



Lively and Livable
Reinvigorating Second Street

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Lively and Livable: Reinvigorating Second Street

A professional project submitted to the graduate faculty in partial fulfillment of the requirements for the degree of Master of Urban Design

**By
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Lively and Livable: Reinvigorating Second Street

*A professional project approved for the
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For Mom & Dad

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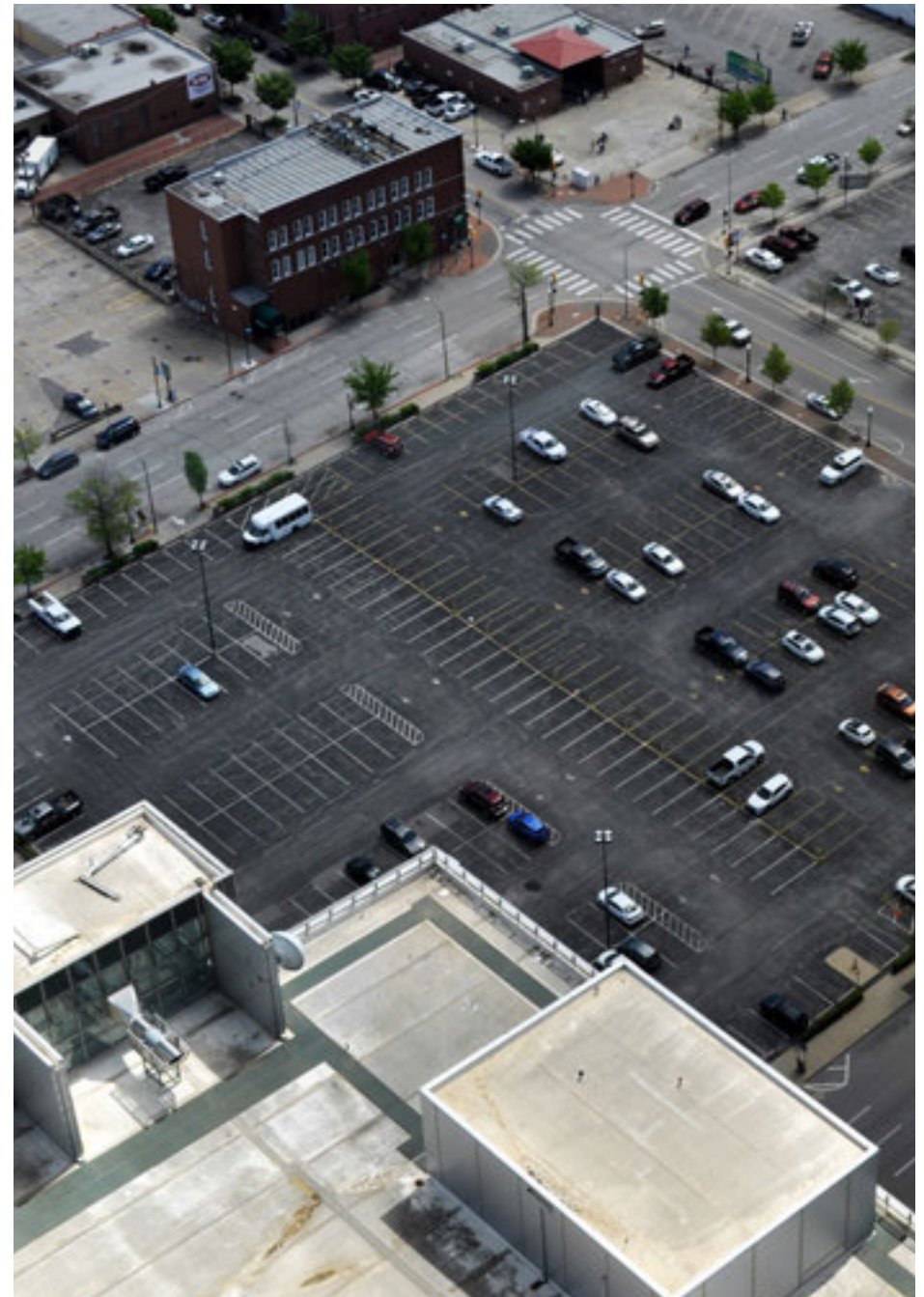
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Williams Green, from the forty-third floor of the BOK/Williams Tower.

Introduction

Second Street has played an important role in the growth of Tulsa, and has been a primary axis of major developments from Tulsa’s earliest days through Urban Renewal and today’s downtown renaissance. Now bookended by the BOK Center on the west and major construction projects in the Blue Dome District on the east, Second Street’s role in connecting disparate areas of downtown is more important than ever.

The walk between the two areas is only ten minutes, but it feels longer because of a number of factors: the street is lined by blank walls, there are few shops and restaurants, the sidewalks lack comfortable amenities and are interrupted by dozens of driveways, and the street is dominated by two uses: office buildings, and parking facilities. The design of street, which largely lacks curbside parking and features four, wide, eastbound lanes, encourages high speeds and wide, fast turns. The result is uninviting for pedestrians at best, and dangerous at worst.

Nonetheless, all hope is not lost. Nearly 40% of all downtown jobs are located along this corridor, and activity is picking up. More than \$250 million in residential and commercial development is planned or underway in the Blue Dome District, the Performing Arts Center is planning a massive renovation, the City of Tulsa has begun implementing more people-friendly street designs, and demand for new downtown residences is high.

With hundreds of millions of public and private dollars at stake, it is important to re-embrace Second Street, creating a space that is lively and convenient for visitors, and livable and comfortable for residents.



Project Goals

The primary intent of the study is to bring new life to Second Street by introducing design interventions that make the street more inviting, comfortable, visually interesting, and safe. These interventions, combined with planned projects, will aid in shrinking the real and perceived distances between districts abutting the corridor, draw people to the space, and encourage them to linger.

Another aim of this project is to increase the number of affordable housing units downtown. Downtown needs many more residents to attract the kinds of developments so many people want to see, including a grocery store. To date, the vast majority of the residential units added to the downtown market have been designed with the wealthy in mind. As a result of this hyper focus on luxury units, there is a shortage of affordable housing, preventing young people from moving downtown. Whereas most cities experiencing downtown renewals have high numbers of young people living there, Tulsa’s downtown does not, and downtown is growing at a slower rate than the city and MSA, which is also atypical of peer cities¹.

To generate exuberant diversity in a city’s streets and districts four conditions are indispensable:

1. *The district, and indeed as many of its internal parts as possible, must serve more than one primary function; preferably more than two...*
2. *Most blocks must be short; that is, streets and opportunities to turn corners must be frequent.*
3. *The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield they must produce. This mingling must be fairly close-grained.*
4. *There must be a sufficiently dense concentration of people, for whatever purposes they may be there...*

—Jane Jacobs, The Death and Life of Great American Cities



1 MKSK, *Tulsa Arena District Master Plan*, (Tulsa, 2019), 70.



Second Street, looking east at Boston from Main Street, 1910. Beryl Ford Collection.

For many decades, the blocks abutting Second Street were full of life and sturdy structures, including six of the ten buildings used as City Hall since 1894.¹ In the 1960s, in an effort to modernize and remove so-called “blight”, Urban Renewal took hold in Tulsa, and over the ensuing decades, the demolition of roughly 80% of downtown Tulsa’s buildings followed.² While some demolished buildings were replaced with new structures, around 70% of those sites remain as empty parking lots built for the estimated 70,000 workers who commuted to downtown in the 1970s and 80s.³

“To be fully dynamic, the American city must now accommodate the automobile. This is the vital factor of our new age... The forward-looking city is conscious of the automobile and automobile traffic as key factors.”

—Frederick J. Bashaw, *The Dynamic American City*⁴

Between 1968 and 1975, most of the buildings along Second Street were bought under the Urban Renewal program, then torn down. Streets were then closed to form the Williams Center superblocks.⁵ At the time, the “Pioneer District” contained brothels, and John H. Williams, co-founder of Williams Companies, described the area as a slum.⁶ City officials applauded the demolitions, for the promise of the new life the Williams Center would bring to downtown.

The office buildings, hotel, Performing Arts Center, and parking garage that replaced those smaller blocks and buildings was considered modern and revolutionary at the time, but today is recognized for being a ghost town after the end of the workday.

First and Second Streets were converted to one-way traffic on Monday, August 29, 1949,⁷ and the design, which encourages high speeds, remains basically intact today.

Many plans and studies have been conducted since, all indicating that Second Street is an important corridor that connects downtown’s major districts, and calling for various streetscaping, transportation, and landscaping projects. It has been identified as a high-priority corridor in the 2017 Tulsa Walkability Study⁸ and the 2010 Downtown Area Master Plan, and eventually will be converted back to two-way traffic.

1 Douglas Miller, *Seat of Power*, (Tulsa, Mullerhaus, 2017), 38-43.

2 Douglas Miller, *4th & Boston: Heart of the Magic Empire*, (Tulsa, Mullerhaus, 2016), 241.

3 *Ibid.*, 236.

4 Frederick J. Bashaw, “The Dynamic American City”, (1956), video, https://archive.org/details/0524_Dynamic_American_City_The.

5 *Ibid.*, 244.

6 *Ibid.*, 247.

7 “More Streets Join One-Way Plan Monday,” *Tulsa Tribune*, Aug. 24, 1949.

8 Jeff Speck, *Tulsa Walkability Analysis*, (2017), 222-223.



Second Street looking east from Main, Summer 1908. Beryl Ford Collection.



Left: Second Street looking east from Main, circa 1960s. Bliss Hotel in the background.

Right: Tulsa’s first City Hall, fire, and police station was located at 111 W. Second. Beryl Ford Collection.



Second Street looking east from Main, Summer 1908. Beryl Ford Collection.



Looking east down Second Street from Boulder in the early 1970s. Urban Renewal and the Williams Center leveled many buildings and closed Main and Boston between First and Third. At the time, First and Second Streets also served as Interstate 244 and U.S. Highway 75 until the construction of the Inner Dispersal Loop and associated highways, and the streets were designed to accommodate high-volume, high-speed, one-way traffic. Beryl Ford Collection

Modern though they may have been, the massive superblocks and fortified structures of the Williams Center were designed in a way that discourages walking, cut off north-south access, and removed the very reasons people chose to spend time there.

Since the opening of the BOK Center in 2008, Second Street has become a major pedestrian corridor again, linking the BOK Center, the Hyatt Regency Hotel, the Williams Center and Green, the Performing Arts Center, City Hall, and the Blue Dome District. Though the use has changed dramatically, this half-mile corridor still reflects the prevailing automobile-centric designs of the 1960s and 70s. In general, the Second Street corridor needs more *visual interest, pedestrian comfort, and activity.*

Jane Jacobs identified four conditions necessary to create “exuberant diversity in a city’s streets and districts”: mixed land uses, small blocks, buildings of varying age, and sufficient concentrations of people, including residents.¹ This corridor lacks all four.

The area suffers from **physical** problems, including:

- Long, high, blank walls and few active ground floors
- Numerous, wide driveways
- Superblocks that hinder free movement and act as barriers
- Dangerous street design with wide, fast lanes, one-way traffic, and double turn lanes
- Dominance of surface parking and garages
- Poor sidewalks conditions
- Air bridges that remove foot traffic from the street level
- Limited curbside parking
- No physical barriers (e.g. bollards) to prevent vehicles from entering sidewalks from driveways

Policy and enforcement deficiencies are also present, leading to:

- Commercial vehicles parked on or across sidewalks, blocking pedestrian paths
- No design standards for downtown requiring minimum levels of transparency or street-facing entrances
- Downtown is specifically prohibited from having zoning overlays
- Pedestrian amenities are low on the list of capital improvement projects; priority is given to widening arterial roads
- Curbside parking is almost non-existent

¹ Jane Jacobs, *The Death and Life of Great American Cities*, 1993 ed. (New York: Random House, 1993), 196-197.

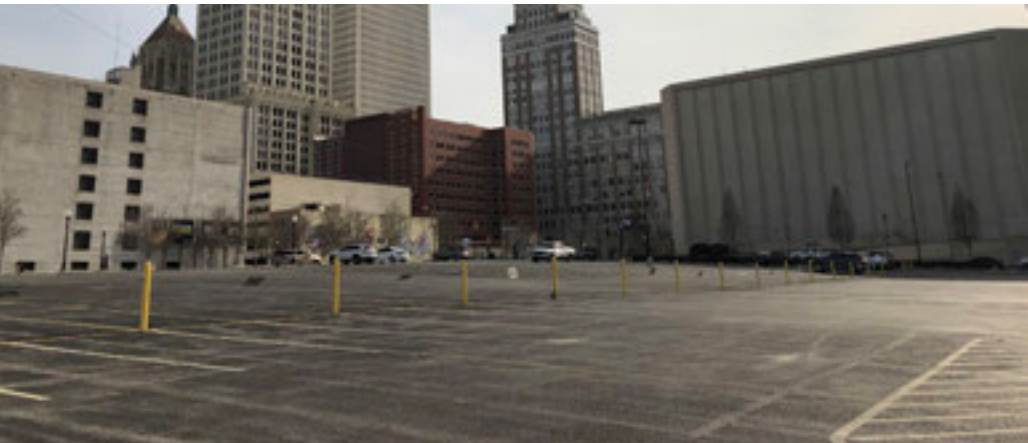


Left: The Bliss Hotel was built in 1929 at the northeast corner of Second and Boston. Photo from the Edward Miller Collection, Tulsa Historical Society, 2016.028.077. Right: The Bliss Hotel succumbed to Urban Renewal in 1973 to make way for the Williams Center superblocks. The hotel site is now part of the Williams Green. Photo from the Beryl Ford Collection.



Left: The Hotel Tulsa, located at the northwest corner of Third and Cincinnati, was demolished to make way for the Performing Arts Center (below). Saied Music Company is to the left of the Hotel. Photo from the Edward Miller Collection, Tulsa Historical Society, 1982.028.001.

Below: Many blocks cleared during Urban Renewal remain vacant, used for storing empty cars. This lot is owned by the Performing Arts Center Trust, and is primed for development.





Downtown Tulsa, 1951. Blocks are small, and neighborhoods remain intact, connected, and tree-filled. Few parking lots exist, the area is highly populated and walkable, and large parts of downtown are residential. Source: INCOG



Downtown Tulsa, 2016. Construction of highways that form the Inner Dispersal Loop severed downtown from nearby neighborhoods. Most land area is devoted to surface parking, and a large number of superblocks have been created. Source: INCOG

Street & Block Layout



Block Layout

With the exception of the two Williams Center superblocks and the Civic Center, the downtown street grid is mostly intact, built on 300-foot square blocks surrounded by an 80-foot right-of-way. The two Williams Center superblocks encompass six square blocks plus the abandoned rights-of-way where Main and Boston used to exist, totaling 636,000 square feet.

