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**Illegals'
U.S.-born
kids raise
dilemma**

States, cities face
tough decisions
on young citizens

By DAVID CRARY
THE ASSOCIATED PRESS

NEW YORK • While Congress and the White House wrangle over federal policy on illegal immigrants, states and cities are wrestling with ways to accommodate their U.S.-born children — most of them American citizens, all with full rights to public education.

The debate is often bitter and unpredictable as politicians argue whether to expand or cut health care for these families, whether to bolster immigrant-oriented school programs, and whether to offer in-state college tuition rates to children of illegal immigrants.

Some politicians and organizations contend that initiatives tailored to assist these children only lure more illegal immigrants to the United States. Others argue that most of these several million children will be lifelong Americans, and are more likely to be productive adults if they receive support now.

"If you've got children already here, let's assume they're a future part of society and are worth the same investment as any other kids," said Randy Capps, lead author of a recent Urban Institute report on young immigrant children.

The report estimated that 22 percent of all American

SEE DILEMMA • PAGE A10

**Teacher
hiring war
intensifies**

Districts boost pay,
perks to compete

By BETH LUCAS
TRIBUNE

Working for the Scottsdale Unified School District was a no-brainer for first-grade teacher Sue Kaminskis. The graduate of Arcadia High School said she just felt at home staying in Scottsdale.

"It really was my home base," she said. "There was both the educational as well as the personal connection."

More than 30 years later, the first-grade teacher is now president of the district's teachers union and finds herself in the middle of an East Valley battle to snag the best and brightest teachers.

Competition to win over teachers is heating up this year as school districts are no longer fighting deficits and expect more money than usual from the state.

That has led to many districts increasing their starting salaries this year to be more competitive with districts

SEE TEACHER • PAGE A2

**COOLING
AN ASPHALT JUNGLE**

ISLAND NIGHTS

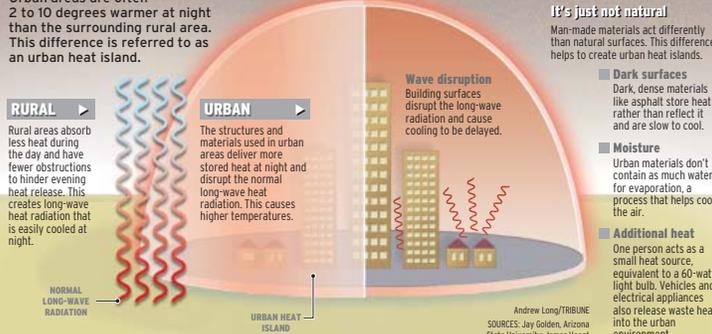
Urban areas are often 2 to 10 degrees warmer at night than the surrounding rural area. This difference is referred to as an urban heat island.

RURAL

Rural areas absorb less heat during the day and have fewer obstructions to hinder evening heat release. This creates long-wave heat radiation that is easily cooled at night.

URBAN

The structures and materials used in urban areas deliver more stored heat at night and disrupt the normal long-wave heat radiation. This causes higher temperatures.



It's just not natural
Man-made materials act differently than natural surfaces. This difference helps to create urban heat islands.

- Dark surfaces**
Dark, dense materials like asphalt store heat rather than reflect it and are slow to cool.
- Moisture**
Urban materials don't contain as much water for evaporation, a process that helps cool the air.
- Additional heat**
One person acts as a small heat source, equivalent to a 60-watt light bulb. Vehicles and electrical appliances also release waste heat into the urban environment.

Andrew Long/Tribune
SOURCES: Jay Golden, Arizona State University; James Voort

**ASU works with utilities
to ease urban heat buildup**

By JOE KULLMAN
TRIBUNE

More buildings, parking lots, streets, highways and driveways marking the march of urban development across the Valley are expanding what climatologists call the "urban heat island effect."

Its impact is not only the discomfort of longer periods of high summer temperatures but potential long-term economic drawbacks and health risks, experts say.

Arizona State University research programs and the Valley's major power utilities are stepping up efforts to find ways of abating the heat-island trend.

It's brought on by all the cement, concrete and asphalt soaking up solar heat during daylight hours and radiating it back at ground levels at night.

The effect has raised average overnight temperatures as much as 10 to 13 degrees over the past four decades in the most intensely developed areas,

according to the National Weather Service.

The Valley's rapid growth has made it a hotbed for microclimates spawned by clusters of hard, heat-absorbing, man-made building materials that hinder nature's cooling processes, said Doug Green, science officer for the weather service's Valley headquarters in Tempe.

It's now often taking hours longer for overnight temperatures to dip back down significantly after those 100-degree-plus summer days.

"Our problem isn't just global warming but local warming," Green said.

SEE COOLING • PAGE A6

SHRINKING THE HEAT ISLAND

The International Institute for Sustainability at Arizona State University is looking at ways to reduce urban heat islands.

