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Cooling off our urban heat islands

By T. DeLene Beeland

Sun-baked Phoenix is becoming a desert island - not the breezy, tropical type - but an "urban heat island."

A hot topic recently - as springtime mercury soared to triple digits - the "heat island effect" is a scientifically documented urban-sprawl byproduct.

But the outlook's not all fire and brimstone - there are energy-conserving measures residents and businesses can take to shrink urban living's hot effects.

And a nice side-effect? They save money.

Overnight temperatures are now 10 to 13 degrees higher today than they were 40 years ago, according to the National Weather Service.

But don't just take their word for it, step out for a sunset stroll in the 95-degree evening. Feel your own, hot proof.

According to the Heat Island Group, cities can be 8-degrees hotter than the surrounding countryside. When your "countryside" is a desert, the difference between a 105-degree day and a 113-degree day is palpable.

Greater Phoenix's population grew to almost 1.5 million people in the past 50-some years since it was 13-degrees cooler - back when less than 110,000 people dwelled in the valley. Concrete and asphalt now snake into the desert where cacti and wildlife thrive. Urban sprawl is not without heated consequence.

The main difference between today's Phoenix vs. yesterday's is that the paved urban matrix is larger and more densely packed, so the city releases heat more slowly overnight.

Thousands of miles of concrete sidewalks, acres of black asphalt and hundreds of dark-roofed buildings absorb the sun's daytime rays, and hang on to it overnight.

Add hundreds of thousands of rush-hour cars zipping across town, humming engines spewing heat onto blacktop, and suddenly nine or 10 hours sans sunlight isn't enough to cool things off.

There are many, easy ways for citizens and businesses to combat the heat-island effect - and save money. For example:

* Light-colored and reflective roof coatings deflect hot sun and reduce energy bills.

* Living roofs - like the one at the Ford Rouge Dearborn Truck Plant in Michigan - are better at cooling in summer and insulating in the winter.

* Landscaping to shade buildings using native desert trees like mesquites, willows and acacias, reduce heat gain - and ambient temperatures - while lowering energy costs.

* Drive less: car pool, walk, take the bus or hop on a bike.

* Parking lots and driveways can be built or retro-fitted as packed dirt or light-colored gravel.

" Orient new-construction buildings with the longest sides facing north and south, which minimizes heat gain from exposure to strong eastern and

western rays.

* Support regional conservation planning - typically direct off-shoots of the Endangered Species Act - to curb urban sprawl and preserve open spaces.

* Use an evaporative cooler in lieu of an air-conditioning unit. The less our air-conditioners hum, in homes or cars, the less fossil fuels we burn and the less smog we create - which lessens temperature inversions from trapping hot air over the city.

* Native desert trees cool air under their canopies by up to 10 to 15 degrees. Acting on the same principle as evaporative coolers, they draw water from the ground to their leaves where it evaporates.

Each step we take to combat the heat-island effect may seem as small or simple as a grain of sand - but gathered together in a city of nearly 1.5 million - we'll build a mountain of cool relief.

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