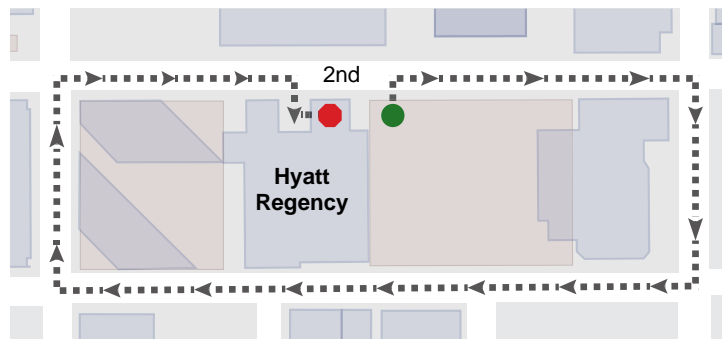
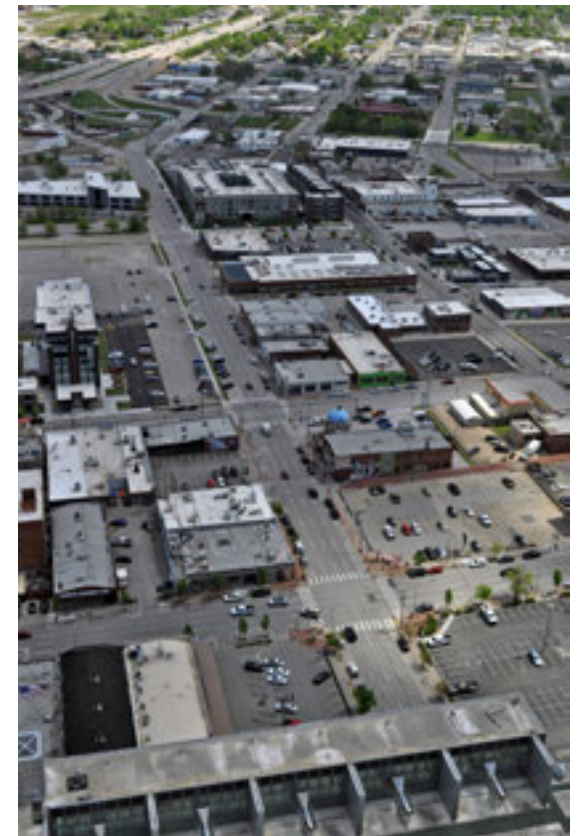
The superblocks are 1,060 feet long, and except for a north-south pathway and staircase between the Williams Green and the Hyatt Regency Hotel, there are no opportunities for people to change direction until they reach the ends of the superblocks.

Two airbridges traverse Second Street, one connecting the Hyatt Regency and Williams Resource Center, and another providing access to the Williams/BOK Tower from the Williams Green. These above-grade passageways are privately owned, and are not a suitable substitute for public sidewalks.

One-Way Pairs

First and Second Streets form an east-west one-way pair, and are bisected by two sets of north-south one-way pairs: Cheyenne-Boulder and Cincinnati-Detroit. Boulder is currently being reverted to two-way traffic, and Cheyenne will follow. Most downtown streets are planned to be reverted to two-way traffic.

Aside from confusing drivers unfamiliar with navigating downtown, one-way streets have led to interesting and solvable problems. For example, the entrance to the Hyatt Regency hotel is located along Second Street, on the southern Williams Center superblock. Though the parking garage exit is just 150 feet away from the entrance, people wishing to pick up their party at the covered entrance have to travel more than half a mile around the superblock because Second Street is a one-way street. Though downtown has featured one-way streets since the 1940s, it still confuses drivers, and it is not uncommon to see drivers going the wrong way down a street, or even driving on the sidewalk to make up for their error.



The circuitous routes created by superblocks and one-way streets can cause logistical problems.



This driver turned the wrong way on Cincinnati and chose to drive on the sidewalk to avoid oncoming traffic.



Street Design

Second Street from Denver to Elgin contains four eastbound lanes, each varying from 10.5 to 14 feet wide. According to an analysis by Speck & Associates and Nelson-Nygaard, the corridor is oversupplied by two to three lanes under very conservative rush-hour conditions.¹

Confirming their findings, the 24-hour total traffic flow in 2017 on Second Street at the east edge of downtown was 5,000, which is well below its capacity: Second Street carries 171-933 cars at peak hour,¹ compared to a capacity of up to 7,600 at peak hour.² The road is only at 2.25%-12.28% capacity, meaning even at the busiest hour of the day, the road is still 87.7%-97.75% empty. Simply put, this overly-wide street, which is typical of most streets downtown, is over-engineered and incredibly wasteful of the City's already-strained financial resources.

Most streets in downtown Tulsa are over-engineered, designed for traffic volumes not seen in downtown since the 1959 when nearly 270,000 cars entered and left downtown each day.¹

The streets are wide, fast, and straight, and feature highway-standard lane widths of 12 feet or wider. Many one-way pairs remain, and those streets typically have four or five travel lanes. At least five downtown intersections have double turn lanes, which encourage drivers to perform turning motions that violate state law, and at a high rate of speed. In 1960, Tulsa traffic engineer Harold Miller agreed that the conversion from two-way to one-way streets increased speed: "Before, traffic average speed downtown was 7-8 mph... In 1959, we checked traffic speeds at an average of 13-15 mph... The only logical explanation for the increased movement...is the one-way street system."³

This concoction is a potent killer of walkability and business, and contributed to the demise of many downtown shops when the one-way scheme was introduced in the late 1940s. At a time when downtown accounted for 70% of ad valorem taxes in Tulsa County, downtown merchants fought and lost the battle against one-way streets.⁴ Unable to capture traffic in both the morning and evening, many dry cleaners, florists, bakers, restaurants, and other shops either shuttered completely or moved outside downtown where

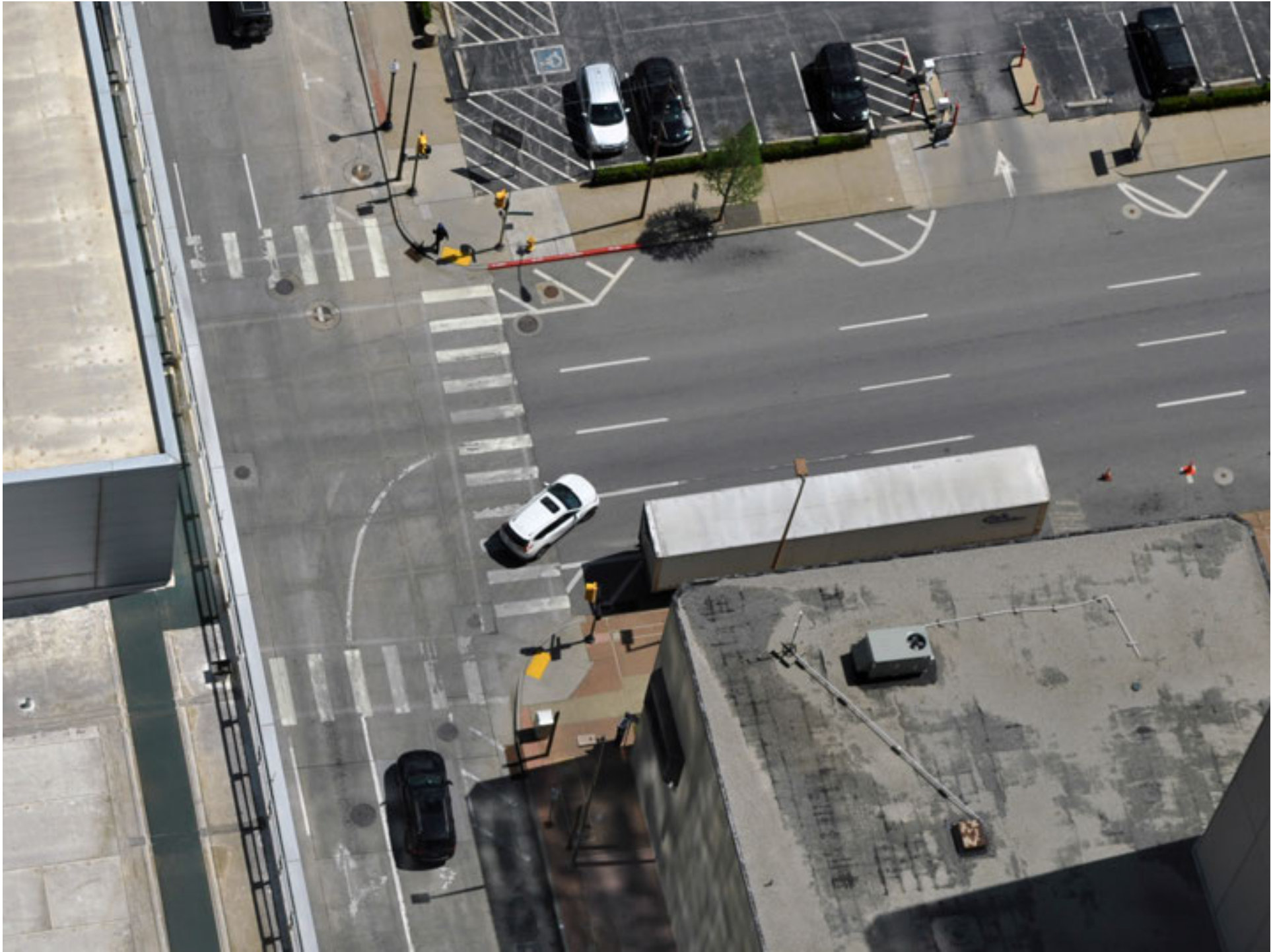


¹ Speck, *Walkability Analysis*, 29.

² Saturation Flow Rate recommendation by Transportation Research Board, National Research Council, *Highway Capacity Manual*, (2000), 8-27.

³ Ken Neal, "1-Way Street Setup Helps City Safety", *Tulsa World*, Mar. 6, 1960.

⁴ "One-Way Streets' Foes See No Gain", *Tulsa World*, Nov. 3, 1957.



two-way streets gave them better visibility throughout the day.⁵

Second Street remained somewhat viable until the late 1960s and early 1970s, when the street ceased to function as an Interstate and U.S. Highway. As traffic counts dropped, seedier establishments moved in, driving down the appeal of the area until the Williams Companies bought and leveled many of the surrounding blocks to build their superblocks.

Though today's planners and engineers have a more complete understanding of street design and its effects on cities and people, a large number of downtown Tulsa's streets remain virtually untouched, and are in dire need of a re-thinking about who the street should be designed to serve, and what the goal of a street project can be.

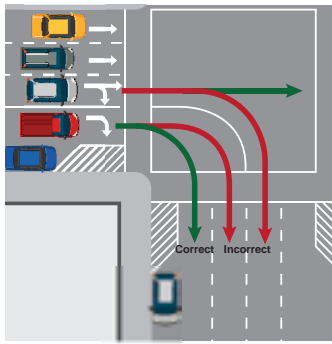
“If governments sincerely believe that their streets are so dangerous they must compel people who ride bikes to wear armor, they should instead immediately redesign their streets to make them safer so people don’t need that protection in the first place.”

—Janette Sadik-Khan, *Streetfight*, p. 224.

Double Turn Lanes

There are two sets of double turn lanes along Second Street: one set at Boulder, and one set at Cincinnati. The double turn lanes themselves have extra-wide turn radii because the inside turn lane swoops out into the second lane of the intersecting street, pushing the outside turn lane into the third lane of the intersecting street (see figure below and photos at left and right). This allows drivers to speed through turns, exponentially increasing the risk of death for people hit while crossing the street.

Streets with multiple wide lanes in one direction that allow high traffic speeds are called ‘highways’ in English, and highways do not belong in downtowns.



Two intersection along Second feature double right turn lanes.

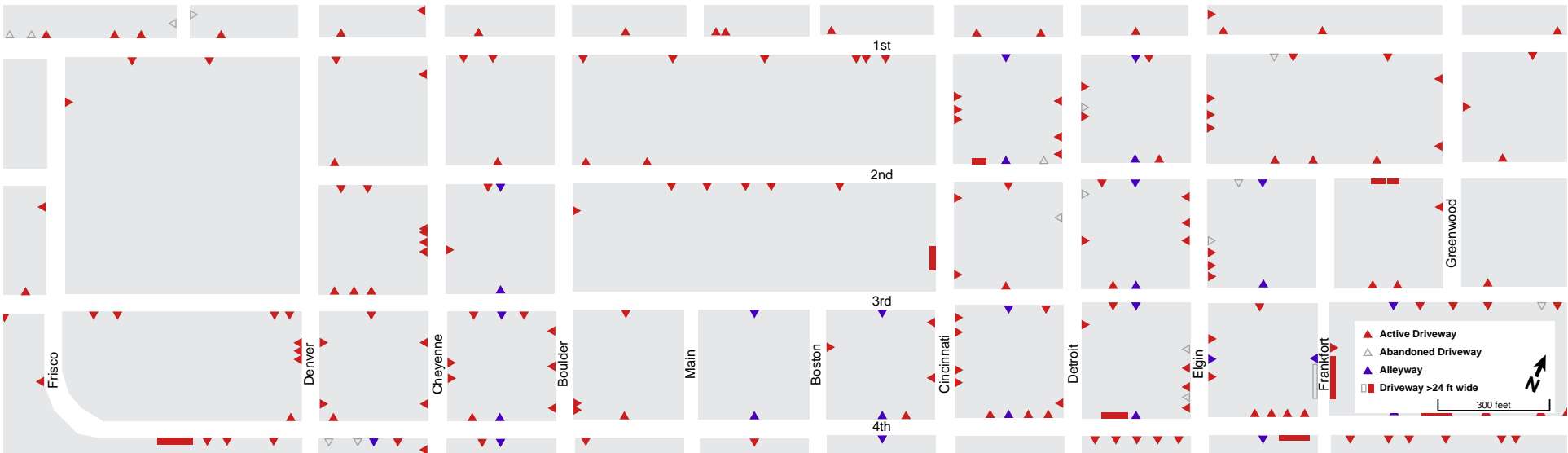
5 Travis Walsh, “Merchants and Church Win Delay on One-Way Streets”, *Tulsa World*, Oct. 6, 1957; Travis Walsh, “Commission Stands by 1-Way Streets But Listens to Opponents’ Protests”, *Tulsa World*, Feb. 8, 1958; “Merchants Eye One-Way Survey”, *Tulsa Tribune*, Feb. 7, 1958.





Abandoned driveways often confuse people considering parking in front of them, and create unnecessary trip and fall hazards for people using the sidewalk.

Curb Cuts



Curb Cuts

In his 2017 walkability study of downtown Tulsa,¹ Jeff Speck highlights Tulsa’s unique penchant for allowing as many driveways as possible along downtown blocks, which is not only dangerous, but effectively eliminates the City’s control over the public right-of-way, and prevents the City from providing public curbside parking.

Each of the 20 curb cuts along the seven blocks between Denver and Elgin Avenues pose potential risks to pedestrians, even the abandoned driveway curb cuts (pictured at left, and lower-right). In addition, these curb cuts generally lack bollards or other physical barriers to prevent cars from entering the sidewalk or to alert pedestrians that vehicles may cross their paths. In many cases, there is no marking or change in paving material to alert pedestrians that they are entering driveway areas.

Driveways create conflict points between motor vehicles and humans, and if either the driver or a pedestrian are distracted, there is potential for vehicle-pedestrian collisions that may lead to serious injury or loss of life.