Streets

Researchers are looking to mix waste copper mine slag with rubberized asphalt to create a material more reflective than the black rubberized asphalt.

Parking lots

Researchers are looking at placing solar panels over covered parking spaces. The panels would keep the ground cool, produce electricity and reflect unneeded heat.

Urban planning

Researchers hope to convince urban planners that controlling the heat island will drastically help reduce demand for electricity and water.

Freeway

Rubberized asphalt currently being put on freeways is not only quieter but also retains less heat than traditional concrete freeway surface. The porous material releases its stored heat more quickly at night.

Urban forestry

Researchers are looking at ways to more efficiently use urban plants to shade and insulate man-made structures.

Buildings

New materials are being developed to better reflect heat.

Boeing's Apache reunites old pals

E.V. men's lives
brought together
by helicopter

By DARYL JAMES
TRIBUNE

Daniel Livesey of Mesa had to smile when an old friend from Mountain View High School promised to visit him at work.

Livesey, 23, works on Apache Longbow helicopters under tight security conditions at Boeing — and curious friends and relatives cannot just stroll into the Mesa plant and watch.

But the friend who Livesey had not seen in nearly



SHARED MISSION: U.S. Army Chief Warrant Officer Daniel Archer, now in Iraq, flies Apache Longbow helicopters worked on by his friend, Daniel Livesey of Mesa. They were Mountain View High School classmates.

four years kept his word, graduated with Livesey in Chief Warrant Officer Mountain View's class of 2000, appeared at

Livesey's paint shop in October wearing an Army flight suit and gear. The Apache Longbow pilot in the Army's 4th Squadron, 3rd Armored Cavalry, had returned home to pick up a new attack helicopter for his regiment to use in Iraq.

Livesey knew about his friend's enlistment but did not realize how quickly Archer had climbed to his current rank.

"I didn't know he was a full-blown pilot until he came here," Livesey said.

Archer, also 23, relished the surprise in his friend's eyes.

SEE APACHE • PAGE A2

INSIDE



**Now I know my
ABCs, WWWs**

Increasing numbers of children, ages 3, 4 and 5, are going online at nursery school or at home to visit interactive Web sites.
Nation, A7

Downtown A.J.

Apache Junction leaders are looking at taking the first steps toward creating an identity for the city's downtown.
Local, A3

Scarfang down dogs

The winner of a hot dog eating contest Saturday at Arizona Mills mall downed 21 frankfurters in 12 minutes.
Local, A3

Automated aide

With Pentagon help, computer scientists are trying to create an artificial "personal office assistant" smart enough to handle routine tasks for a human boss.
Nation, A7

Bolton controversy

U.N. ambassador nominee John Bolton once engineered the firing of the head of a global arms-control agency, according to officials involved.
Washington, A14

Intel seeks incentives

A tax break Arizona offers Intel to expand in Chandler doesn't guarantee the East Valley will lure the next big plant. It just gives it a seat at the table along with Oregon, New Mexico and foreign sites.
Business, B1

Course in manners

A Philadelphia area college offers a "job search boot camp" with lessons in table manners for a generation raised on grab-and-go meals.
Business, B1

D-Backs doubled up

Arizona loses its season-high fourth straight as it drops both games of a doubleheader to the Phillies.
Sports, C1

ARTS & LIFE D1
AT HOME H1
CLASSIFIED E1
HOROSCOPE D9
LOCAL A3
MOVIES D8
NATION/WORLD A7
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PUZZLE E9
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High 97,
Low 73
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Roseann Sweet recalls when she moved to Phoenix almost 20 years ago, "I was amazed at how hot it was all night long in the summer." She later relocated to rural Queen Creek. On some summer nights, the heat still subsides enough to comfortably wear a sweater, she said.

COOLING: Growth without the heat

FROM PAGE A1

LOSS OF COMFORT

One result: The amount of daily time that temperatures exceed a normal comfort level has grown from about two hours to almost five hours since the Valley began urbanizing in the 1950s, said Anthony Brazel, an ASU geography professor who has studied local climate change.

Today, about 30 percent to 40 percent of the Valley's urban cores and the growing suburban areas around them are covered in pavement, said environmental engineer Jay Golden.

But he and colleagues at ASU's International Institute for Sustainability, which opened its doors a few months ago, are not taking an anti-development approach to seeking solutions, said Golden, who directs the group's Sustainable Materials and Renewable Technologies Program.

The focus is on how regions can continue to urbanize without intensifying heat islands.

So researchers are working on alternatives to conventional concrete, cement and asphalt. New materials, such as resins and rubberized composites, won't absorb and radiate as much solar heat, Golden said.

In addition, they're looking at ways that architectural design and landscaping, or "urban forestry," can more effectively prevent heat buildup and provide cooling effects, he said.

Arizona Public Service Co. is collaborating with ASU's programs. The utility company plans to promote new energy-efficient materials to

developers, said Tom Hines, an APS customer and information programs manager.

