

CONCRETE METROPOLIS

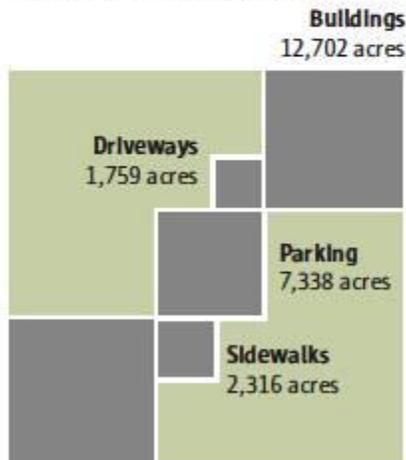
By Bruce Finley **The Denver Post**

Denver a hard shell

Rapid densification rendered 38.24 percent of Denver “impervious” by 2016 — 37,813 acres out of 98,886 acres in a Denver Regional Council of Governments analysis — blocking the natural process of water filtering into the ground. Here are some of the main ways the cityscape has been transformed.

DENVER'S SURFACE COVERAGE

- Impervious surfaces
- Natural terrain (61,073 acres)



Roads
13,700 acres

Source: DRCOG

Note: Impervious acres don't add up to 37,813 due to rounding

Jeff Neumann, *The Denver Post*



Tent-hunting at REI, Jackie Von Feldt and her friends lamented that they choke inside booming Denver and were preparing an escape. They wanted peace, and calming views, with room to roam and starlit night coolness they could savor in silence. So they pored over an array of ultra-light shelters for a trip into Colorado’s mountain wilderness that, hopefully, wouldn’t entail too much traffic.

“You definitely have to leave the city. I wish it wasn’t like that,” said Von Feldt, who grew up in Wichita, where a carefully platted park gave residents a natural oasis.

“It just feels hectic being in the city,” she said. “You cannot get that detachment from the chaos.”

Von Feldt is caught in a green-space crunch that is hurting Americans as cities grow denser, more paved over and more crowded. Denver epitomizes this diminishment of nature in the city, a trend worldwide with 55 percent of humanity living in urban areas and a projected 2.5 billion more people on the way by 2050.

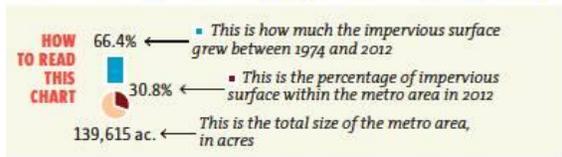
Large areas of Denver overhauled to sustain an exploding population now are so built up and paved over that residents rapidly are losing contact with nature. Excluding the undeveloped area around the airport, nearly half the land in Denver’s city limits is now paved or built over — up from less than 20 percent in the mid-1970s, a Denver Post analysis of city and federal data found.

And that figure could approach 70 percent by 2040.

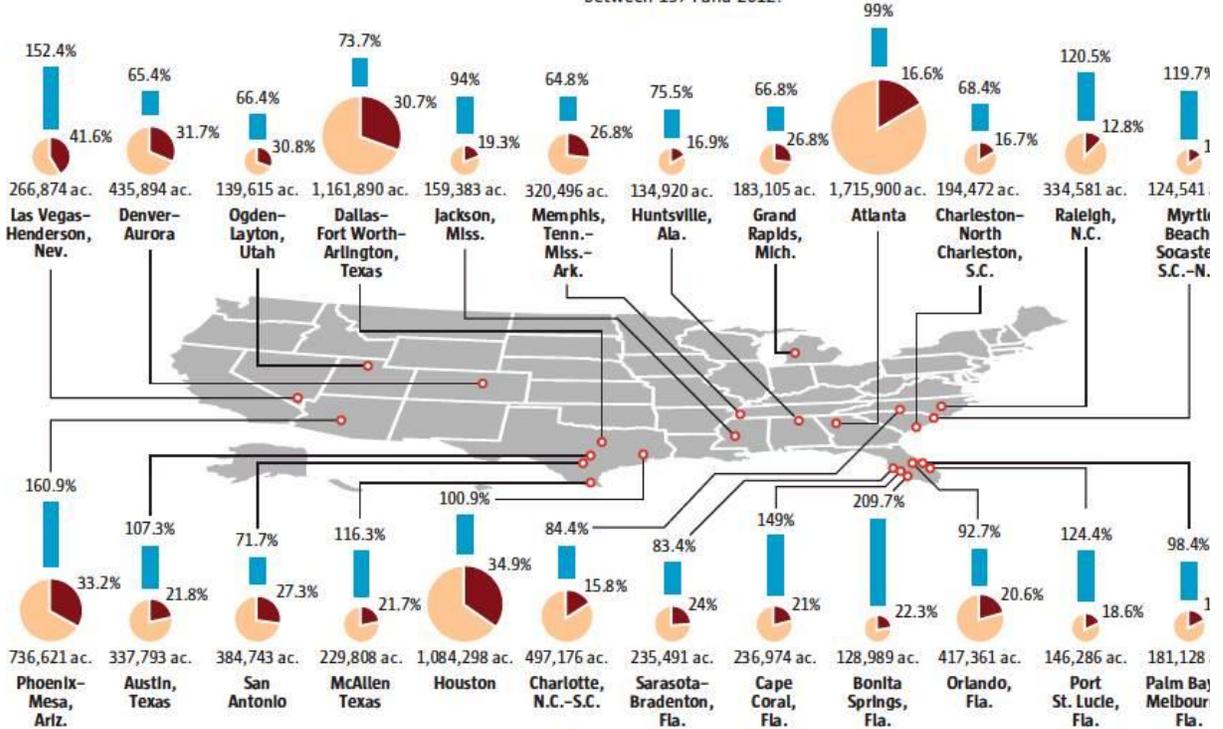
Denver’s elected leaders and developers over the past 20 years drove this shift toward high-rise towers, yard-devouring duplexes and shopping plazas — and away from Denver’s “city within a park” heritage that a century ago incorporated natural preserves of 100-plus acres.