Alleyways should be the only type of curb cuts in walkable, urban areas. Any driveways or loading docks should connect to alleyways, not to the street face.

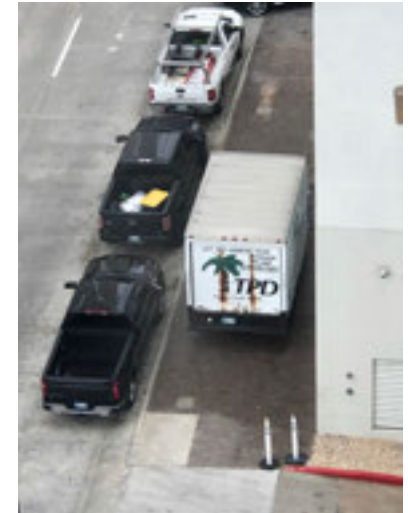
	Active Driveways	Abandoned Driveways	Alleyways	Total
North Side	6	1	2	9
South Side	9	0	2	11
Total	15	1	4	20



Above: Wide driveways that cut across the sidewalk endanger pedestrians, and should not be allowed.

Right: Abandoned driveways confuse drivers and could lead to injury.

¹ Speck, *Walkability Analysis*, 39.

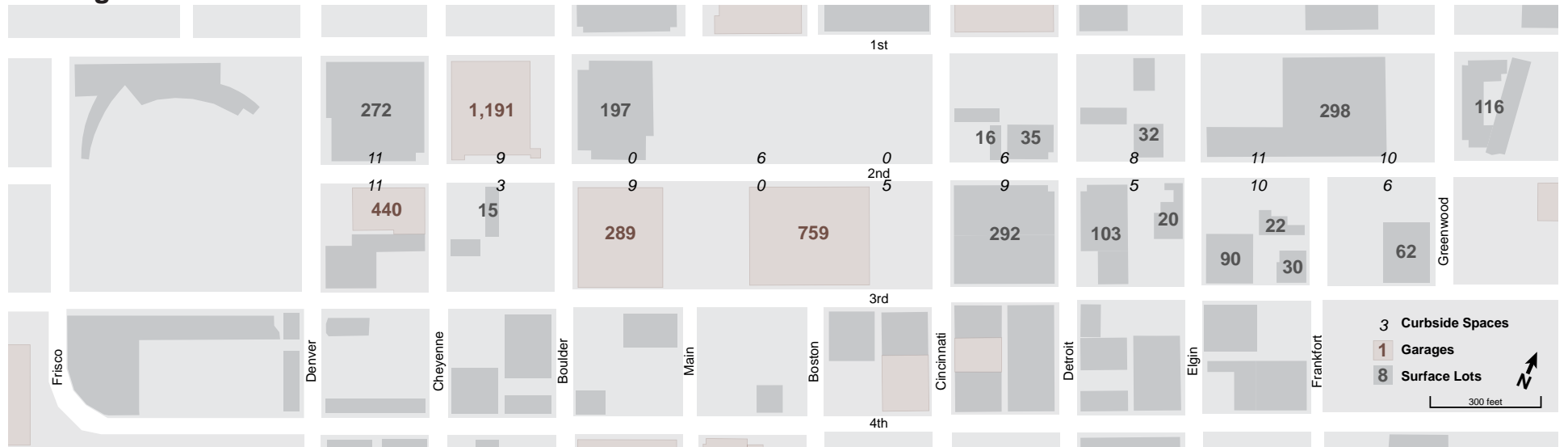


Driveways that cut across sidewalks create frustrating and potentially dangerous situations. A lack of bollards makes it easy for vehicles to use driveways to access and block sidewalks by parking on them. Parking garages can often have narrow sight lines that make it difficult to see if a vehicle or pedestrian is coming.





Parking Facilities



Parking Facilities

Parking facilities are a dominant feature along the corridor: currently, there are four large parking garages, and 15 surface parking lots abutting Second Street, which have room for 4,279 vehicles. Three of the garages are incorporated in some way into the design of another building or structure, and in many instances, surface parking lots cover entire city blocks. Developers plan to replace the 111 S Elgin Lot with a 1,929-space garage, increasing the total parking supply along the corridor by 38% to 5,910 spaces.

The Tulsa Parking Authority commissioned a parking study within the CBD in 2015, which indicates a parking surplus of approximately 23% on peak demand days. The study identified 745 curbside parking spaces in the study area, which extends from the railroad tracks to 8th Street, and from Houston Avenue to Highway 75.¹

These underutilized spaces sit in the heart of the most valuable land in the entire city, and the gaps prevent people from walking between destinations along the corridor. Combined, the surface parking lots comprise roughly 500,000 square feet, most of which is developable. This is comparable in size to Southroads or Promenade Mall.

Comparatively, there are very few curbside spaces available between Denver and Greenwood. There are 61 striped parallel parking spaces along the north side of Second Street, and 58 on the south side. No parking allowed at all along three city block lengths. Having cars parked at the curb is an important element in making sidewalks feel safer, as they offer protection from vehicles in the travel lanes.

The lack of striped spaces does not prevent people from creating ad hoc parking lanes, as the photo on the right demonstrates. Here, contractors working on the Hyatt Regency have created 17 new parking spaces with no effect on traffic. In a way, the contractors were engaged in a form of tactical urbanism and showing traffic engineers what is possible in a very direct way at no cost.



Downtown visitors often complain about a lack of parking, while massive parking structures like the West Garage remain half empty and curbside parking is available a few blocks away. The sentiment that Tulsa does not have a parking problem—but a walking problem—rings true.

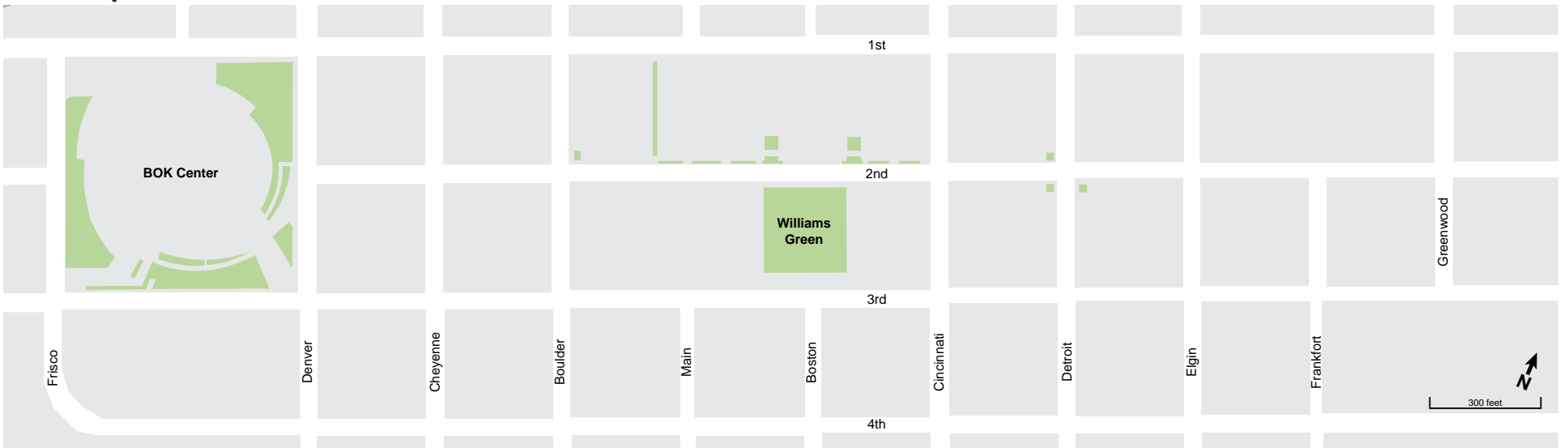


These drivers decided to make a parking lane on the north side of Second Street where one did not exist. No traffic calamities ensued.

¹ Walker Parking Consultants, *Parking System Planning and Financial Study for Tulsa Parking Authority*, (2015), i.



Green Space



Green Space

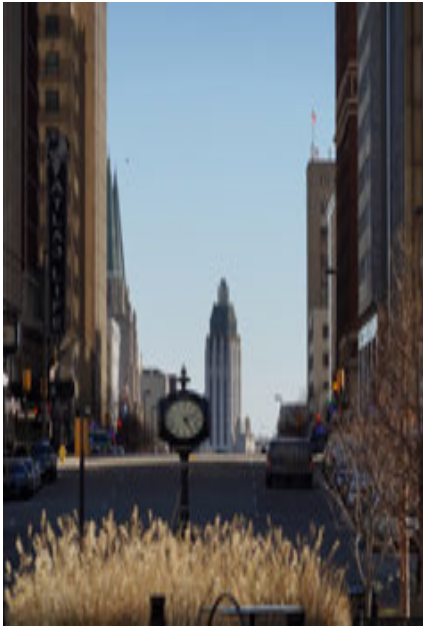
Grass lawns surround large portions of the BOK Center, but most of these areas are fenced off, and there are no benches or other amenities, and no programming.

The Williams Green encompasses approximately two-thirds of a city block, and serves as the main public space along the Second Street corridor; however, the park is not readily visible from Second Street because of its location atop the South Garage, approximately 20 feet above the street.

A monumental, 53-foot wide staircase (right) leads from Second Street up to the plaza, but the sheer height, position, and orientation of the staircase and garage walls in relation to the park prevents views of any park activity from street level (below).

At street level, it is unclear what lies beyond this imposing staircase, and unfamiliar passersby would never imagine lovely water features, shaded seating areas, art, and interesting views of Boston Avenue skyscraper canyon (below) are just 34 steps above where they stand.

Beyond a few small pockets of landscaping in front of the BOK Tower and at the Williams Green, Second Street—like most of downtown—is largely devoid of landscaping, including trees, flowers, shrubs, planters, or hanging baskets.





Street Trees per Block Face



Streetscaping

Limited pedestrian amenities exist along the corridor, with the exception of a few benches, large planting areas with mature trees on the north side of Second Street along the Williams Center superblock, and three corners of Second and Elgin which contain small carve-outs for benches and a few plants.

There has been a renewed effort to re-plant trees throughout downtown in recent years, but the trees are generally small and young, and more are needed, especially along the north side of Second Street where shade is at a premium.

In some cases, decorative shrubs including crepe myrtles have been planted in lieu of trees. These shrubs, though seasonally beautiful, do not provide the same benefits as street trees and are generally inappropriate along sidewalks because of their short, fanning nature.

Sidewalks

As is true across much of downtown, the sidewalks along Second Street are in generally poor shape. Broken bricks, uneven paving surfaces, holes, cement-filled tree wells, and drainage issues affect much of the corridor.

Obstructions within the sidewalk are numerous, and create an obstacle course for pedestrians to navigate. Common obstructions include power poles, construction signs aimed at vehicles, portable outdoor toilet cubicles during construction projects and special events, and commercial vehicles that regularly block the sidewalk. The Hyatt Regency has even taken to blocking the Williams Green staircase with its shuttle vans. Increasingly, sidewalk cafes are being installed in a way that leaves very little room for people to walk.





Crosswalks

Crosswalks along the corridor vary in width, quality, safety, and accessibility. As the photo on the left illustrates, sometimes the painted crosswalks do not align with ramps, terminate into storm drains, are blocked by utility poles or other obstructions, or all of the above, as is the case at Second and Elgin. These are serious accessibility issues, and are certainly not compliant with the Americans with Disabilities Act.

In many cases, the crosswalk paint has simply worn off the roadway. In 2018, there was a large effort to repaint downtown crosswalks, though many of the applications have already failed, possibly due to the paint or Thermoplastic being installed in the wrong weather conditions.

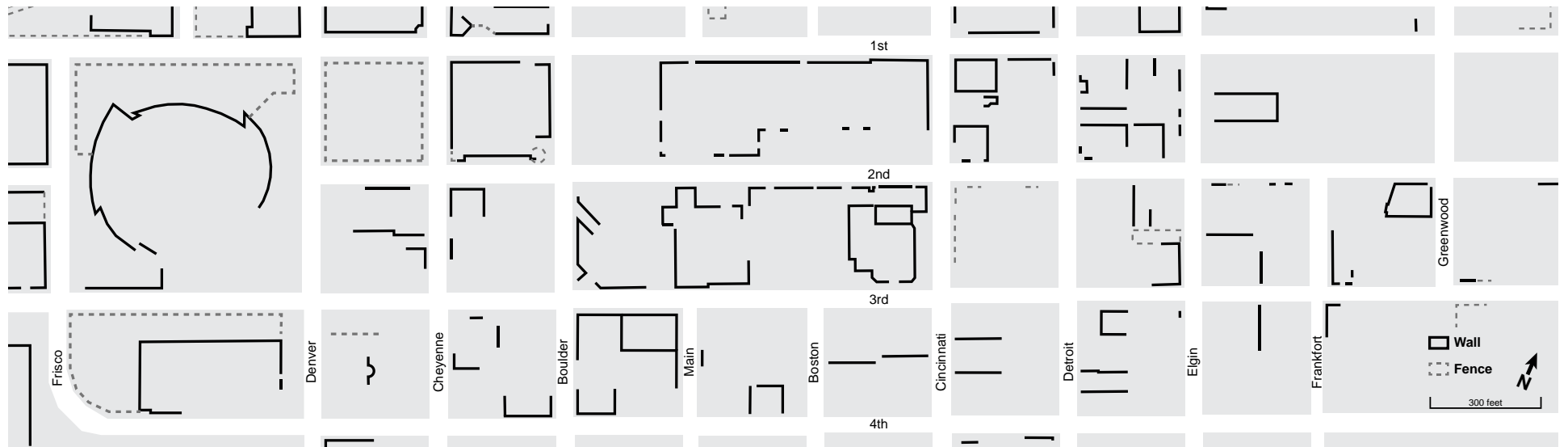
Multiple crosswalks begin and end at poorly designed ramps that include built-in tripping hazards. The paths of these narrow ramps overlap in such a way that a person can trip over the sloping curve of the ramp perpendicular to their direction of travel. Even those with decent ramps face other issues: because of the crown of the road that slopes downward toward the sidewalk, many of the ramps become flooded during even light rain events. After the rain, debris like sand and dirt collect in the ramp areas.

Nearly all of the ramps along Second Street need to be redesigned to correct these serious and dangerous design flaws.





Blank Walls & Fences



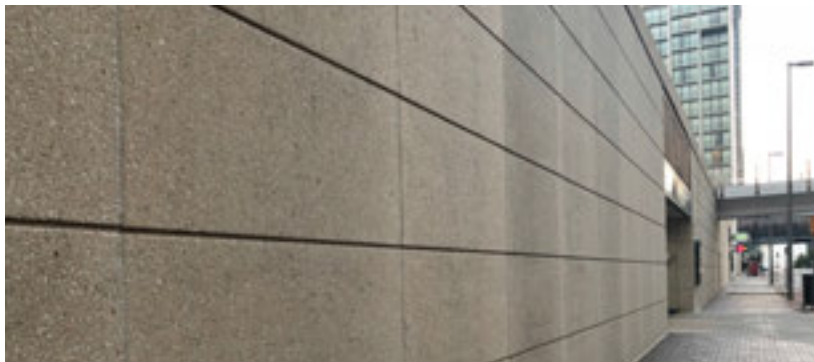
Blank Walls

One of the major impediments to pedestrian activity along the Second Street corridor is the abundance of blank walls, especially those at ground level.

