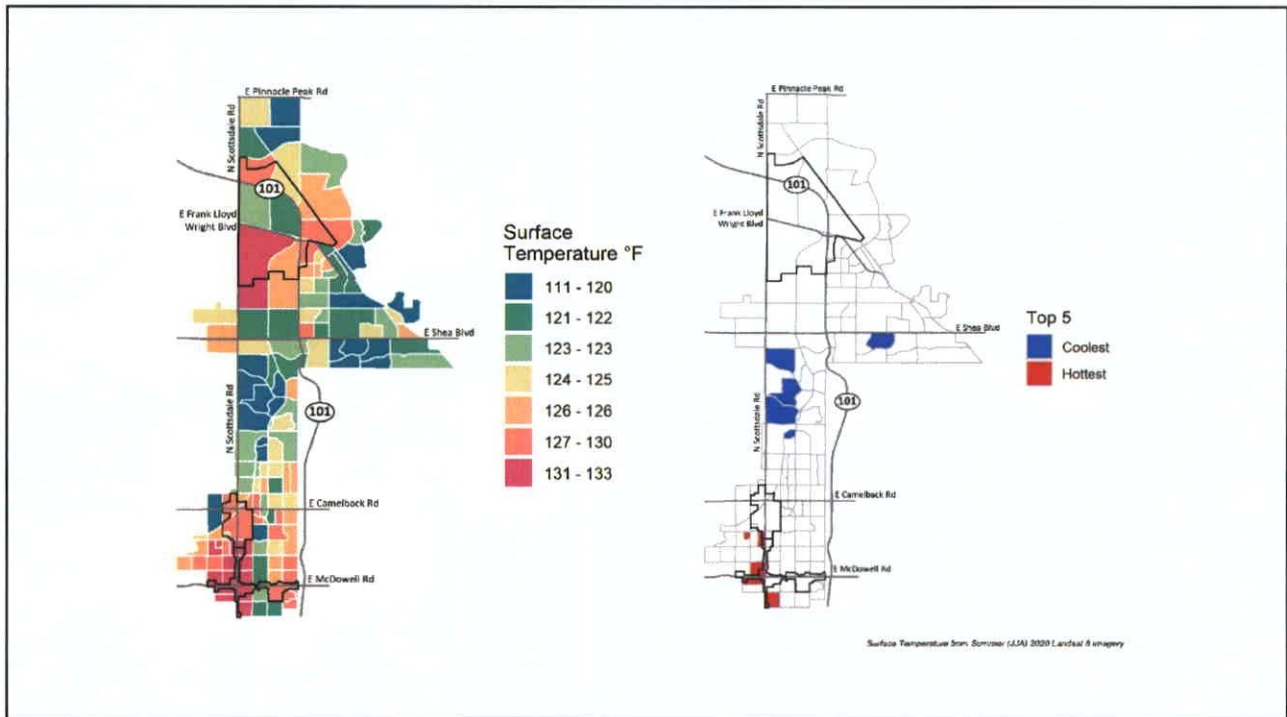


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Land surface temperature analysis

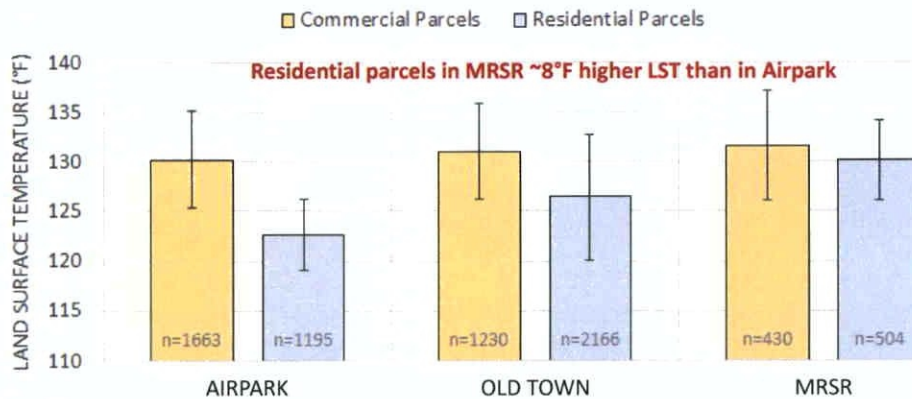


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Land surface temperature analysis