They replaced Denver’s original pattern of settlement amid green space with an increasingly dense format that has enabled population growth by 41 percent, from 498,402 residents in 1998 to 704,621 in 2018. This heavily built cityscape is replicating, a recent aerial survey revealed,

U.S. cities increasingly cover natural green space

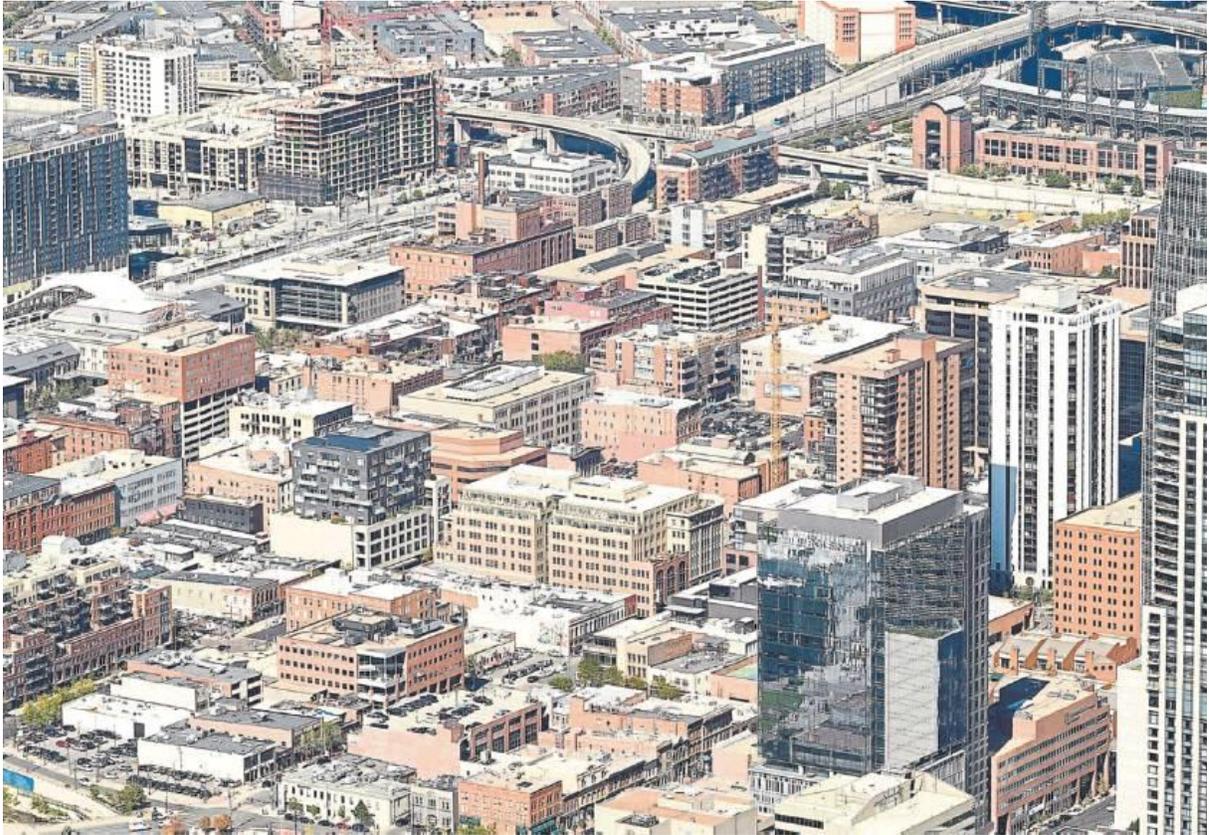


Federal data from 1974 and 2012 show a national shift in the major metro area toward “imperviousness” — replacing green space with concrete, pavement or other material as developers install buildings, roads, parking lots, commercial plazas and paths. This shift has implications for flooding and heat amid climate change and affects the growing number of people, whose ancestors evolved in contact with nature. This chart maps the 24 metro areas of at least 123,553 ac (500 square kilometers) with the greatest increase in impervious surface between 1974 and 2012.



Source: USGS

Jeff Neumann, The Denver



like the circuitry inside computers.

This denser development covers more and more of Denver’s 155-square-mile area, including the River North, Uptown, Cherry Creek and Highlands neighborhoods, and the 44th Avenue and South Broadway corridors. It’s intensifying as City Council members approve future high-density projects across the South Platte River floodplain encompassing the Elitch Gardens Theme & Water Park, Colfax Avenue, Loretto Heights and the already jammed Colorado Boulevard from Interstate 25 north past the old University Hospital campus and Park Hill Golf Course to Interstate 70.

The question is whether “livability” will improve, especially for children and the majority of workers who cannot afford frequent escapes.

The Denver Post’s analysis found:

- Green space in Denver is disappearing faster than in most other cities, with paved-over cover increasing from 19 percent of the city in 1974 to 48 percent in 2018 (not including Denver International Airport), federal and city data show. Up to 69 percent of the city is expected to be paved or covered by 2040. Only New York and a few mega-cities exceed that level of what planners call “imperviousness.”

- Denver ranks nearly last among major U.S. cities, including New York, in park space as a percentage of total area. It also ranks nearly last in park acres per resident.
- City leaders are overriding residents' desire for increased green space as they sign off on more high-density development.
- The dwindling of nature in Denver could lead to potentially overwhelming increases in storm-water runoff, and is causing worsening heat-wave impacts and likely hurting residents' physical and mental health.

The situation has reached a point that clashes with the “green” images Denver economic development officials project to promote growth, tourism and the outdoor recreation industry.

“There’s a ton at stake. This is something to be concerned about — not just for some big net loss of biodiversity, but for what it means for people to interact with nature on a regular basis,” said Liba Goldstein, a Colorado State University conservation biologist who has helped guide efforts to nurture nature north of Denver in Fort Collins.

“We benefit from regular interaction with nature. It is good for human health. ... We all know we have big obesity and mental health problems on the rise in cities. As people are more and more connected to computers, technology, and less and less connected to nature, it is harder to generate interest and enthusiasm and curiosity in young people,” Goldstein said.

“This all has major impacts on our own health and well-being. We are going to be less happy and less healthy. We will be leading shorter, less happy lives. And we will miss out on what is spectacular, unique and interesting about the natural world.”

Denver’s transformation has been happening gradually, and The Post — analyzing city and federal data, interviewing officials and developers, talking with residents — tried to determine the cumulative impacts.

A city increasingly “impervious”

The pace of Denver’s shift from natural to an increasingly built urban environment — roofs, roads, parking lots, park trails, other ground coverings — may be accelerating. In 1974, 19 percent of Denver was built over, according to federal U.S. Geological Survey data. In 2012, about 32 percent of that area was covered (roughly the same as the broader Denver-Aurora area tracked by USGS), the city and federal data show.