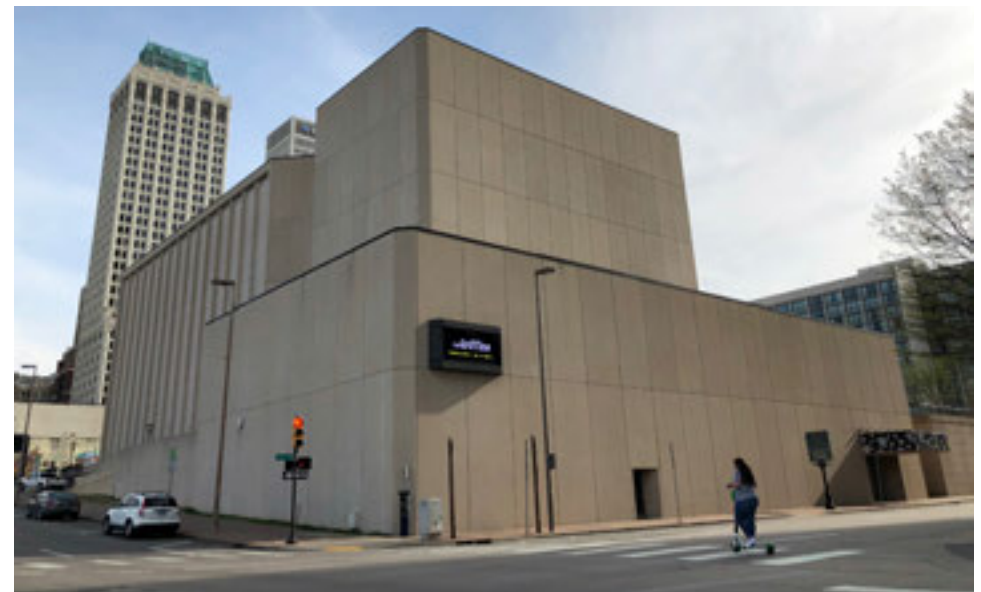
More than 1,000 linear feet of blank walls line the ground level of the street between Denver and Elgin, creating unattractive spaces devoid of life and activity. Blank walls and inactive ground floors contribute directly to the lack of activity along the corridor. They create dark, quiet spaces where offices, apartments, studios, shops, and restaurants would ordinarily be bustling with life and light, and people tend to avoid sections of blank walls.

Jeff Speck’s General Theory of Walkability states that to be favored, a walk has to satisfy four main conditions: it must be useful, safe, comfortable, and interesting.¹ Blank walls directly reduce comfort and interest levels, they may indicate a walk might not be very useful, and lead to perceived safety issues.

Another way to view blank walls is to think of them as physical barriers. In 1961, Jane Jacobs wrote, “The root trouble with borders, as city neighbors, is that they are apt to form dead ends for most users of city streets. They represent, for most people, most of the time, barriers.”² She later posits that borders, regardless of the form they take, can “tear a city to tatters,”³ and by all accounts, the blank walls along Second Street have done just that.



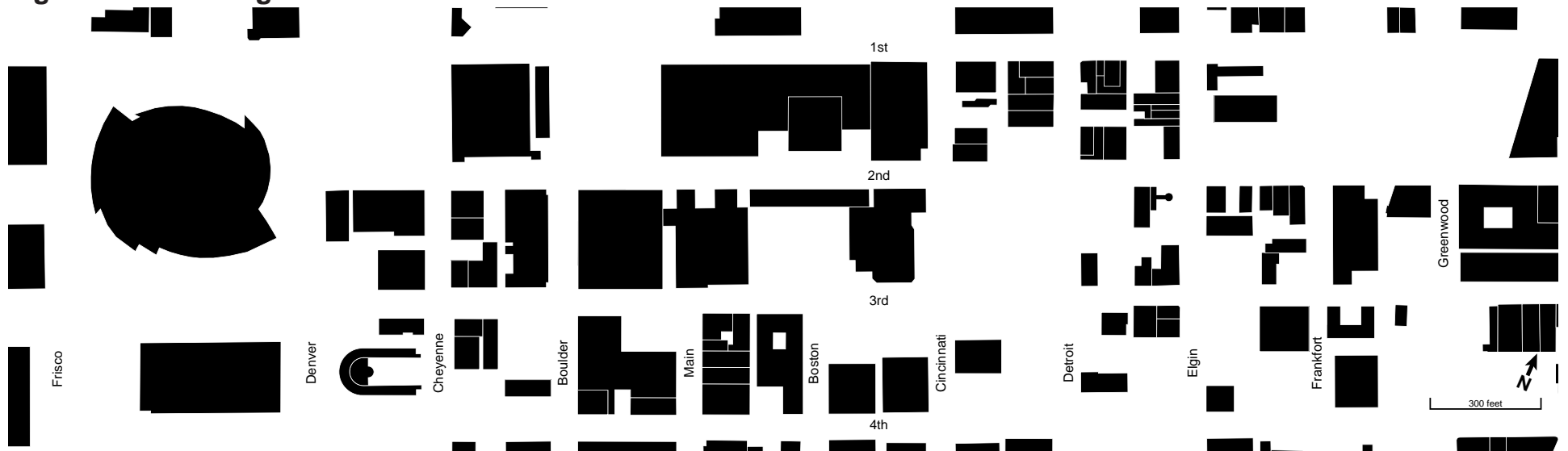
The PAC and South Garage are clad in precast concrete panels and no windows, sending a message that the area should be avoided.



1 Jeff Speck, *Walkable City*, (New York: North Point Press, 2012), 11.
 2 Jacobs, *Death and Life*, 338.
 3 *Ibid.*, 346.



Figure-Ground Diagram



Empty Space

Urban Renewal and automobile-centric development hollowed out much of downtown Tulsa, as the figure-ground illustration on the left shows. Urban Renewal promised new buildings would follow the demolition of old ones, but in Tulsa, 70% of the sites of demolished buildings remain as parking lots.¹ This section of downtown fared better than others, but there are still many empty, undeveloped parcels which sometimes envelope entire blocks, as illustrated in the figure-ground diagram to the left.

Such voids in the urban fabric discourage people from walking between districts. Often taking the form of parking lots, these spaces are uncomfortable to walk next to due to a lack of shade, heat from the pavement, a lack of a street wall to provide a sense of enclosure, no barriers between people and cars, and the parking lots are generally unpleasant and unattractive.

Downtown is currently excluded from zoning regulations that would require trees, shrubs, landscaping, and low walls to screen parking lots, though there is a proposal to change this.



1 Miller, 4th & Boston, 236.





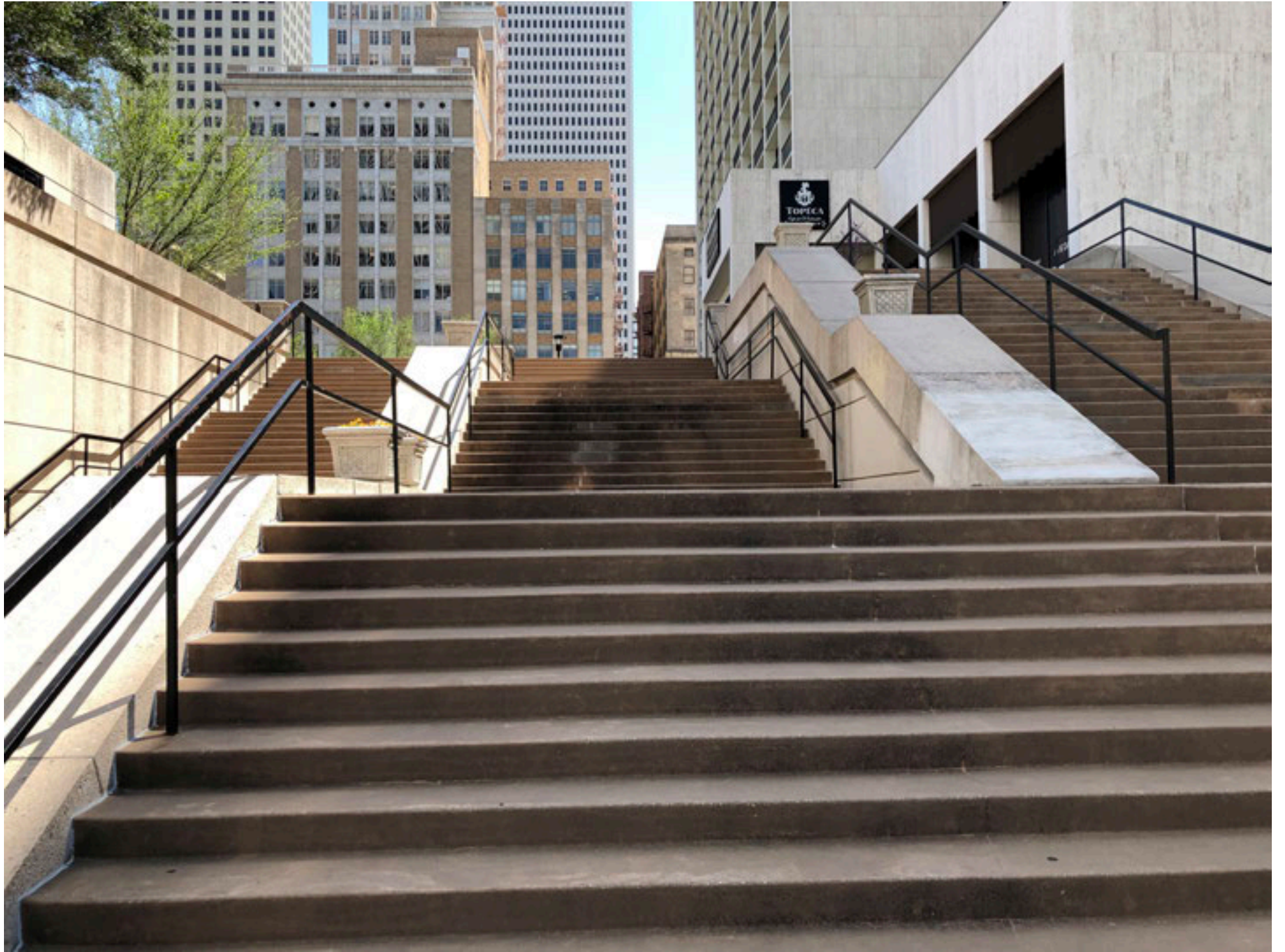
Blue Dome

The iconic Blue Dome at the southwest corner of Second and Elgin was built in 1925 as a gasoline and service station, and since then, has inspired the re-development of its corner of downtown. The building is instantly recognizable and has lent its image and name to the surrounding district.

Though responsible for the identity of the area, the building itself is in disrepair, and is surrounded by a gravel parking lot that detracts from the building's character and the areas around it. There is no curb or landscaping keeping the cars away from either the sidewalk or the building. Wood rot is prevalent in the window and door frames, the mortar appears to need attention, some of the bricks have been painted, and the finer detailing on the building need a loving hand. There appear to be many sockets for lightbulbs under the eaves, but no bulbs are present.

With work, the building could be brought back to the pristine condition it deserves.



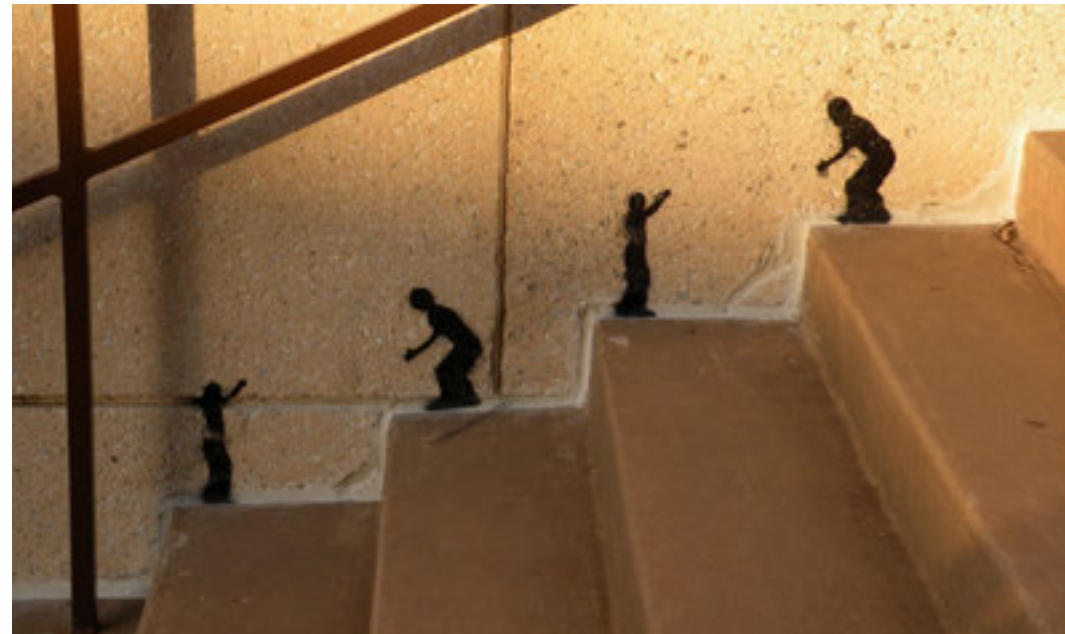
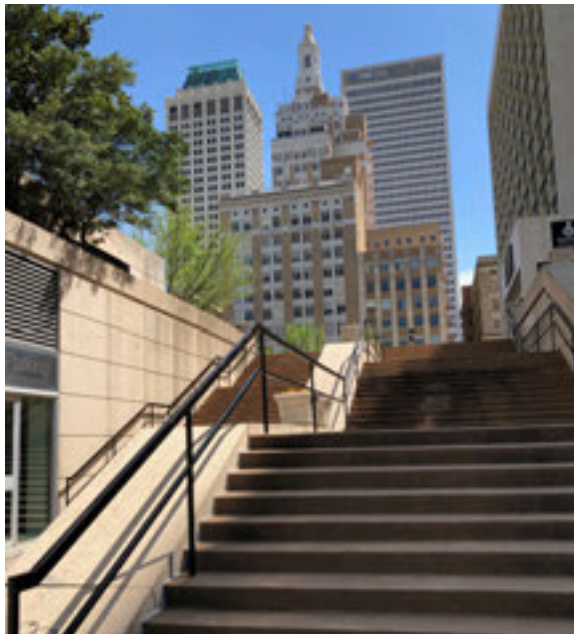


Williams Green Staircase

The 54-foot-wide staircase on the west side of the South Garage theoretically provides people on Second Street easy access to the Williams Green, a park that sits atop the garage.

In person, however, the staircase is an imposing, 20-foot-tall barrier. From the ground, one cannot see what is beyond the last steps, potentially creating concerns about safety, especially at night. Sandwiched between the garage and the Hyatt Regency, passersby could even assume the staircase just leads to a hotel entrance. Three landmark buildings in the Oil Capitol Historic District are visible from the base of the staircase, though from this view, it is unclear whether one can actually walk to them.