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Land surface temperature analysis



Tract 7300, Block Group 2
23.8% Tree and Shrub coverage
 Metro Scottsdale average = 13.8%
106.9°F average LST
 Metro Scottsdale average = 118.3°F



Tract 7501, Block Group 2
8.8% Tree and Shrub coverage
 Metro Scottsdale average = 13.8%
122.3°F average LST
 Metro Scottsdale average = 118.3°F

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Land surface temperature modeling

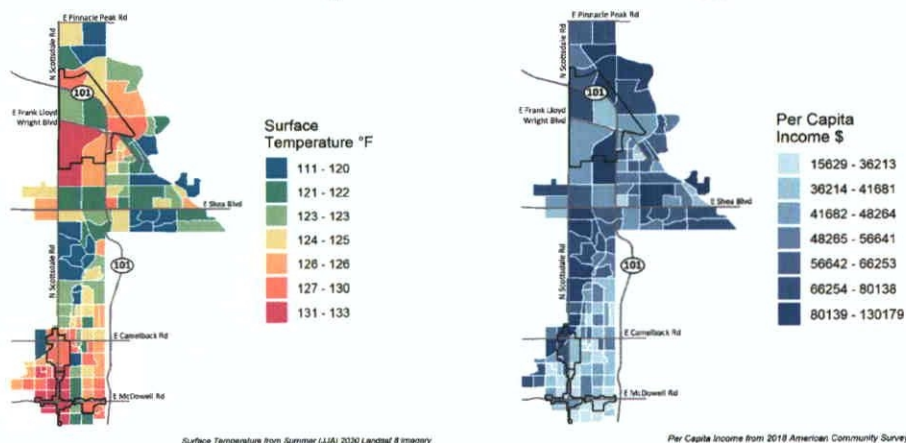
- Per 1% increase in land cover type in a census block group

Trees and shrubs	0.59°F lower
Grass	0.39°F lower
Asphalt	0.31°F higher
Building	0.25°F higher

“To avoid LST reductions, add 1 unit of trees/shrubs per 2 units of asphalt/building”

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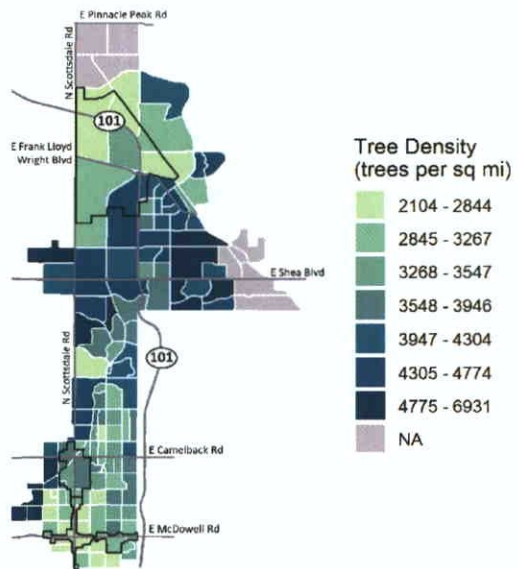
Land surface temperature modeling



Each \$10,000 increase in census block group average per capita income was associated with a 1.13°F reduction in land surface temperature.

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Tree canopy assessment



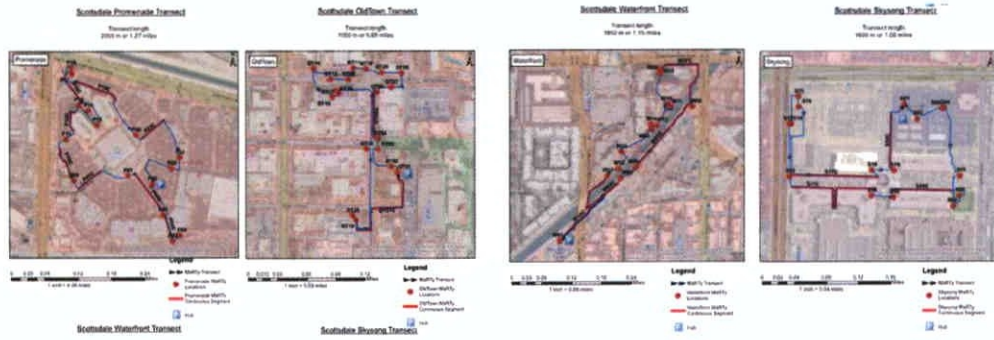
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Microclimate assessment