Denver officials now estimate the paved-over portion has increased to nearly 40 percent. And it’s 48 percent if the largely undeveloped 52-square-mile property around Denver International Airport isn’t included, said Brian Muller, a University of Colorado urban design professor and director of the school’s Community Engagement and Design Center. Using high-resolution imagery to assess Denver’s changing landscape, Muller has projected 66 percent imperviousness by 2040, and up to 69 percent if DIA is excluded, assuming likely expansions of transit and roadways.

“You’re looking at 95 percent imperviousness now in the newly developed parts of Denver — a very high rate,” Muller said in an interview.

“Other cities are going this way, towards very compact development without much open space,” he said. But Denver’s shift is extreme. “We’re not retaining much of our natural landscape. There are multiple processes going on that are generating imperviousness: the large buildings, some on residential lots, and when we build impervious trails in parks.

“You’re looking at substantial increases, more or less in line with the population growth. ... Denver should be very careful in how it manages green space.”

Covering natural terrain with concrete and asphalt increases the volume and velocity of storm-water runoff. Denver officials in 2014 estimated it would cost \$1.47 billion to upgrade the city’s storm drainage infrastructure to handle the surges so that flooding on streets would stay under one foot deep. Water contamination also worsens as road grit, petroleum and chemicals whoosh off hard surfaces into the South Platte watershed. Denver officials recently began an effort to try to turn back the clock and restore natural processes, a limited effort to re-engineer waterways that could slow flows and harness the H₂O.

Other U.S. cities, such as hurricane-plagued Houston, also are struggling with increased storm-water deluges set off by overdeveloping urban terrain.

Less room to roam

Denver’s 155-square-mile area includes 6,238 acres of parks and open space (the city counts 831 acres of golf courses, 137 acres of road medians and 204 acres for future parks), which is 6.2 percent of the total area, an inventory provided to The Post shows. That ranks the lowest among major U.S. cities, according to Trust for Public Land rankings, which used an 8.2 percent figure for Denver. The city also owns about 14,000 acres of noncontiguous park property in the mountains.

By comparison, New York City has designated 21 percent of its area as parks; Washington, D.C., 22 percent; San Diego, 23 percent; and Los Angeles, 13 percent; Trust for Public Land data show. Commonly used comparable “peer cities” also beat Denver, with Minneapolis devoting 15 percent of its area to parks; Portland, Ore., 18 percent; Boston, 17 percent; Seattle, 12 percent; and Chicago, 10 percent.

The rapid population growth in Denver — the city has added nearly 10,000 new residents a year since 2010 — intensifies the impact.

Park space per person in Denver has fallen to 8.9 acres per 1,000 residents, down from 9.4 acres per 1,000 residents in 2006 and 9.5 acres per 1,000 residents two decades ago — far below the national average of 13.1 acres per 1,000 residents, city data show. (By comparison, Portland offers 23 acres per 1,000 residents.) Denver officials project the acreage will decrease further to 7.3 acres per 1,000 residents as Denver’s population tops 857,000 before 2040.

It would take at least 1,500 acres of new green space to stop the decline and hold steady at about 9 acres per 1,000 residents, and 3,000 new acres of parks to approach the national norm of 13.1 acres per 1,000 residents, city planners said. Denver parks planners recently identified 625 city owned acres that could become future green space.

Yet Denver stands out as one of the only major cities in the U.S. that has not drawn on public funds to expand public green space — until voters in November approved a ballot initiative establishing a sales tax that will raise \$45 million a year to go toward parks.

In addition, Denver's rules for developers rank among the most permissive when it comes to installing buildings without a requirement to offset impact by establishing new public green space. Only "master-planned" development on parcels larger than 10 acres — relatively rare — must leave 10 percent of the total area open, according to city community development officials. That open space, under Denver's current rules, can include paved-over courtyards or plazas. For example, city officials recently told high-rise developers they could include construction of recreation center buildings as part of their required parks and open space.

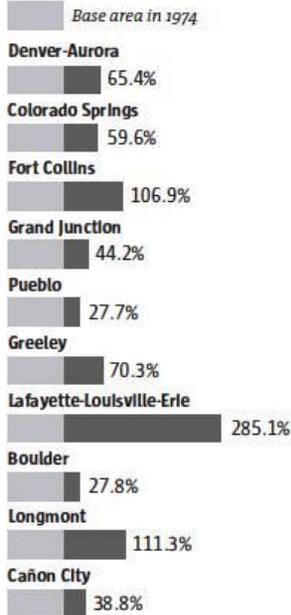
Higher and hotter

One result of all this is that Denver's denser urbanization exacerbates climate-driven heat waves.

Colorado's Increasingly Impenetrable cities

In Colorado's 10 largest metro areas (by acres), impervious surfaces, such as roads, buildings and parking lots, increased by an average of 83.7 percent from 1974 to 2012.

PERCENT CHANGE OF IMPERVIOUS AREA by metro area, 1974-2012

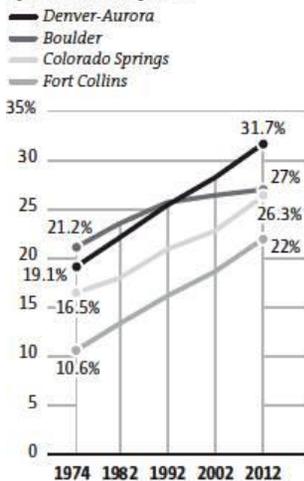


Source: USGS
Jeff Neumann, *The Denver Post*

Natural terrain vanishing In Colorado's major cities as population grows

From 1974-2012, Colorado cities have greatly increased the amount of land impervious to water.

IMPERVIOUS AREA by metro area, in percent



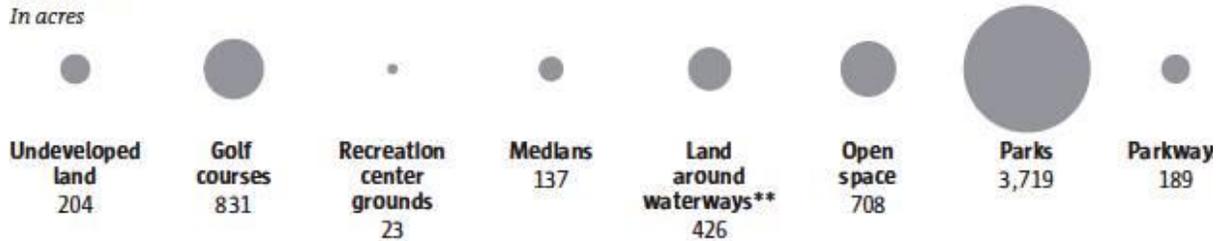
Source: USGS
Jeff Neumann, *The Denver Post*

Denver's new cityscape: Nearly twice as much parking space as park

The 6,238* acres of green space that Denver officials have counted inside the city seems increasingly small compared with six times as much built-over space (37,815 acres), including expanded roads, walkways, building and 7,338 acres of paved parking lots.