The Salt River Project utility company also supports ASU's studies, said spokesman Jeff Lane.

ESCAPING THE HEAT

The urban heat island effect has long been evident to Grace Schoonover, who lived in central Phoenix from the 1930s through the 1950s.

"When I grew up there, Phoenix was bearable all summer," she said. "We noticed a rise in temperatures as they started paving everywhere."

Schoonover now lives in rural Cave Creek. "We fight against paving here as much as we can," she said.

Fellow Cave Creek resident Bob Moore said a major reason he and his wife moved from Phoenix several years ago was the climate difference.

It's often 10 degrees cooler in Cave Creek than in the central Phoenix area, plus "there's an almost constant breeze. . . . You walk outside at night and it's cool, even during a lot of the summer," Moore said.

Roseann Sweet recalls that when she moved to Phoenix almost 20 years ago, "I was amazed at how hot it was all night long in the summer."

She later relocated to Tempe, then to rural Queen Creek, where she and her husband, Kevin, now live on a 4-acre horse property. On some summer nights, the heat still subsides enough to comfortably wear a sweater, she said.

On the 27-mile drive home from their business near Loop 101 in Tempe, "I really feel a big difference, the temperature just gets cooler the

farther away you get," she said.

BIGGER HEAT WAVES

That could begin to change if nothing is done to ensure new development isn't significantly increasing the heat island effect, said Tony Haffer, chief meteorologist for the National Weather Service's Valley headquarters.

"It's a regional effect. . . . Our atmosphere is very fluid, so heat islands tend to shift to some degree, and they can blend into each other," Haffer said.

If localized heat islands combine extensively and consistently, waves of heat emanating from urban and suburban cores would grow strong enough to begin changing temperatures even in outlying Valley areas, he said.

"Overall, things could add up to (the Valley) being one big urban heat island. It would just be more intense in certain spots and weaker in others," he said.

More is at stake than the comfort factor.

Heat islands are extending the peak demand times for energy use. It's taking more energy to service the typical Valley home than in past decades, and air conditioners are running longer, APS officials said.

That's putting more strain on power resources, raising power bills and boosting the potential for heat-related illnesses, such as heatstroke, Golden said.

There's another big potential economic downside. If heat islands continue to grow, the normal span during which the Valley could experience

periods of high heat might expand from summertime to late spring and early autumn, Golden said.

"Our hot season might go beyond June, July and August to April through October. We depend on tourism. If people are seeing that it's 100 degrees here in October, then it doesn't look like a good place to go," he said.

ENERGY-EFFICIENCY MODE

The research into easing the heat island effect is being cheered by Bill Mundell, a Chandler attorney and member of the Arizona Corporation Commission, which regulates the state's utilities.

There's a direct link between the heat island problem and broader energy conservation and quality-of-life issues, said Mundell, an ex-state legislator who formerly headed the House environment committee.

Power plants must be built to handle peak demand periods. So when heat islands push peak demand higher for longer stretches of time, it hastens the need for new or expanded power plants, Mundell said.

That means burning more fossil fuels in generating plants and the additional air pollution produced by the process, he said.

Utilities share Mundell's

concern, said APS' Hines. "APS is in an energy-efficiency mode . . . summer peak demand time is a problem," he said.

The company is significantly increasing funding for programs to educate consumers and businesses about energy conservation, Hines said.

That includes informing developers about the types of environment-friendly building materials ASU's Sustainability Institute is working on to combat the urban heat island effect. "We think we can bring some market credibility to those products," Hines said.

Giving government policymakers and the development industry good reasons for changing old and environmentally unsound habits is the challenge facing ASU's program, Golden said.

Beyond making technological advances, researchers have to establish a strong case for the long-range economic viability of building to diminish heat island effects, conserve energy and protect the natural environment.

"It's hard to do when you have companies with boards of directors pressuring developers to show quick profits," Golden said.

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West Nile found in Yuma County

THE ASSOCIATED PRESS

YUMA • Mosquitoes collected from five areas along the Gila River tested positive for West Nile virus, according to the Yuma County Pest Abatement District.

For the past few months, crews have been spraying pesticide and deploying larvicide throughout the county in areas where mosquitoes breed, said Brian O'Green, environmental health manager for the Yuma County Health Department.

"We can spray every day, seven days a week, 365 days a year and we're still not going to be able to kill all the mosquitoes. . . . The key word is control," O'Green said.

Crews will begin setting traps inside the city limits, O'Green said.

About 80 percent of those infected with the virus show no symptoms while 20 percent could develop symptoms such as fever, nausea, headache and muscle aches.

In rare cases, West Nile progresses to life-threatening encephalitis or meningitis.

Fourteen people died from West Nile in Arizona last year and scores of others were infected and became ill.

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Fact: Indoor air is found to be 70 times more polluted than outdoor air. (EPA)




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