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Microclimate assessment



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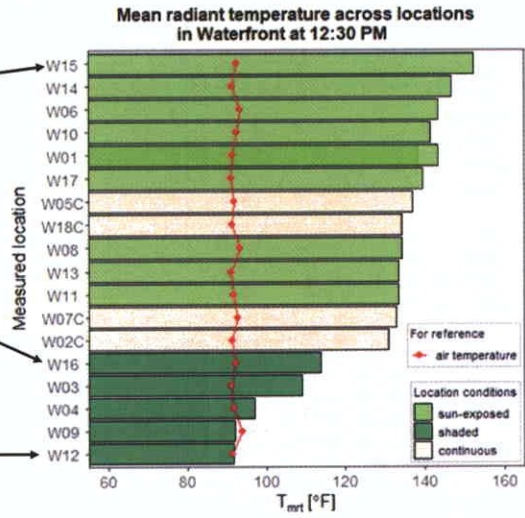
Microclimate assessment



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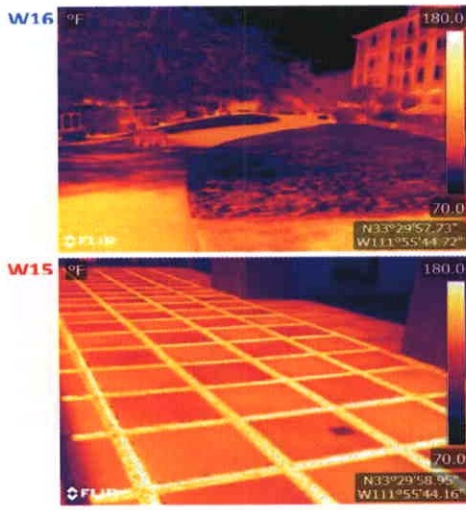
Microclimate assessment

Naturally shaded outdoor green spaces have MRTs 35-60°F lower than exposed hardscapes



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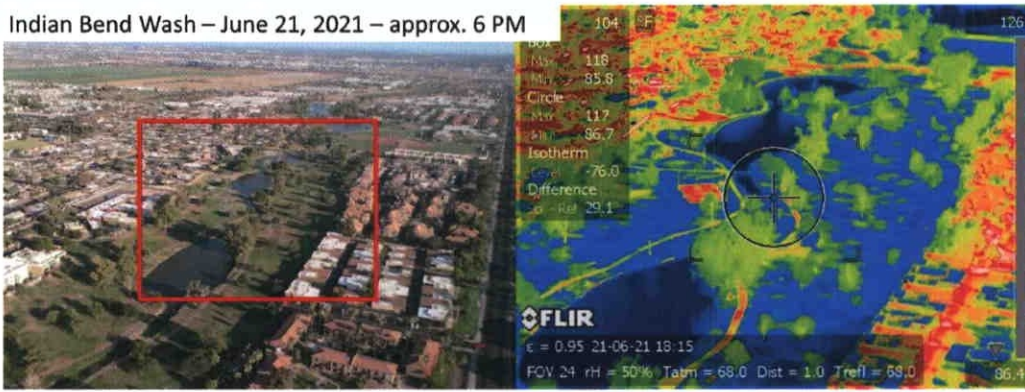
Microclimate assessment



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Airborne thermal photography

Indian Bend Wash – June 21, 2021 – approx. 6 PM



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Indian Bend Wash stations



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Recommendations – general comments

- Conceptual alignment with many city planning documents
- Not all plans and guidelines provide specific targets or mechanisms for evaluation/benchmarking
- New development vs. existing infrastructure
- Southern Scottsdale as a priority