In 2011, a very small bit of graffiti depicting skateboarders was added to the staircase, which, if one notices it at all, adds a bit of whimsy and fun to the imposing structure.





Downtown Tulsa



City Hall
Jazz Hall of Fame
ONEOK Field
Perf Arts Center
Williams Green
Reconciliation Park

15-9

ARK
LUXE

TULSA PERFORMING
ARTS CENTER

WHAT'S ON
DINNER

Wayfinding

People often overestimate the time it takes to walk somewhere, and on streets with blank walls, no ground-floor retail, no activity, and limited visual interest, the perceived time it takes to walk somewhere can increase exponentially.

The existing wayfinding in downtown consists mostly of very tall signs aimed at automobiles, telling drivers which way a destination is located, and a much smaller number of decorative pedestal signs that contain maps and very little information useful to pedestrians, especially those who are unable to read and understand maps.

The automobile-oriented signs are fairly narrow, and many destination names have been truncated, creating some amusing and confusing abbreviations, some more understandable than others: “Tulsa Comm Coll”, “Perf Arts Center”, “County Courthouse”, “Rte 66 Hist Site”.

Many of the signs are located in the middle of a sidewalk, obstructing pedestrian paths for the benefit of people in vehicles. When combined with the many other obstructions on downtown’s mostly narrow sidewalks, these signs can become more of a hindrance than an aid.

These 148 wayfinding signs in downtown Tulsa, designed by a firm in Michigan, were installed in 2008 at a cost of \$740,000, and were funded by the Third Penny sales tax.¹ When initially installed, several of the signs were riddled with errors, including arrows pointing in the wrong directions, misspellings, and incorrect destinations.² Occasionally, they even were faced the wrong way along one-way streets. Over time, the erroneous signs were replaced.

There are better alternatives that would cost the City markedly less money.

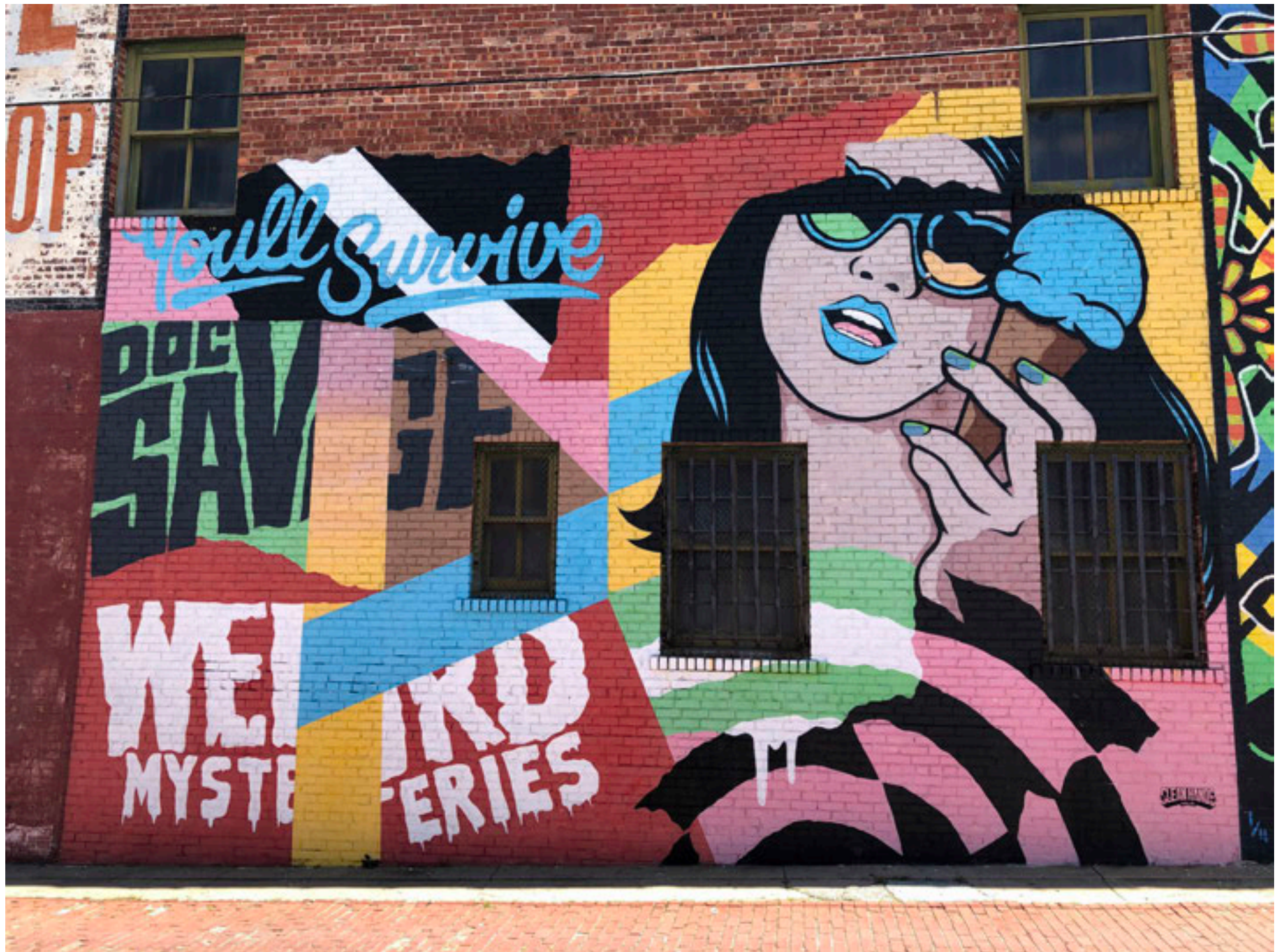


Many of the pedestrian-oriented signs have been damaged or vandalized. This one is relatively unscathed, though an Art Deco element has been removed from the center and stickers have been placed on the face. Others have faced graffiti. Most, like this sign, are also obstructing pedestrian traffic on sidewalks.



This automobile-oriented wayfinding sign at the northwest corner of Second and Boulder, faced the wrong way on a one-way street, and even if reversed to face oncoming traffic, would have provided incorrect information.

- 1 Althea Peterson, “City erects new signs”, *Tulsa World*, Sep. 30, 2008, https://www.tulsaworld.com/news/local/city-erects-new-signs/article_19c63a84-0850-53dd-9098-241d1ac75c51.html (accessed April 3, 2019).
- 2 TulsaNow Forum, “Downtown Wayfinding System”, (2008), <http://www.tulsanow.org/forum/index.php?topic=11067.60>, accessed April 9, 2019.



Public Art

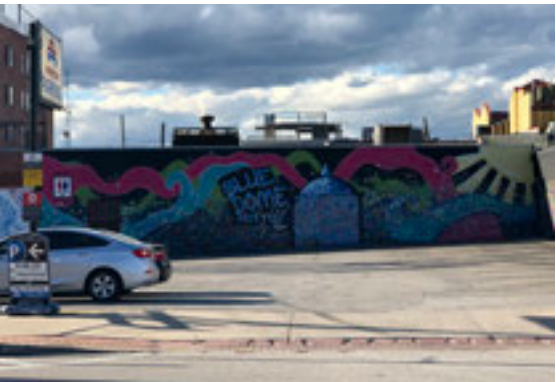
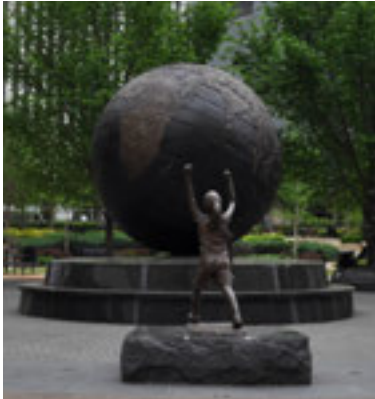
Second Street is already the home of a few public art pieces, but they are often dwarfed by the enormity of the blank walls surrounding them.

Three tile mosaics featuring Tulsa scenes along the Williams Resource Center appear to be fairly large up close, but when viewed from across the street, look rather diminutive. They are also placed eight feet above the sidewalk, making the works difficult to enjoy up close.

Two freestanding tile mosaics exist in the Williams Green: one of Will Rogers, and another of a ballerina. The two works frame the air bridge leading from the park to the BOK/Williams Tower.

The Williams Green contains two bronze sculptures, as well. A larger-than-life bronze ballerina dances near the western edge of the Performing Arts Center, and a large piece by the Tulsa Rotary Club illustrates the Club's achievements around the world by including bronze statues of people overcoming challenges like polio. These figures frame a circular area surrounding a large globe, and the whole installation is surrounded by a semi-circle of trees.

In recent years, mural activity has picked up in downtown, and Second Street is now home to a handful of murals that help disguise and liven blank walls, though more are needed.





Though Tulsa's housing affordability problem does not make national headlines, it is real, it is harmful, and it is stunting the growth, livability, diversity, and vibrancy of downtown. There are many causes for the housing affordability crisis faced by most cities, and this project does not seek or claim to solve all of them.

Throughout human history, cities have built up incrementally over time, by individual people building one structure at a time. Typically, these buildings have been fairly narrow and multi-level so that most daily activities could be reached on foot within a five- or ten-minute walk. Builders in the United States appear to have completely forgotten those lessons in the past 60-70 years, and are now mostly only capable of producing large, expensive, suburban-style projects.

This fine-grained urban development pattern based on small lots makes cities interesting, accessible, and keeps the barriers of entry to the construction and development of housing—especially financing—low. It is simply less risky to develop a small building on a small lot than to try to force the numbers to work on massive, block-scale developments. Small parcels also give smaller, local developers a chance to participate in the market, whereas large plottages tend to favor national or international developers with large cash reserves.

Nearly all of the recent housing developments in downtown have been both large-scale, and high-end. These apartments, marketed as "luxury" units, are not really that luxurious—they are commonly built with cheap materials accented by granite countertops or stainless steel appliances—but they command a hefty premium over apartments throughout the rest of the city.

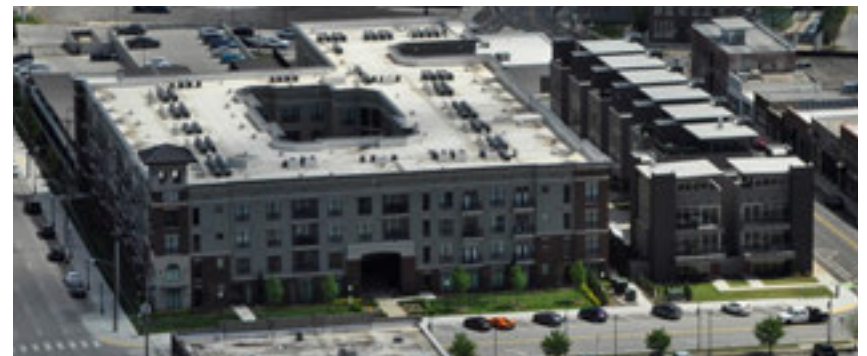
Buyers and renters deserve more credit—and the projects deserve more thought—than area builders give them. Some of these projects, including the Urban 8 townhomes and 100 Boulder Condominiums, remain virtually empty. Urban 8's unfinished 3,000 sq ft units were originally listed at \$800,000 in 2016, and after three years of being on the market, only half of those units have sold. The 100 Boulder condos were originally listed as "luxury" at \$200,000. Those "luxury" units are wrapped in faux stucco (EIFS), and include IKEA cabinets, stowaway beds, and no grade separation from the sidewalk. Though built five years ago, only two of the 18 units have sold.

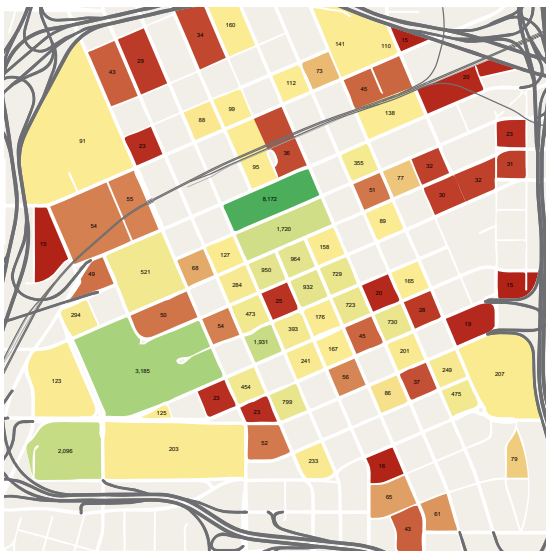
Occupancy has also been slow to build at large-scale apartment projects like The Edge, a suburban-style apartment complex on the east edge of downtown with high rents. Meanwhile, smaller, more affordable apartments—Coliseum Apartments, Harrington Lofts, and Blair Apartments—have perpetual waitlists. Developers in Tulsa have grossly overestimated the demand for "luxury" living, and as a result, few people with average incomes are able to live downtown.

Right: The Edge, the large structure on the left, is a 165-unit apartment complex at Second and Greenwood. The four-story structures on the right are the Urban 8 townhomes, which have an asking price of \$600,000-\$800,000 each.

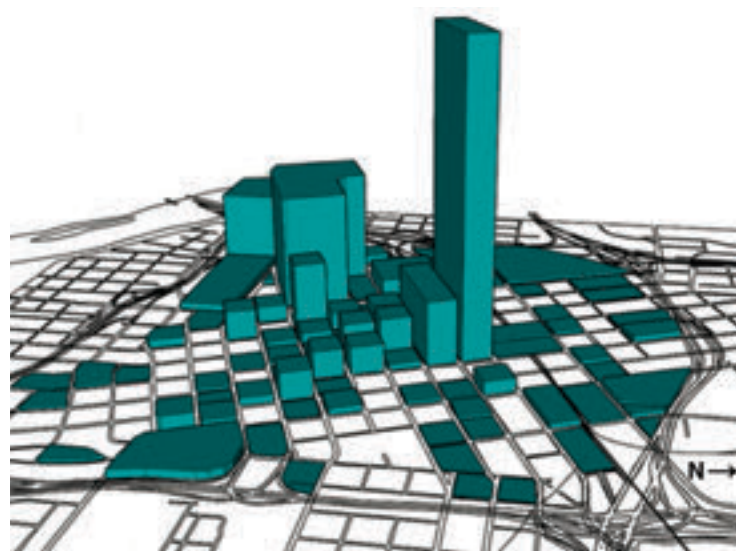


Above and Left: After it became obvious that people did not want to buy first-floor units with no grade separation from the sidewalk, the builders of the 100 Boulder condos enclosed the front patios with 6-foot walls. Marketed as "luxury", the exterior features cheap, non-durable materials. To date, only two of the project's 18 units have sold.