GREEN SPACE

In acres



*Figures do not add up to total due to rounding **Natural Resources Management Zones Source: DPR Jeff Neumann, The Denver Post



CU urban design researchers determined that Denver's temperatures have increased by at least 3 degrees over the past two decades — above the increase from global warming. When more surfaces are paved or covered over, temperatures spike because concrete and asphalt absorb sunlight and then release it, the urban equivalent of a hot pack.

Since 2012, Denver has experienced more than 50 days a year with temperatures topping 90 degrees. A 2014 Climate Central analysis of National Weather Service data found that Denver has one of the nation's most severe "heat island" effects, with a 4.9-degree increase compared with the surrounding, and mostly treeless, high prairie.

The spiking heat dissipates in leafy central neighborhoods, said professor Austin Troy, chairman of CU Denver's department of urban and regional planning. Hardest hit are the mostly paved downtown areas, RiNo and newly overhauled areas along the concrete I-25 and I-70 corridors, Troy said. Trees can help ease the heat. But Denver lags in trees and shrubs, with a 9.6 percent cover in 2009, compared, for example, with a 53 percent cover in Atlanta, a 2012 urban forestry study found.

Finally, a shift toward taller buildings adds to perceptions of being trapped by blocking views of the mountains, prairie and sky. Denver had six buildings higher than 13 stories in 1950, city records show. Today there are 151. Developers have filed a master plan with the city to build several skyscrapers taller than 40 stories, as high as 59 stories, south of downtown along the South Platte.

Rising discomfort

Denver officials are approving denser development even though residents object.

Since 2003, city surveys have documented that residents favor more green space.

Two years ago, intensifying discomfort led to complaints about "a new concrete jungle," reflected in news stories, with residents lamenting that development decisions were foisted on them without opportunities to prioritize noncommercial values of beauty, peace and functioning natural ecosystems.

Historically, Denver residents demanded green space along with development. An 1894 plan for "the parks and boulevards system" of Denver began a tradition of deliberately interspersing settlement with green space, driven by civic leaders who aimed to improve human health as the nation industrialized.

Mayor Robert Speer was inspired by the Chicago World's Fair in 1893 that celebrated a classical balance achieved by preserving nature inside cities, according to Denver historian Tom Noel at CU Denver, whose 1985 book on the City Beautiful movement explored Denver's aspirations of being a city within a park.

Speer faced public demands for greater livability. He set out to double park acreage, establishing the Civic Center and other large green spaces. He gave away 10,000 elm trees to residents who promised to plant them around their homes.

But density and "compact cities" have emerged as modern priorities. This push toward a denser high-rise format in Denver "is a fairly new trend" driven by developers trying to capitalize on an influx of younger millennial residents, Noel said.

“A lot of people fight it, a lot of old-timer geezers like me,” Noel said. “A lot of the population is not in agreement.”

Some environmentalists have looked favorably on “infill” development as a way to contain urban sprawl — though suburbs around Denver still are devouring more semi-arid high plains prairie despite water scarcity. A compact configuration also enables energy and transportation efficiency. (Cities cover roughly 3 percent of the Earth, and people in them consume 70 percent of the energy and emit 75 percent of the carbon dioxide.)

“Denser cities are good, if they’re done right,” said Chris Hawkins, the Nature Conservancy’s Denver-based urban conservation program director.

“But as cities continue to become denser, we think it is important for them to continue to keep people and nature at the fore of many decisions,” Hawkins said. “We believe many cities find a way to balance denser, more vertical, transit-oriented sustainable development with the creation of new parks and open space. We think Denver can do the same and are working to support those goals.”

Parks of the future

Developers in Denver acknowledged a shift toward greater density and less green space. A balance is possible — if cities prioritize creating more green space, said Mike Zoellner, president of the real estate company ZF Capital and vice chairman of the Urban Land Institute Colorado, which encourages smart urban design.

“From a land-use point of view, we see open space as a critical component. Cities have been falling behind in paying for and getting open space,” Zoellner said.

Greenways and parks “make for better communities. The value for real estate around parks is better,” he said. “The recent sales tax increase to fund parks is the community saying, ‘We want the city to buy more parks and build more parks.’ That’s a positive thing and the development community is very supportive of that.”

Directors of the Colorado Association of Home Builders and Home Builders Association of Metro Denver declined to discuss green space. The metro Denver association’s chief executive-elect, Chérie Talbert, who also runs a developers’ political committee, said in an email that members work with local governments “to ensure the new communities we build agree with the character of the area, including the right density.”

However, “attainably priced housing is a goal of both builders and city leaders,” Talbert said. “As the cost of both land and labor continue to rise, building at greater densities helps us address that goal.”

But if Denver fails to add significant new green space, “you will become more and more of a concrete metropolis, much more like the bigger mega-cities of Southern California and the Bay

Area. You could get to that point,” said Charlie McCabe, director of the Trust for Public Land’s Center for City Park Excellence, which advocates for nature in cities.

“This is not just about nature and parks. It is about your quality of life,” McCabe said. “You would be losing some of your quality of life.”

Blaming population growth, lack of funds

Denver leaders say soaring land prices and population growth limit their options to preserve nature beyond limited landscaping. Parks department officials said they lack funds to establish green space, even though general fund revenues have increased rapidly as a result of the development boom.

Public discomfort and green-space complaints “are very common themes and concerns that arise in a city that is growing, particularly as exponentially as we have grown,” Mayor Michael Hancock said in an interview after his latest State of the City speech, in which he invoked former leaders’ City Beautiful vision of creating a city within a park.

“And because we are growing, and because we don’t have enough houses to accommodate all the people who want to live in the city, densification is going to have to be one of the things that we are going to have to do, particularly around our transit-oriented development sites,” Hancock said. “But we must do it in a way that people don’t feel like they are in a jungle. That means we gotta communicate, work with and value neighborhoods, and really have conversations with people who live there today.”