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Possible actions for R1 – Increase Tree Canopy

- Develop comprehensive urban forestry master plan, with supporting budget, personnel, enforcement, services
- Adopt goal for minimum tree coverage in all census block groups
- New recommendations, incentives, requirements for tree planting and preservation in growth areas and/or Southern Scottsdale
- Enhance partnerships with tree-related organizations

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Possible actions for R2 – Reduce dark surfaces

- Cool roof inventory, energy consumption/building performance data
- Reflective roof surfaces for city infrastructure (test different options)
- Citywide cool roof program
- Cool pavement pilot program
- Shade structures for city-owned parking lots, incentives for private
- Temporary installations on large parking lots
- Add urban heat language to parking standards/requirements
- Increase shade coverage requirements for surface parking
- Economic analysis for shaded parking

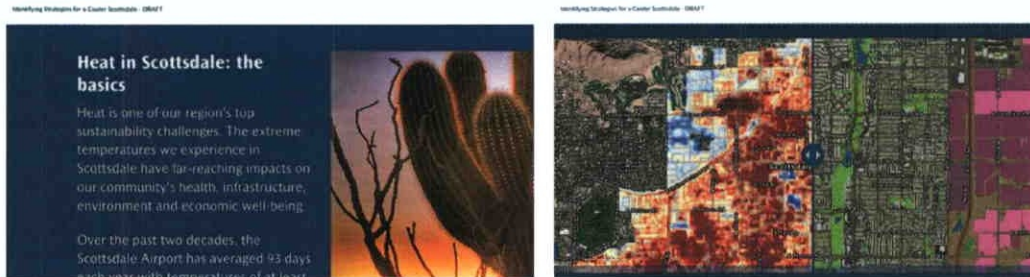
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Possible actions for R3 – Pedestrian shade

- More shade at more transit stops and other key routes/corridors
- Inventory of shade/cooling amenities along priority ped. routes
- Establish targets for shade coverage for pedestrian routes and mechanism for monitoring progress
- Community workshops to identify priority shade locations
- Inventory shade availability at bicycle racks, add shade
- Inventory shade availability at water fountains, add shade

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Cooler Scottsdale StoryMap



<https://arcg.is/1XjjPO>

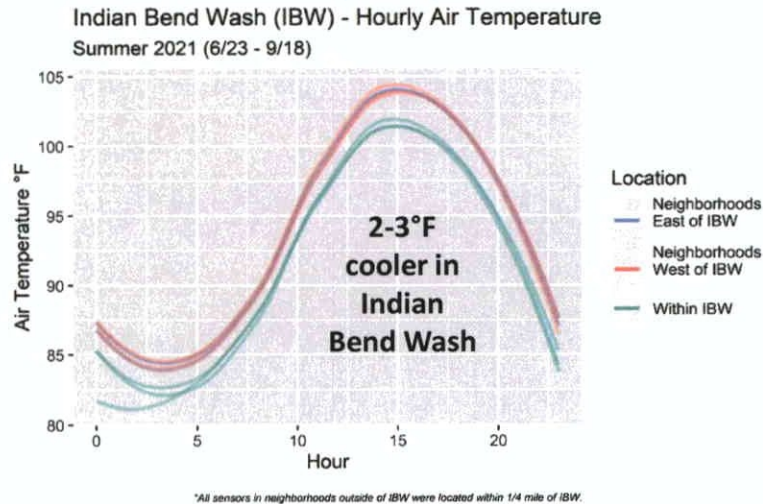
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Forthcoming in volume 2

- Expanded mean radiant temperature analysis
- Indian Bend Wash cooling assessment
- Expanded airborne thermal photography analysis
- Updates/additions to recommendations

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Forthcoming in volume 2



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Identifying Strategies for a Cooler Scottsdale - Next Steps