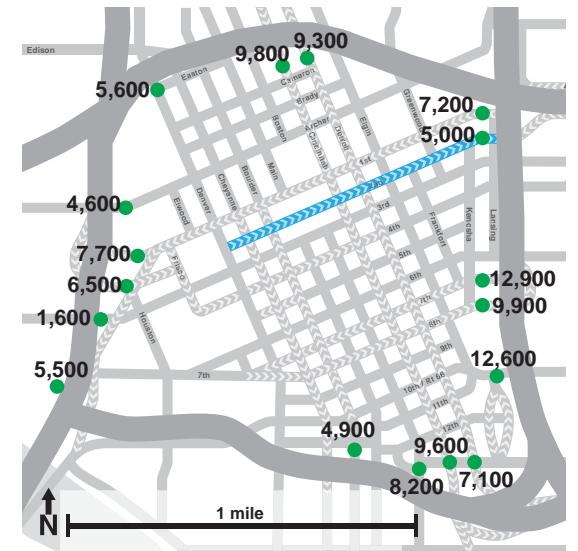




Jobs per block, plan view.
Red: Low, Yellow: Medium, Green: High



Jobs per block, 3D view. Second Street has the highest concentration of jobs, and is readily visible.



2017 Traffic Counts. Second Street in blue.

Employment

As of 2015, the two superblocks along Second Street are a major employment center, and contain roughly 10,000 jobs, accounting for nearly 4 in 10 jobs within all of downtown.¹

The largest industries along the corridor are public administration (18.4%), Finance and Insurance (13.3%), Utilities (11.9%), Management (11.5%), Information (10.5%), and Professional Services (9.5%).

Race

The Second Street corridor’s workforce is remarkably homogenous, with white people accounting for 81.9% of the total group. Black or African American people represent 8.3% of the workforce, while 4.7% identify as American Indian, and a mere 1.9% are Asian.

Educational Attainment

Workers along the corridor have attained more bachelor’s degrees or higher (31.1%) than the rest of downtown (27.5%) or the whole city (18.9%).

Traffic Counts

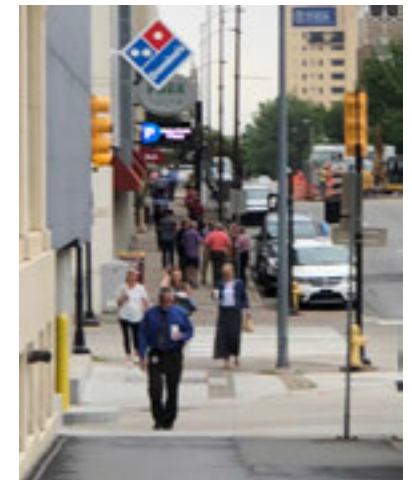
The City of Tulsa traditionally only measures traffic counts at the entrances and exits surrounding downtown. Using their data from 2017, it is clear that downtown streets generally have low traffic counts, in part because the well-established grid pattern of streets disperses vehicular traffic very efficiently.

Residents

The most recent Census data available at the block level is from 2015, a time that pre-dates much of the development that has occurred along the corridor. At the time, it was estimated that two people lived on the blocks abutting Second Street. Since then, more than 200 residential units have been constructed along the corridor.

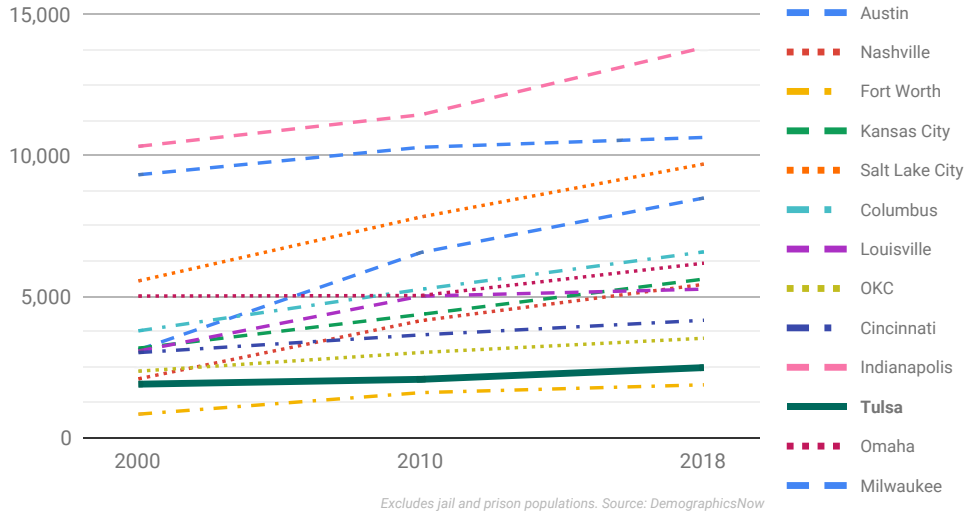


Homogenous crowds flock to Second Street each June to watch Tulsa Tough. Arnie’s Bar is an institution in the Blue Dome District.

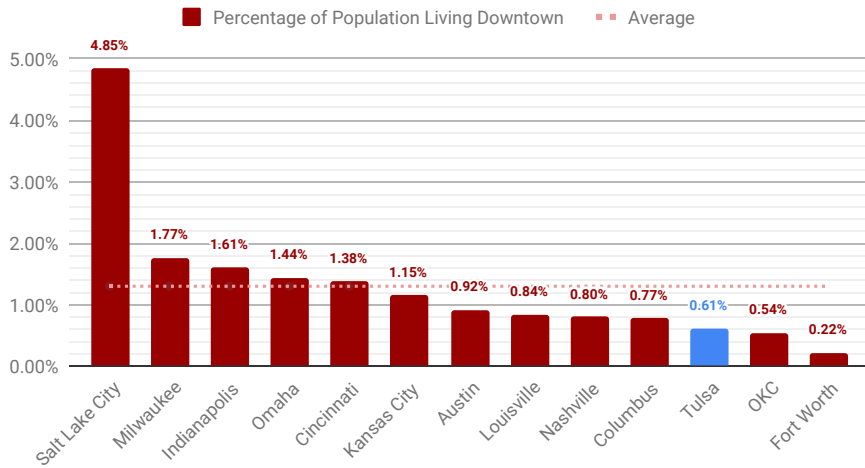


¹ U.S.Census Bureau, Center for Economic Studies, 2015, <http://www.onthemap.ces.census.gov> (accessed Apr. 4, 2019).

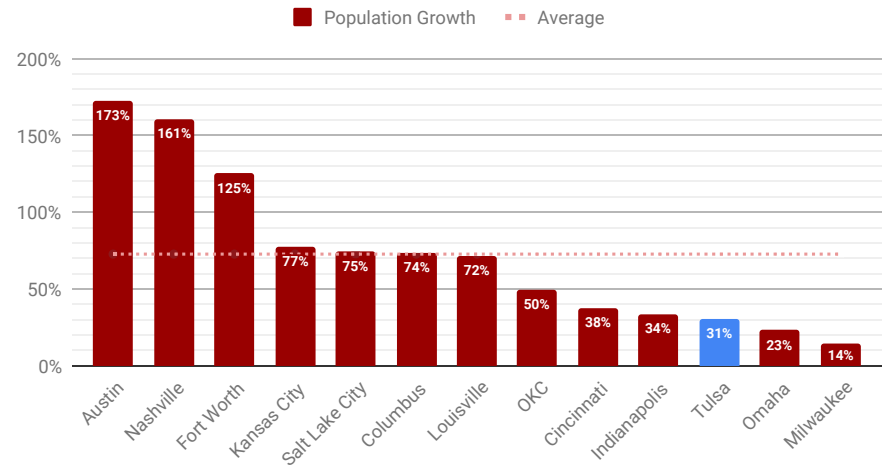
Downtown Population Growth, 2000-2018



Percentage of City Population Living Downtown



Downtown Population Growth Rate, 2000-2018



Peer Comparisons

Population Growth

According to 2018 statistics from DemographicsNow, Tulsa’s downtown population growth has not kept pace with twelve peer cities across the country. Though downtown Tulsa has grown by 31%, peer cities have seen an average growth of 73% in their downtowns in the same period. Additionally, Tulsa’s downtown in 2000 was only slightly more than half (53%) of its peers. In 2018, downtown Tulsa’s population was still 31% smaller than the peer average in the year 2000.

Among the cities examined, Tulsa’s growth rate (31%) has been the third slowest, edging out only Omaha (23%) and Milwaukee (14%), two cities that already had markedly larger downtown populations to begin with. The three peer cities with the largest spikes all had growth of 125% or higher: Austin (173%), Nashville (161%), and Fort Worth (125%).

Median Age

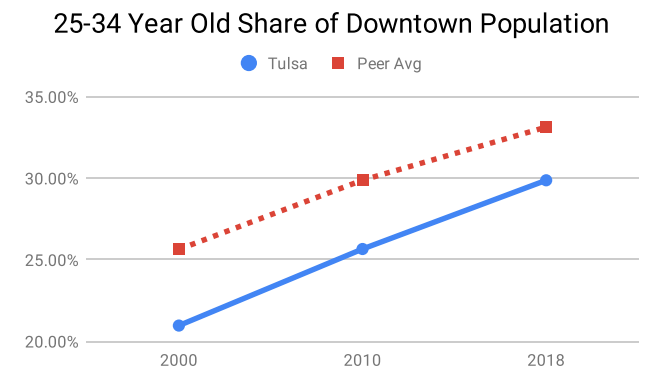
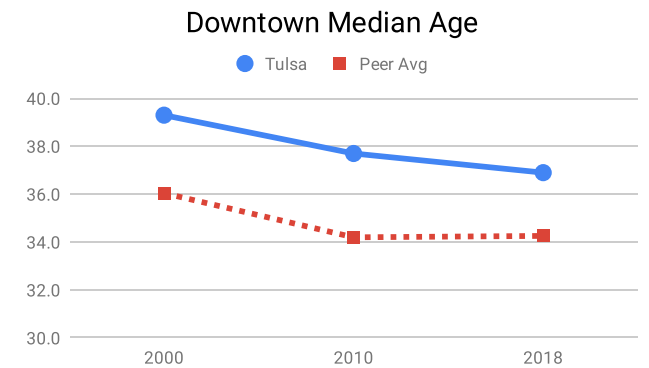
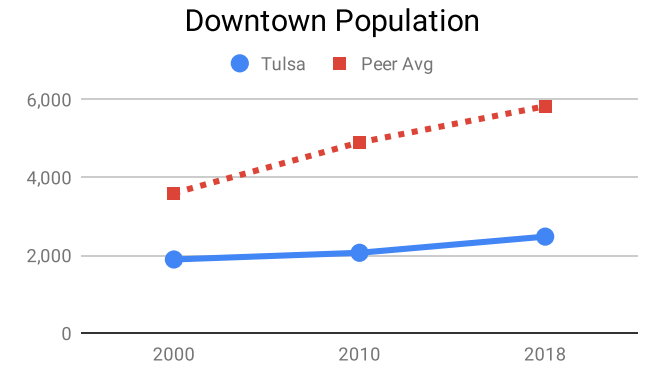
Tulsa’s downtown population has remained older than its peers. In 2000, people living in downtown Tulsa were 3.3 years older than in peer cities; in 2018, Tulsa remains 2.6 years older than peer cities. The trend has shown a decrease in the median age, but the data shows that downtown Tulsa’s age is roughly the same today as its peers were nearly two decades ago.

Young Population

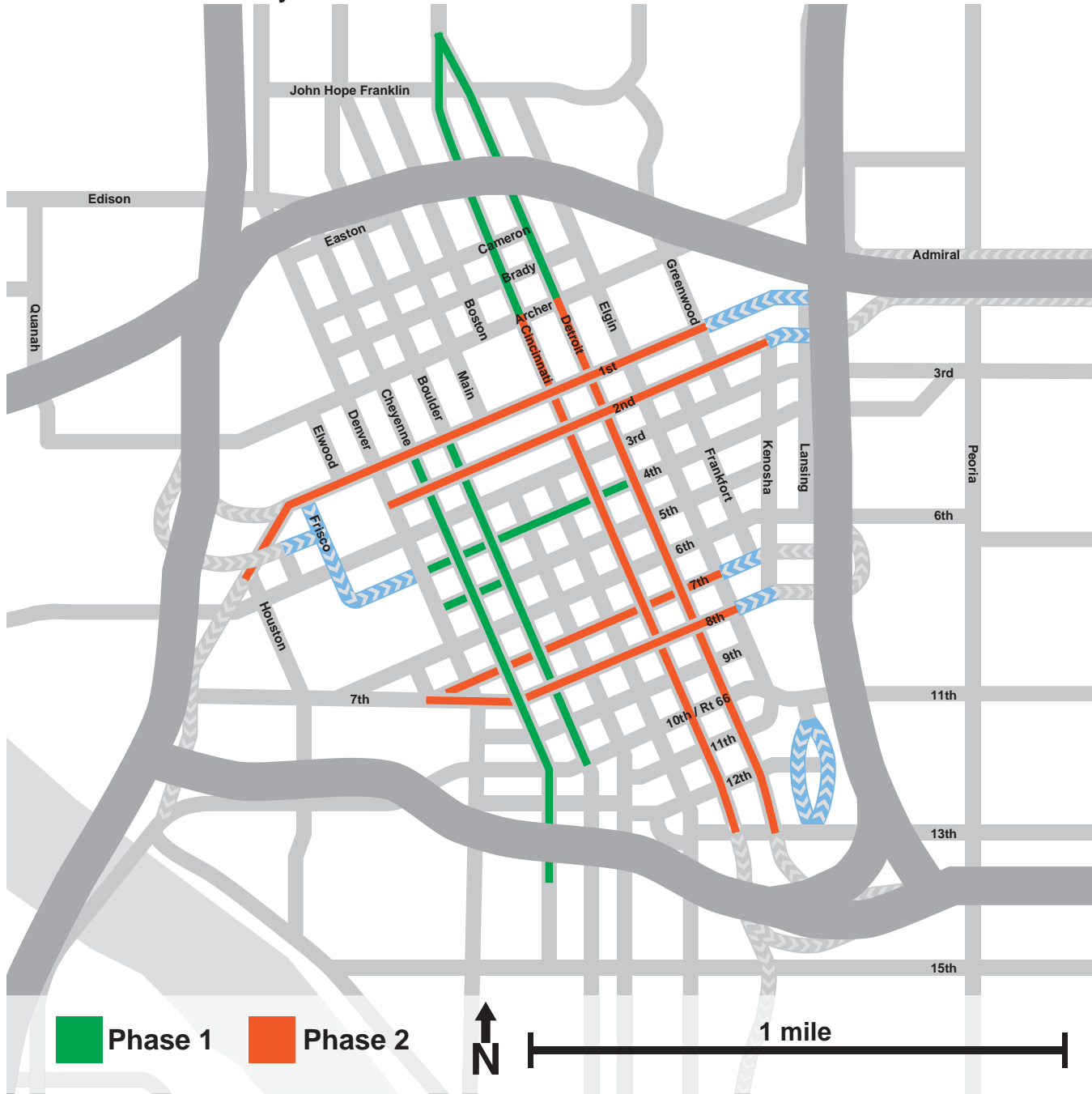
The share of 25-34 year olds, which cities continually seek to attract, has grown in Tulsa from 21% of the downtown population in 2000 to 30% in 2018. As expected this trend is inversely related to the drop in the median age downtown, and is roughly the same percentage seen in peer cities in 2010. Downtown Tulsa is getting younger, but still lags behind peer cities by about ten years, and its population is still very small.