No new park covering 50 acres or more, let alone the parks of the past of 100-plus acres, has been established in Denver for more than a decade.

Parks crews focus on maintaining and improving existing parks, installing playground equipment and landscaping, which in some cases entails paving over natural terrain.

Meanwhile, City Council members have approved developers’ proposals for new high-density development along the South Platte at the Elitch’s amusement park, Loretto Heights campus, RiNo, the former CU hospital, Park Hill Golf Course and the Gates Rubber factory. They have allowed developers to build higher and smaller units in return for agreements to offer housing at prices Denver workers might afford.

The city’s latest “Game Plan” documented a shortage of green space. City planners are wrestling with the implications.

“We’re way down because so many people have moved to the city,” said Deputy Parks and Recreation Director Scott Gilmore, a longtime champion of exposing children to nature. “And we’re going to keep dropping because so many people want to come to Denver.”

But establishing significant new green space in Denver? “I don’t think it is feasible, to be honest,” he said. “We would have to spend a lot of money. And do you want to take peoples’

homes just to build parks? I mean, where are we going to get land? It is an infill city. We don't have a ton of land."

The nascent effort to address stormwater flooding by creating naturalistic green corridors could add a couple hundred acres of green space around the city — though public access would be limited.

"Certainly, as lots are developed, and redeveloped at higher density, just the roofs cover more space than they used to, in addition to the skyscrapers around them and the paved areas to provide access to them," said Mark Tabor, Denver's chief parks planner and architect of the game plan.

"Yeah, there's less space for landscaping. There's less space, unfortunately, and really critically, for street trees and trees on private property — what we are trying to promote in our game plan," Tabor said. "We need to take a strong look at how we can provide for new development, but, at the same time, not lose the benefits of land that has been built over or built up."

The great escape

For residents, the green-space crunch compels frequent escapes in vehicles. It favors those with the economic power to reach nature. Yet those who flock out for recreation in the mountains increasingly face crowds, trampled terrain and impaired natural processes. The annual visitation at Rocky Mountain National Park, 90 minutes northwest of Denver, has increased by 60 percent since 2008. Boulder officials say they see more Denver residents heading onto their foothills trails.

It was the promise of parks and open space that enticed Elaine Conoly, 28, to move from Texas for graduate studies in accounting at CU Denver. Conoly said she checked a visitors bureau website and got the impression that Denver was green with more parks than other cities, along with at least 300 days a year of blue skies and sunshine.

For the past five years, she's been renting a third-floor condo north of downtown in RiNo, paying \$1,400 a month and lamenting that there's no significant green space nearby.

"I would have to drive. Like, Washington Park would be the closest," Conoly said on a sidewalk near 32nd and Blake streets.

"What I would desire would be, like, four times a week I'd take a jog around a park, a walk around a park, or a bike ride around a park." Instead, she makes it to a park about twice a month. This compels escapes to the mountains.

"And that is a hassle when everyone is going," she said, recalling a three-hour drive with her snowboard to the mountainside slopes at Keystone Resort.

"You are going to sit in the traffic."

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The Densification of Denver Part two of a three-part series [1-14-19]



“We need more open spaces,” residents say



By Bruce Finley
The Denver Post

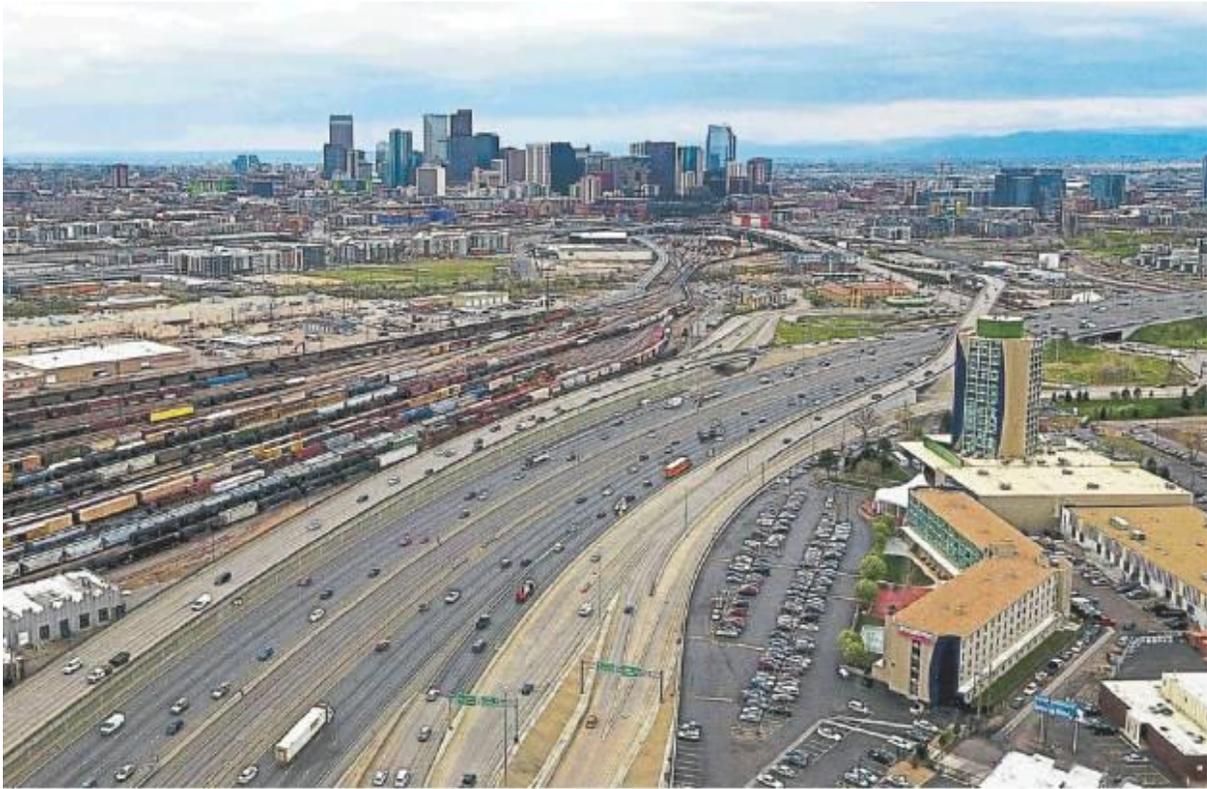
Denver’s intensifying green-space crunch is hurting residents, creating stay-or-go quandaries and raising environmental-justice concerns as people search for nature near where they live.