- Short Term (1-2 Years)
 - ✓ *Strategies for a Cooler Scottsdale* will become component of Sustainability Plan
 - ✓ Incorporate Story-map into city web site
 - ✓ Tree Ordinance – Tree City USA
 - ✓ Assess + strengthen ordinances, design standards, guidelines + incentives to increase tree canopy + consider urban heat island effects—particularly in Growth Areas
 - ✓ Reflective roof surfaces – city properties
- Longer Term (2+ Years)
 - ✓ Tree/Shade or Urban Forestry Plan(s) – particularly in Growth Areas
 - ✓ Develop recommendations, incentives and other programs for residential tree planting
 - ✓ Inventory shade/cooling amenities along walking routes, at bicycle racks, at public fountains – increase shade in these locations

ASU Rob and Melani Walton
Sustainability Solutions Service
Arizona State University

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Identifying Strategies for a Cooler Scottsdale

Discussion / Questions and Answers

Possible Direction to Staff & ASU

Thank you

Sustainability Plan Update

Scottsdale City Council
Work Study Session October 5, 2021

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Intergovernmental Agreement Signed June 2020



3-Year Agreement with (3) 1-Year Scopes of Work
Up to \$100,000 / Year

2

Sustainability in Scottsdale

Sustainability in Scottsdale refers to the long-term social, economic, and environmental health of the community

A Sustainability Plan can help achieve a sustainable future that addresses the City's broad range of goals as defined in the 2035 General Plan

Including: climate action, energy-efficiency, land use, housing, transportation, public health, renewable energy, ecosystem protection, economic development, and livability

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ASU Sustainability Plan Logic Model for Scottsdale		
Activities	Outputs	Deliverables
Phase 1: Sustainability Scan		
<ul style="list-style-type: none"> Best Practice Review Build on ICLEI Sustainability Initiatives Assessment and Program Audit Interview Key Stakeholders 	Shared understanding and problem definition: <ul style="list-style-type: none"> Understanding of what has been tried before, with what success and challenges, and why Preliminary Sustainability Scan for City and community of Scottsdale, including: <ul style="list-style-type: none"> Preliminary gap analysis re: policy, metrics, programs, staffing, and budgets, e.g. GHG inventory 	Sustainability Scan Report and Presentation
Phase 2: Sustainability Planning Workshops		
<ul style="list-style-type: none"> Provide Sustainability Scan report as background reading Prepare and conduct Sustainability Planning Workshops Post-workshop summary of key themes 	Workshops will: <ul style="list-style-type: none"> Build on ICLEI Vision and Goals Build on ICLEI Indicators Identify stakeholders and build champions Establish measurement and reporting guidelines 	City Staff Workshop #1: up to 30 participants from various city departments SEAC+ Workshop #1: two workshops for up to 25 participants from citizen groups, citizen advisory committees and city liaisons as defined by the Scottsdale core team Workshop Summary Report
Phase 3: Final Report and Presentation		
<ul style="list-style-type: none"> Provide combined Sustainability Scan and workshop summary report as background reading Prepare and conduct Implementation Planning Workshops Prepare final Sustainability Plan Report and Presentation 	Refine vision, goals, and metrics for Sustainability Plan Draft Implementation Strategy : <ul style="list-style-type: none"> Coalition of stakeholders and champions Measurement and reporting Articulate key elements of an implementation strategy Plan implementation mechanism 	City Staff Workshop #2 Citizen Workshop #2 (two workshops as above) Final Sustainability Plan Report and Presentation

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City Council Participation in the Development of the Sustainability Plan

Initial presentation in October

Three to four informational meetings will be held with in groups of two or three in December or January

Meet in early Spring 2022 in a working session

Final presentation to Scottsdale City Council Fall 2022

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Other Stakeholders Participation in the Development of the Sustainability Plan

Monthly meetings/ongoing collaboration with Office of Environmental Initiatives

Monthly meetings with the Sustainable Scottsdale Steering Team (SSST)

Four update and three working session meetings with the Scottsdale Environmental Advisory Commission (SEAC)

Two three-hour workshops will be held with the City staff (up to 30 participants)

Four three-hour workshops will be held with the SEAC and other citizen representatives (up to 25 participants)

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Sustainability Plan Update

Discussion / Questions and Answers

Possible Direction to Staff & ASU

Thank you