Downtown Share of Total Population

Within the peer group, Tulsa is only ahead of Oklahoma City and Fort Worth in terms of the downtown population compared to the city as a whole. Partly due to its smaller overall size, downtown Salt Lake City’s share is more than 3.5 times the average in the peer group.



Two-Way Street Conversions in the Downtown Area Master Plan



Above: Proposals from the Downtown Area Master Plan highlight Second Street.

Many of the plans conducted for downtown recognize the importance of Second Street as a connector of multiple downtown districts. Even the 2018 Arena District Master Plan, which largely ignores Second Street’s role in connecting the Arena District with the Blue Dome District, contains maps and figures that make the case for Second Street becoming a high priority street for investment and capital projects.

The **Downtown Area Master Plan** provides an enhanced terminating vista for the west end of Second, with a Hall of Fame and restaurant addition to the BOK Center.¹ The plan calls for overhauls of the Williams Green and its staircase, and creating an outdoor performance venue attached to the Performing Arts Center.² It also recommends that Second Street be reverted to two-way traffic.³

The **Downtown Streetscape Plan** includes streetscaping projects for eastern lengths of Second Street.⁴ These projects were completed at least five years ago, but are inadequate, do not address the south side of Second between Denver and Cincinnati, and should be improved upon.

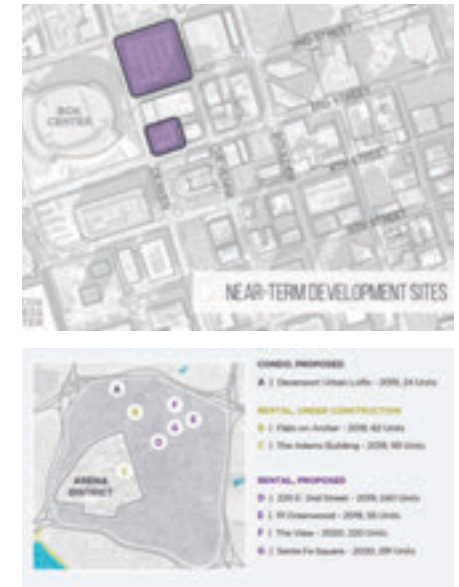
Tulsa’s regional bicycle and pedestrian master plan, dubbed the **GO Plan**, does not identify any bicycle facilities along Second Street,⁵ giving the City a chance to reconfigure the right-of-way for pedestrian activity.

The **Arena District Master Plan** favors Third Street over Second as the primary link to other districts,⁶ but figures and illustrations within the plan make a compelling case for Second by illustrating planned and recently completed projects along Second.⁷ A small amount of streetscaping is proposed for Second Street, between Denver and Cheyenne, and the plan does eventually recognize the importance of Second Street⁸ proposes converting First Street two two-way traffic, which the plan says will, “allow 2nd Streete to develop more fully as a mixed use, multimodal street.”⁹

The **Zoning Code** does not currently include any design standards for downtown, and prohibits overlays from being used in downtown.¹⁰ Design standards have been proposed and are working their way slowly through the approval process, beginning with endorsement from the Downtown Coordinating Council, followed by adoption by the Planning Commission and Tulsa City Council. The proposal includes standards for transparency, sets a maximum build-to zone, requires street-facing entrances, requires parking lots to be located beside or behind buildings, sets a minimum setback for parking lots, and more.

Historically, downtown has been excluded from landscaping standards.¹¹ Additional zoning code changes are nearing adoption, and would apply landscaping standards for downtown parking lots.¹² This should help alleviate some of the issues identified earlier in this document.

Downtown projects that request TIF funds will soon be required to meet basic design standards similar to those proposed in the proposed zoning code amendments.¹³



Illustrations from the Arena District Master Plan make the case for Second Street.

1 Jack Crowley, *Downtown Area Master Plan*, (2010), 32.

2 Ibid., 98-99.

3 Ibid., 22.

4 Howell & VanCuren, Inc., *Downtown Tulsa Streetscape Master Plan*, (2011), 5, 17, 19.

5 INCOG, “Go Plan Proposed Bicycle Facilities,” accessed April 19, 2019, <https://incog.maps.arcgis.com/>

6 MKSK, *Tulsa Arena District Master Plan*, (2018), 11, 24, 25, 64, 120.

7 Ibid., 71, 73, 76.

8 Ibid., 120.

9 Ibid., 122.

10 City of Tulsa, *Zoning Code* (2018), Section 20.030-C, 20-4.

11 Ibid., Section 65.030-B.2., 65-2.

12 Matt Trotter, “Changes Coming to Landscape Requirements in Tulsa Zoning Code,” *Public Radio Tulsa*, April 3, 2019, <https://www.publicradiotulsa.org/post/changes-coming-landscape-requirements-tulsa-zoning-code>.

13 Matt Trotter, “New Tulsa Planning Office Plans to Hit the Ground Running in 2019,” *Public Radio Tulsa*, January 3, 2019, <https://www.publicradiotulsa.org/post/new-tulsa-planning-office-plans-hit-ground-running-2019>.



The Annex development on the PAC lot by Indianapolis-based Flaherty & Collins. The development is currently on hold.



The Courtyard development on the northeast corner of Second and Cincinnati by Southbridge Equities. Designed by Architekton Studio.



Above and Right: Santa Fe Square by developers Nelson+Stowe, on the superblock between 1st, Second, Elgin, and Greenwood.



This corridor has experienced \$150 million in developments in the past five years, and another \$349 million worth are in the works. Developers have added nearly 1 million square feet of office, retail, and residential space, and plan to add another 1.2 million square feet.

Major projects in the planning stages include:

Santa Fe Square, a 600,000 sq ft mixed-use development by Nelson+Stowe that will anchor the Blue Dome District. Thus far, the old Santa Fe Depot has been restored for office space, Hotel Indigo has been completed, and developers are pre-leasing a planned 14-floor office building with 425,000 square feet. Nearly 300 residential units, along with ground-floor retail, additional office space, and a 1,929-space parking garage are set to follow.

The Annex, a mixed-use project by Indianapolis-based Flaherty & Collins that will occupy an entire city block currently used as a surface parking lot on land owned by the Performing Arts Center Trust. The project is set to include 200 luxury apartments, office and retail space, a 636-space parking garage, and a grocery store, which is a major stipulation of the sale of the land. Though the negotiation phase has expired, the City, PAC Trust, and developers are working together to make the project a reality. If built, this would be the first full-size grocery store in downtown Tulsa in decades.

111 Greenwood will be a four-story building with 50 residential units and a small amount of retail on the ground floor positioned along Greenwood between First and Second Streets.

The building at the northeast corner of Second and Cincinnati, formerly home to OTASCO, is set to become **The Courtyard**, featuring ground-floor restaurants and retail, plus a large courtyard where a surface parking lot currently exists, plus a rooftop restaurant/bar concept.

Rumors of a **casino** development by the Muscogee (Creek) Nation on the full block situated between First and Second, and Cheyenne and Denver have been swirling, and the plan is alluded to in the Arena District Master Plan: "...could become a mixed-use entertainment development which requires special permission for development."¹ The plan also recommends that the City require "significant Denver Avenue-fronting retail space as part of a mixed-use entertainment project..."²

The land is currently a surface parking lot owned by the BOK Foundation. If the casino is built, it would be the first in downtown, and its location directly across from the BOK Center could create an interesting synergy of entertainment options.



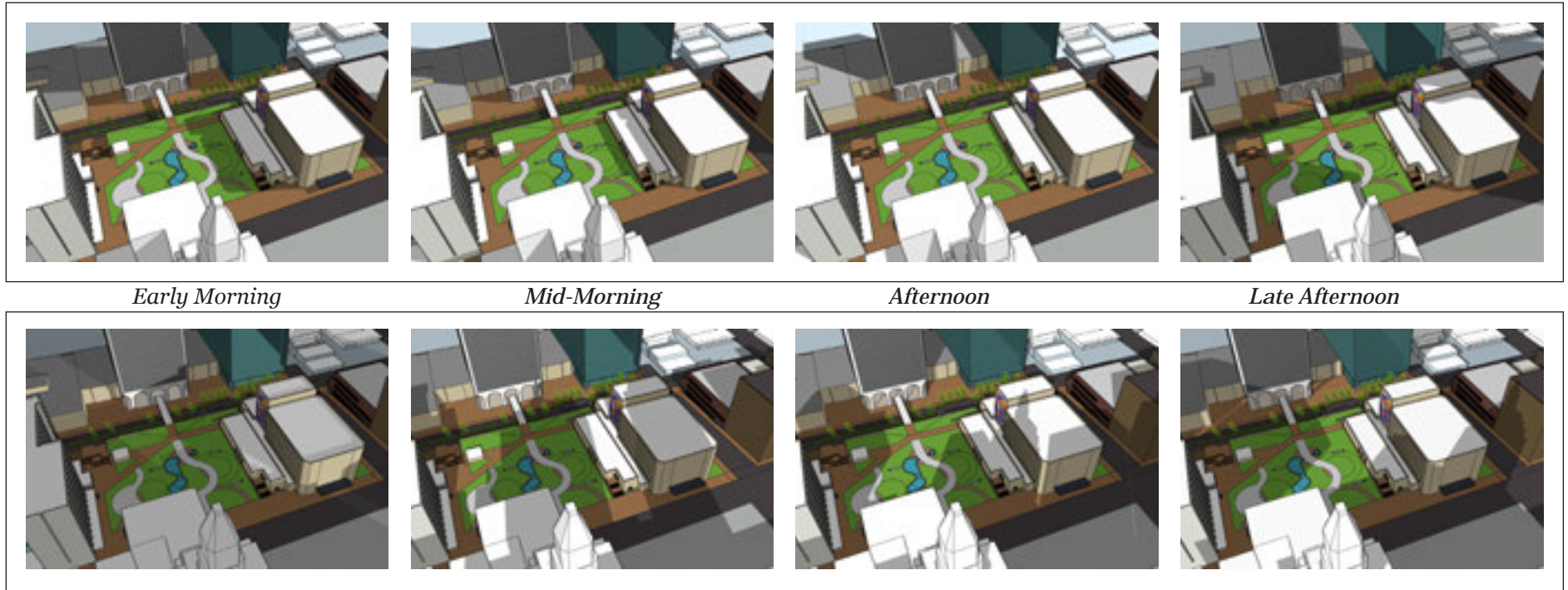
1 Arena District Master Plan, 141.
2 Ibid., 142.

Top Right: An early rendering of 111 Greenwood by Neal Bhow of Hartford Crossing, LLC.

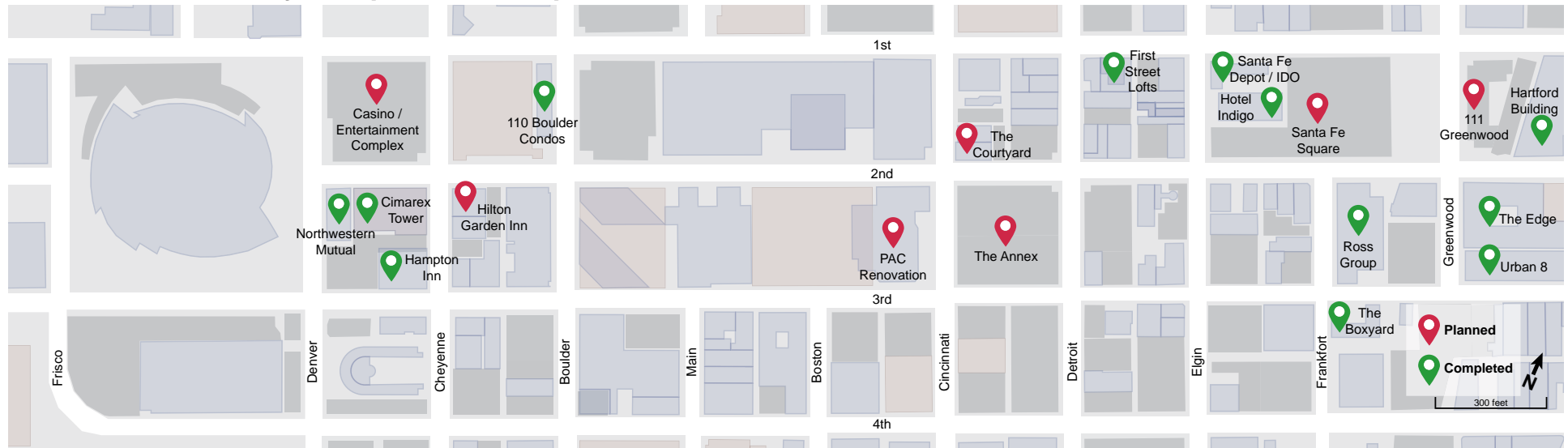
Center Right: Interior passageway at Santa Fe Square by Tulsa developers Nelson+Stowe.

Development Name	Location	Cost	Sq Ft	Status	Parking	Residences
The Courtyard	201 E Second St	\$2,500,000	50,000	Planned		
PAC Lot	2nd & Cincinnati	\$100,000,000	300,000	Planned	636	300
PAC Renovation	3rd & Cincinnati			Planned		
111 Greenwood	111 S Greenwood	\$11,000,000	50,000	Planned		50
Hartford Building	2nd & Hartford	\$7,000,000	74,000	Completed		
The Edge	2nd & Greenwood	\$26,000,000	132,000	Completed		162
Hilton Garden Inn	201 S Cheyenne Ave			Planned		
Ross Group HQ	510 E Second St	\$9,000,000	31,000	Completed		
Cimarex Tower	2nd & Cheyenne	\$50,000,000	500,000	Completed		
Northwestern Mutual	2nd & Denver	\$6,000,000	54,000	Completed		
Hampton Inn	3rd & Cheyenne	\$20,000,000	84,000	Completed		
Santa Fe Square	2nd & Elgin	\$150,415,000	600,000			
- Office Building	1st & Greenwood	\$37,000,000	425,000	Planned		
- Hotel Indigo	2nd & Elgin	\$20,000,000	70,000	Completed		
- IDO	1st & Elgin	\$5,000,000	11,000	Completed		
- Apartments		\$26,190,000	218,250	Planned		291
- Parking Garage	1st & Greenwood	\$48,225,000	578,700	Planned	1929	
Total		\$381,915,000	2,448,950			
Planned		\$238,915,000	1,487,950			
Completed		\$143,000,000	1,598,250			

Shade Studies

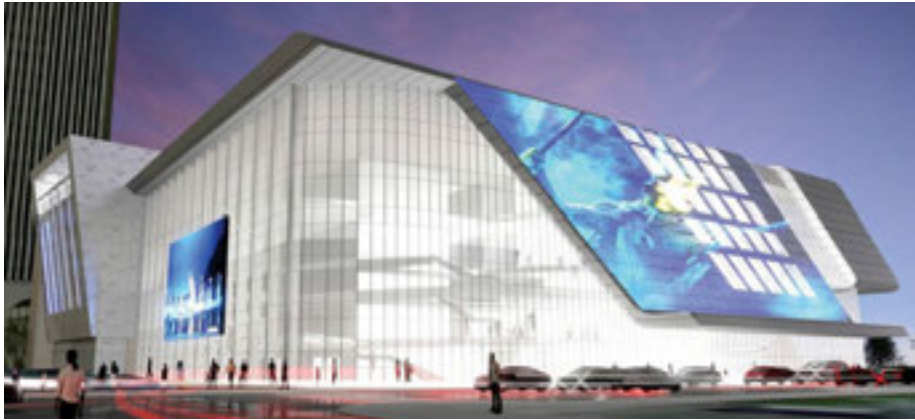


Planned and Recently Completed Developments





Current façade of the Performing Arts Center



Proposed \$320 million Tulsa PAC Renovation. Rendering: Wesley Rutledge, Beck Design

Performing Arts Center Renovation

In September 2018, the Performing Arts Center (PAC) Trust hired a consultant to lead a \$1 million planning effort to address several critical issues facing the relatively young 40-year old PAC. The proposal calls for the closure the Second Street entrance and lobby, and includes an ill-advised scheme of wrapping the exterior in glass, with no apparent means to shade the enclosed spaces from the sun. Heating and cooling costs would increase exponentially, and it would still be nearly impossible to adequately climate control the space.