Parents, in particular, say they struggle to raise healthy children as natural space increasingly is built over or paved.

“If they just stay inside, they grow up to be fat people on phones, all the technology things,” said Gabriela Azevedo, 27, a mother of two boys in north Denver.

One of her children, Sabian, 7, has asthma so severe that Azevedo and her husband recently





moved him to a different school — away from Denver’s Interstate 70 redevelopment construction near their home, an area where asthma and blood lead levels are elevated. There’s a small park nearby.

“But when the air is really bad, we just stay inside,” Azevedo said.

A couple times a month, this family rolls across Denver and joins growing crowds at a bigger, cleaner park with open green space, large trees, a pond, playgrounds and birds. “The one near the zoo,” she said.

When possible, they escape to the mountains. Azevedo’s message to city leaders and developers: “Build more parks, think about parks more often, be more green. Because of our kids.”

Lack of sufficient green space has become a common complaint among residents such as Azevedo, as Denver morphs into a concrete metropolis. Rapid population growth and a development boom have combined to reduce green space per person. Ample backyards increasingly are relics as residents shift to condos, slot homes and high-rise buildings. More of Denver’s 155-square-mile area is paved or covered over each year, part of a national trend that has worsened heat waves and can cause havoc with stormwater runoff.

In parts of Denver, green space has decreased to fewer than 5 acres per 1,000 residents — less than half the national norm.

“It is different from rich areas to, like, this area — low-income people. It’s just different,” Jose Sotelo, 51, said on a recent afternoon after he escorted his kids to the newly refurbished Westwood Park, which features exercise equipment and a playground around open grass.

Green space in other parts of Denver seems “nicer, greener. I can see flowers. It is a little unfair. We pay taxes, too. Why?” he said.

“Fresh air’s the No. 1 thing”

A food warehouse worker and father of two in west Denver, Sotelo said he’s been struggling to find nature. The kids — Levi, 9, and Iraci, 10 — recently had to say goodbye to their 72-year-old grandfather, who retired to a Mexican village because it offered peace with fresher air, birds and starry night skies. Now Sotelo was looking for outdoor alternatives to computer screens after school.

“Nature here? We don’t have it. Not enough in Denver. Maybe in the suburbs they have it,” Sotelo said. “We need more open spaces, more natural spaces.”

At the end of summer, Sotelo realized Levi’s waist was as big as his own and that he seemed practically addicted to video games and television. So as part of a family initiative, they were aiming to go to a park every day after school, away from “suffocating” technology. If not for this park, “they’d be inside on the tablets.” He watched as Iraci played on swings and Levi lay on the grass by a flat blue soccer ball.

“The outdoors is to have fun,” Levi said. Sotelo nodded, adding, “Fresh air’s the No. 1 thing.” He kicked that ball with his son.

A growing body of scientific research points to a human health need for green space in cities. The research from psychologists and urban planners has found green space is essential to making cities livable.

People are healthier and happier when they have access to nature, researchers contend, correlating proximity to vegetation with lower stress, anger, aggression, diabetes, stroke and cardiovascular disease. They have found that people exposed to green space tend to be more active physically, healthier mentally and more connected to other people. Children appear to suffer less from blood-pressure problems and asthma.

Denver’s green-space crunch, reducing contact with nature for residents unless they can afford escapes to the mountains, has mobilized voters.

In 2017, they passed a ballot initiative ordering city officials to install green roofs on buildings (to absorb more of the heat-trapping greenhouse gas carbon dioxide and to produce more clean

oxygen). Last fall, voters approved a sales-tax hike to raise \$45 million a year to improve and expand green space.

“The younger population is more and more interested in keeping the world green and paving less. They are concerned about carbon emissions, social equity and resilience,” said Mark Johnson, president of the Denver-based urban design firm Civitas, which has helped establish green space here and in other cities worldwide.

“Our marketplace and our culture is insisting on more environmental benefits,” Johnson said.

“Living in a concrete box”

It’s gotten to the point where well-to-do people pay for nature therapy.

“A lot of people come to see me saying nature is kind of their church, the place they go to heal and feel better,” said psychologist Aleya Littleton, one of several “nature-based therapists” in the city.

Typical clients seek one-hour-a-week sessions talking outdoors “because they know it is so good for them,” she said, though many struggle to fit sessions into their schedules.

“There’s definitely an increase in stress and discomfort. The urban environment has a way of distracting attention that is violent and aggressive,” she said, compared with “subtle inputs of nature that we are biologically predisposed to receive. ... We’re becoming more connected to our technology. It is a contrived experience. We are not more connected to each other.”

Around Denver, residents young and old increasingly migrate in vehicles to find natural space. During heat waves last summer, mothers stuck inside the city flocked to parks with water fountains, helping their children stay cool and active.

“Really important,” said Brittany Aynei, 32, who walked nearly 2 miles from her home west of downtown to the Union Station area where, though the plaza is paved, the fountain was not as crowded as usual, because the bigger kids were back in school. Her 2-year-old son splashed jovially while his 6-year-old sister waded around.

“I prefer to have my kids outside every day, just to be active. We don’t do TV,” Aynei said.

More green space is “necessary for a growing city,” she said. “I’m OK with building up vertically. Better than building new houses everywhere. But we could have more open space.”

It seems to bring relief.

“It is pretty important to have at least some sort of escape in the city. It gets alienating if you don’t have nature or greenery anywhere,” said Michael Perkins, 29, a University of Colorado Denver engineering graduate student and cafe barista walking through Lower Downtown.

Perkins grew up along the Front Range and said he's noticed the increasing density of Denver as developers install high-priced modern apartments and condos.

"Feeling like you are living in a concrete box is going to change your psychology. You start to forget what it is to be human and to be a part of the Earth," he said, noting the apartment he shares is close to a park.

"I would definitely favor more open space. And I would favor integration of nature into urban spaces — for solving the problems of urbanization."

While the scattered "pocket parks" that Mayor Michael Hancock celebrates draw heavy use, residents living near them indicate they'd prefer something bigger.

A new public-access pocket-park courtyard that city officials painstakingly negotiated with a developer as part of a contested high-density development in Park Hill "is sort of pathetic. Everybody can see through it. Developers have a very clear profit motive, and this is a city that gives whatever it can to developers," said Caleb Hannan, 35, sitting with his toddler daughter on a bench in a pocket park at Dexter Street and 23rd Avenue.

"Not the greatest green space, but it is 15 minutes away," Hannan noted.

"We need green"

Farther away, Denver offers 14,000 acres of mountain foothills parks. While residents recognize that option, many say they need more of a tolerable environment right where they live and work.

"We need green. We gotta have something that puts oxygen back in our air," said retiree Dennis Chambers, 63, who was fixing a fence at his Park Hill home. "But the mayor doesn't want it. He's going to go where the money is."

Now that his children are grown, Chambers and his wife often drive to Chatfield Reservoir southwest of Denver and to Bluff Lake.

Workers often cannot escape.

"I feel more heat," RiNo food market employee Sulema Palacios, 23, said while emptying trash into a Dumpster on an asphalt parking lot during Denver's eighth consecutive 90-degree day in September.

At the very least, city planners should plant more trees, she said. "We need more big trees in the streets. For air."

Denver Parks and Recreation officials pointed to privately installed open space that developers include as part of projects spanning more than 10 acres.

Yet one of those areas, near the Denver Indian Center off Alameda Boulevard and Morrison Road, contains AstroTurf instead of grass. It served well for the soccer-playing grandchildren of Lorenzo Clark, 54, who sat on a bench watching them. “But they should build a bigger park.”

In an ideal world, those kids would spend time in nature, Clark said. “It is better for them to grow up in open country. They can get off their computers. Get out and explore. Get on a horse. Build a fire. Have a cookout.”

One result of the green-space crunch may be that Denver residents increasingly envision their best life elsewhere, treating the city like a way station.

Between rows of shiny box-shaped apartments installed atop the former Gates Rubber factory along South Broadway, neo-natal intensive care nurse Alexa Horn, 27, said there was no significant green space nearby and that rent of \$1,500 a month felt steep even on her steady wages.

Her tight apartment was sufficient for now, she said. “I mean, I lived in a college dorm” at the University of Wisconsin.

“Parks are important. I like the outdoors. A place to escape the city feel,” she said, noting that she grew up near a lake in Minnesota.

“I won’t be living here all my life. I want a house with at least a small yard. This is temporary,” she said. “I wouldn’t want to live here forever.”

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The Densification of Denver Final part of a three-part series [1-15-19]



Push for more green space unearths inequities

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By Bruce Finley
The Denver Post

Denver planners have been gathering with residents to design the city's first new big green space in more than a decade — 80 acres of park and natural land around Heron Pond near the South Platte River, including a pollinator garden, artwork and nods to working-class history.

But this is industrial wasteland. The 2-foot-deep pond holds toxic sludge laced with lead, arsenic and cadmium. Contaminated stormwater runoff from surrounding work yards worsens the brew.

And even though low-income north Denver residents say they are practically starved for nature in the city, a festering sense of injustice rankles the deal.

“We are left with the dregs,” longtime resident John Zapien said at a recent community meeting, urging city officials to prioritize health.

“We need to clean up Heron Pond. No ifs, ands or buts,” Zapien told officials in the room.

Denver's willingness to embrace such a site for future parkland reflects the increasingly difficult challenge of establishing enough public green space to keep pace with population growth and development. Denver has fallen behind other U.S. cities in urban parks and open space. This is causing discomfort, hurting public health, exacerbating heat waves and risking costly problems with stormwater runoff.

City officials interviewed by The Denver Post said they see establishing new green space as essential but, perhaps, impossible given the rising price of land. Yet voters recently ordered a sales-tax hike that will raise \$45 million a year for parks and open space. This has compelled planners to pore over thousands of acres that could be preserved as green space.

“We will lose ground if we don't get busy,” Parks and Recreation Director Happy Haynes said as she contemplated Denver's green-space crunch.

The problem, city officials said, is competing with private developers for land. Developers



since 1998 have installed buildings, paved over natural terrain and otherwise overhauled vast tracts of the city — profiting from shopping plazas and upmarket apartments that eventually sell as condominiums. They’ve built higher, lot-line-to-lot-line in some areas, leaving less space to even plant trees.

Turning to marginal industrial land, city officials said, may be Denver’s best hope for stabilizing a decline in green space per capita.

Chief parks planner Mark Tabor said that, after establishing the new green space around Heron Pond, Denver officials could try to purchase the land around the Arapaho power plant south of downtown and in the rail yards northwest of downtown for preservation as large green space where natural ecosystems could be restored.

This approach hinges on cleanup.

It can be done, not just by excavating and hauling away contaminated soil but by using modern cleanup methods that remove acidity and toxic metals, said Fonda Apostopoulos, a Colorado Department of Public Health and Environment engineer who managed decontamination of the Asarco smelters and 862 residential properties near Heron Pond.

“The low-lying fruit of clean property in Denver is few and far between. ‘Brownfields’ are pretty much the only property people are developing,” Apostopoulos said.

“It is all about exposure pathways” — the ways contamination can reach people, he said.

Around Heron Pond, cleanup included excavation and replacement of soil around homes. Nine new monitoring wells will be installed between the smelter site and the South Platte River to make sure toxic metals no longer contaminate groundwater, Apostopoulos said, pronouncing the area safe for at least passive recreational activity.

While cleaning up industrial wasteland costs hundreds of millions of dollars, “there are a lot of private-public partnerships that could do that,” he said. “Denver could get extra federal funding. They could get cleanup grants.”

Unfair competition

Earlier this year, Denver officials tried to buy a single acre in the highly sought Golden Triangle near downtown to establish green space needed for one of the city’s worst “park deserts” — only to find they were hamstrung by insufficient funds. They’d obtained \$2 million in grants from groups such as Great Outdoors Colorado. But developers were able to bring more than three times that amount, and prevailed in the range of \$7 million to \$9 million.

“We are never in there strategically,” City Council President Jolon Clark said in an interview. “Now that land is going to be developed, wall-to-wall, 10 to 12 stories tall.”

Clark has championed a push for more green space and bristled. Denver “absolutely should not” turn away from its ideal of being a city within a park, he said. “But this is where we are barreling. We’re getting farther and farther away from it every single year. We need to turn it around. This is about turning things around and getting back to our vision.”

“I don’t think people in Denver realize how far away we’ve gotten,” Clark said. “This matters because the fabric of our city is the public open space, the parks. It is critical for us to preserve that. I am very worried.”

Yet city leaders’ commitments appear complicated. Mayor Michael Hancock, in office since 2011, recently acknowledged the problem. “We are falling behind ... We are falling so far behind,” he said at a public gathering. Yet rather than build new 100-acre-plus green spaces — New York’s Central Park covers 840 acres, for comparison — Hancock has prioritized the creation of “pocket parks,” covering fewer than 2 acres, scattered around Denver so that every resident can reach one by walking less than 10 minutes.

“We are not talking about we have to have massive parks,” Hancock said.

Denver has 27 existing pocket parks, covering a total combined area of 13.5 acres. In contrast, parks established last century to ease industrialization covered more than 150 acres. Washington Park covers 161 acres and City Park encompasses 330 acres, including the Denver Zoo.

Nearly 86 percent of Denver residents already can reach a park within a 10-minute walk, city documents show.

On the City Council, Clark said he sees a need for both large and small green space, as much as possible. “We have to look at these micro parks. But, yes, we need big parks. We need open space. We need preservation along the river for habitat,” he said. “If we could get a pocket park on every single block in the city, that, too, would be part of being a city within a park.”

No big swaths of land

Developers contend they should not be seen as villains in the lessening of nature in the city.

Lack of city leadership has been the problem, said Mark Johnson, president of the Denver-based urban design firm Civitas, which has guided green-space projects here and around the world.

“The real issue is livability. Denver does not have enough parks and enough green spaces, and the parks are no longer connected,” he said. “Denver probably could use 50 percent more parks than it has — a significant increase in the types of parks and the distribution of parks.”

Some developers now advocate increased green space to buttress economic value.

“Land has gotten very expensive in Denver. We don’t have big swaths of open land left. We do have a pretty good supply of paved areas like parking lots. I have not heard anybody say, ‘Let’s turn parking lots into pocket parks.’ That could be interesting,” said Michael Leccese, director of the Urban Land Institute of Colorado, a developer-run global nonprofit organization that encourages smart growth.

“It’s not fair to put the blame entirely on developers,” Leccese said. “If you are developing a site, and everybody wants density to support urban living, you’re not going to solve the problem of open space. ... But we should be thinking about creating the proper green spaces for a growing city.”

Funding new parks

One of the last parks Denver established became possible after the cleanup of contaminated land, a 1.2-acre west-side parcel that city officials obtained in 2007.

Trailers and a bar at the site regularly drew police to deal with disorderly conduct and vandalism. The trailers were deemed derelict. But after city contractors razed the land in 2009, it sat empty for years. Residents led by Spanish-speaking mother Norma Brambila proposed the creation of a park.

Called Cuatro Vientos/ Four Winds Park, it officially opened in the Westwood neighborhood in 2014. While tiny, it improves one of the city’s worst park deserts and is heavily used.

City Councilman Paul Lopez, representing residents, celebrated that park and praised the women who demanded it to make their neighborhood livable.

“We practically had to have a bake sale to get this park built,” Lopez said.

“That’s the problem,” he said. “We as Denver residents, as taxpayers, should not have to have bake sales to raise funds to build our parks. This could be something that is a city government function.”

Denver’s success as a city increasingly may depend, in an era of global urban expansion and rising interest in resilience amid climate change, by how it connects with nature. But urban design experts said restoring significant green space would require major public and private investments and a vision, with help from the federal government.

“Private developers need to play a role. They’re trying to make a profit. It all comes down to detail. Is it going to be quality, meaningful green space? Or is it just a tree every 20 feet?” said Jeremy Stapleton, climate resilience director for the Sonoran Institute, an Arizona-based think tank considering expansion to Colorado’s high-growth Front Range.

“We’re hoping we are seeing a paradigm shift here where people are saying, ‘We will work with nature,’ ” Stapleton said. “We have got to embrace natural processes. Nature is going to provide way more benefits than a built environment — like air quality and water quality and access for people. It comes down to your land-use planning.”

Fighting for equity

For the industrial wasteland around Heron Pond, city and state health officials are finding that, when residents get involved, they demand full cleanup.

Denver has owned that land, next to the Asarco cleanup site, since 1951.

Fish tissue samples have confirmed elevated concentrations of heavy metals, including cadmium, lead and arsenic, according to a toxic inventory in city records. Waste from runoff continues to collect in this low-lying pond.

“No fishing” signs have been posted for years. Ball sports and other activity that could disturb surface soil also are limited. Yet birds live at the pond. City managers have designated the property as a “natural area.”

While health officials advise only passive use of the pond area for now, adjacent land, spanning nearly 15 acres, would be designated active use, such as ultimate Frisbee and soccer. Denver officials have created a master plan for an 80-acre “park” to be called Heron Pond/Heller/Carpio-Sanguinette.

At a November gathering in the adjacent Globeville neighborhood, city parks planner Cincere Eades led a process that lets residents vote on how the park will be designed. The process focuses on technical details, such as how fragments of sayings by school children could be embedded in cement pathways.

That's when longtime resident John Zapien and a friend stood to raise the issues of natural integrity, justice and cleanup. A former meat plant worker who has lived in Globeville since 1958, Zapien insisted environmental health ought to be a priority for green space in Denver.

Eades told residents the city is committed to establishing a park, but lacks funds for dealing with final cleanup matters such as the sludge at the bottom of Heron Pond. Dredging the pond to remove arsenic, cadmium, lead and other contaminants would cost more than \$2 million, Eades estimated, emphasizing that this industrial land has been deemed by the Environmental Protection Agency and the Colorado Department of Public Health and Environment as fully "remediated."

Water in the pond, she said, serves as a natural "cap" containing toxic contaminants to keep them from spreading.

Yet residents keep raising the issue, Eades said. "Every single time."

Concerns of residents appear related as much to justice and fairness citywide as to the actual safety of this land, she said. "And I don't blame them."

Zapien and a friend proposed a new idea for solving this problem and ending the delays in establishing new public green space. Why not seek private funds for dredging, in return for visibility? They pointed to the green plastic dinosaurs that the Sinclair Oil Co. deploys at gas stations around Denver. Children love these, Zapien said. What if cash-strapped city officials persuaded Sinclair to help establish this green space by funding a dredging of the pond?

In return, green dinosaurs could be installed in the park, Zapien said, including one big dinosaur that could be set in the pond, rising out of formerly toxic muck.

"Not clean this up? That would be doing the same thing we've been letting industry and government do to us in here Globeville for 100 years," he said.

"We cannot go on like that."

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