A shade study (left) illustrates the problem: at the hottest time of the year, no shade from nearby buildings reaches the building; during the winter months, when sunlight is desired to provide passive heating, the building’s south and west facades are bathed in shade.

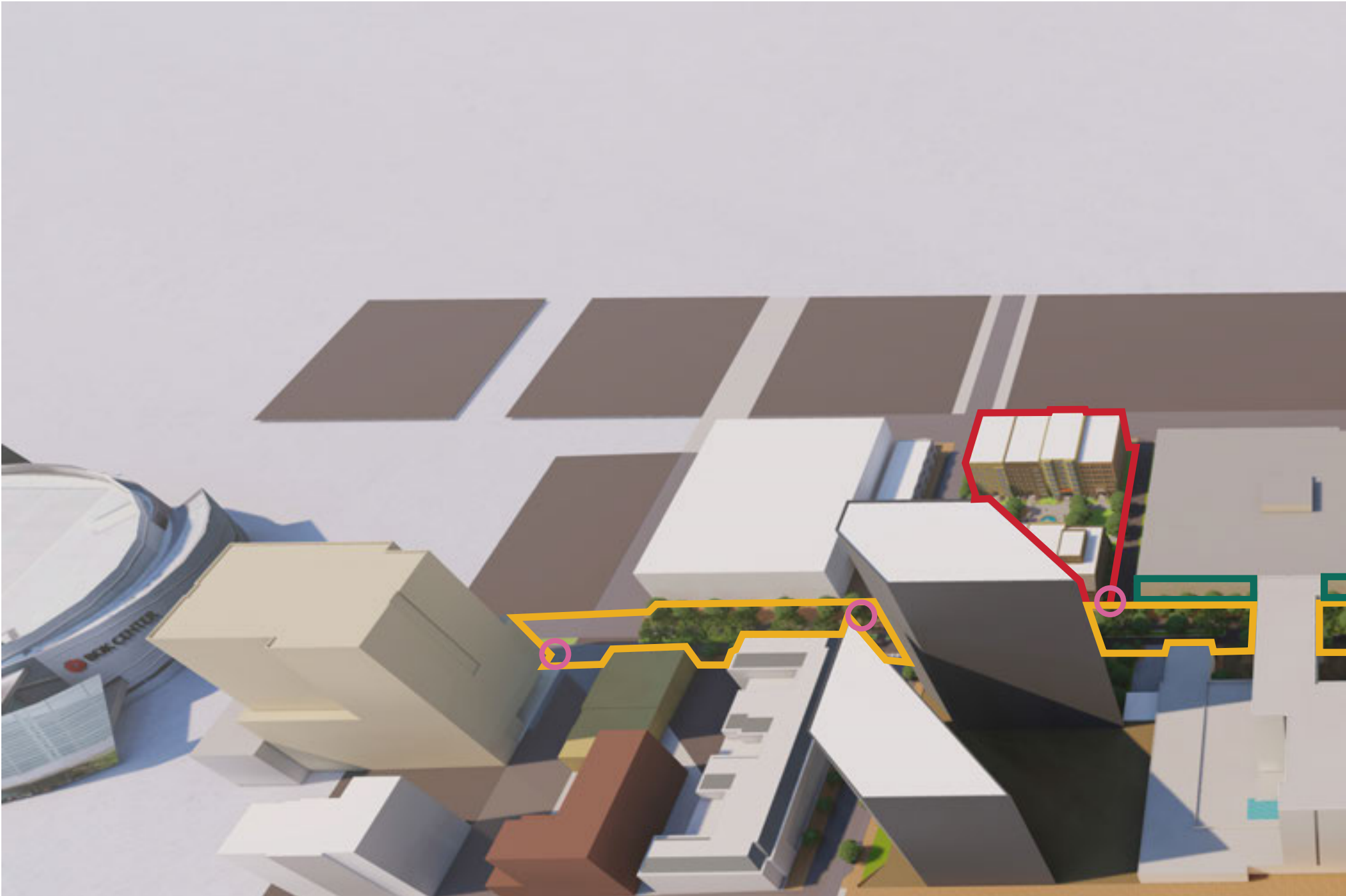
The proposal is estimated to cost \$320 million. When adjusted for inflation, this renovation would cost 40% more than building the BOK Center. The consultant estimated that building a new facility instead of renovating the PAC could reduce that cost by at least \$60 million.¹

A cost comparison of new theater halls in Oklahoma and Texas constructed within the past decade, including one nearing completion in Stillwater by the same firm that designed the PAC proposal, reveals an average inflation-adjusted construction cost of \$76.6 million.



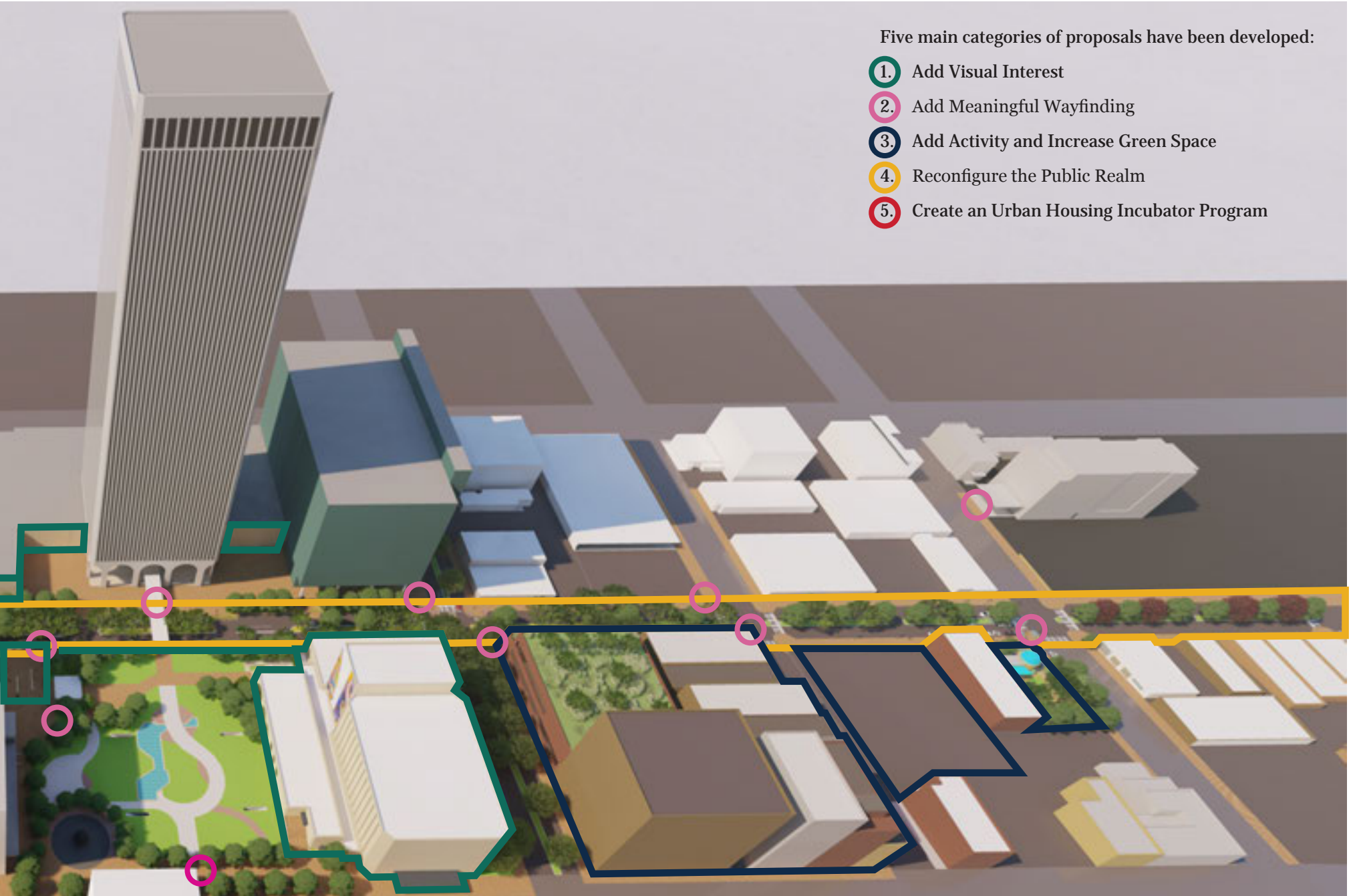
Name	City	State	Year Built	Square Footage	Original Cost	Cost (Inflation-Adjusted)	Cost/Sq Ft (Inf-Adj)	Cost/Seat (Inf-Adj)	Total Capacity	
Lorton Performance Center	Tulsa	OK	2011	77,000	\$34,000,000	\$38,861,554	\$505	\$42,241	920	
McKnight Center	Stillwater	OK	2019	74,000	\$60,000,000	\$60,000,000	\$811	\$54,545	1,300	
Bass Performance Hall	Fort Worth	TX	1998	191,890	\$65,000,000	\$107,000,000	\$558	\$47,303	2,262	
Globe-News Center for the Performing Arts	Amarillo	TX	2006	70,834	\$30,000,000	\$38,010,000	\$537	\$29,238	1,300	
McAllen Performing Arts Center	McAllen	TX	2016	93,471	\$44,900,000	\$56,885,330	\$609	\$31,603	1,800	
Wagner Noël Performing Arts Center	Midland	TX	2011	108,500	\$81,000,000	\$92,405,757	\$852	\$45,788	2,019	
Charles W. Eisemann Center for Performing Arts	Richardson	TX	2002	116,900	\$40,800,000	\$57,594,917	\$493	\$25,518	2,257	
Moody Performance Hall	Dallas	TX	2012	46,655	\$40,800,000	\$45,222,273	\$969	\$60,296	750	
Margot and Bill Winspear Opera House	Dallas	TX	2009	216,000	\$150,000,000	\$178,480,700	\$826	\$77,702	2,297	
Long Center for the Performing Arts	Austin	TX	2008	175,000	\$77,000,000	\$91,647,437	\$524	\$34,312	2,671	
Inflation-Adjusted Costs adjusted to December 2018 figures.						Average	\$76,610,797	\$668	\$44,853	1,758

¹ James D. Watts Jr., “Tulsa PAC unveils new long-range plan for facility improvements”, *Tulsa World*, Apr. 1, 2019.



Five main categories of proposals have been developed:

1. Add Visual Interest
2. Add Meaningful Wayfinding
3. Add Activity and Increase Green Space
4. Reconfigure the Public Realm
5. Create an Urban Housing Incubator Program





Reintroducing life requires a mixture of people coming to an area for varied purposes at various times of the day. The blank walls that are part of the PAC and the South Garage provide an opportunity for the City to add ground-floor retail/restaurant/studio/office space that could attract those groups, and at a minimal cost.

The South Garage has the right ceiling height, depth, fairly level floors, electrical service, good street frontage, appropriate clearspans between interior columns, and it is across the street from the highest concentration of jobs in downtown. It is exactly midway between the BOK Center and Blue Dome, and is sandwiched between the PAC, which hosted 525 events in 2017, and the Hyatt Regency, whose 432 rooms are busy with travelers in town for conferences, work, or special events like Mayfest, Tulsa Tough, and HopJam.

The right mix of retail and services aimed at downtown office workers, tourists, artists rehearsing or performing at the PAC, could provide enough variety and interest to encourage people to come to the area, park in the garage, and stay. Humans are social creatures, and the presence of people is an encouraging sign for those making the ten-minute walk between the Blue Dome and BOK Center.

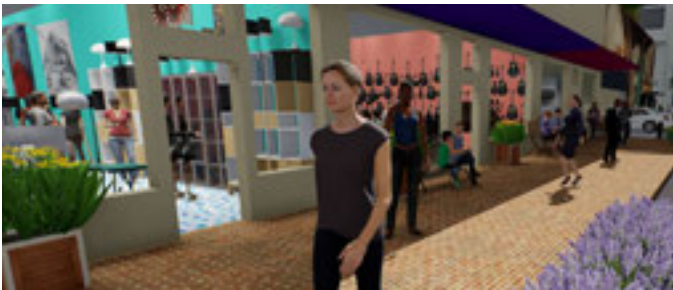
Potential tenants could include dry cleaners, a bakery, a small bodega, sidewalk cafes, takeout lunch spots, or services aimed at making downtown more livable.

An extra benefit of this location is that it is already owned by the City of Tulsa, so there would be no acquisition cost. Within the central section of the garage, it is possible to build out up to 7,653 square feet of leasable space while only sacrificing 19 parking spaces (or 2.5% of its 759 stalls). Building out shell spaces for tenants could range from \$46 to \$70 per square foot according to architect John Griffin of Tulsa-based Selsler Schaefer. This equates to \$352,000-\$536,000.

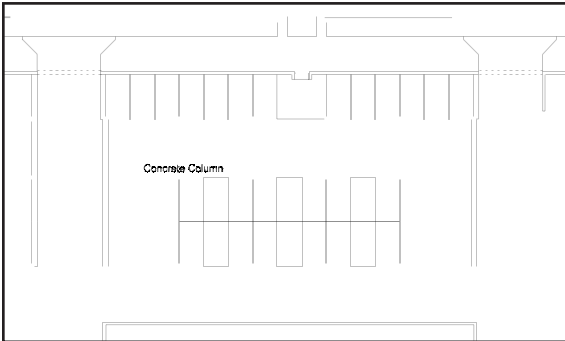
The Tulsa Parking Authority, which oversees the South Garage, has retail components in another garage it manages, and those spaces typically lease for \$10-12 per square foot per month. The Main Park Plaza garage, however, was not designed correctly for retail uses, and has low dropped ceilings. A correctly designed space could command a higher price (local rents are typically in the \$16-21 range). Assuming a 30% overhead costs and using Main Park Plaza's numbers, these retail spaces would net \$642,000-771,000 annually. The market rate would gross \$1.03-\$1.35 million annually. If fully leased from the outset, this retail build-out could pay for itself in as little as seven months under the lowest Main Park Plaza rates, or four months at the low end of the going market rate.

By contrast, according to TPA's annual report, the annual net operating income per parking stall in the South Garage is \$890. The 19 spaces that would be affected by the retail build-out net \$16,910 for the Authority on an annual basis.

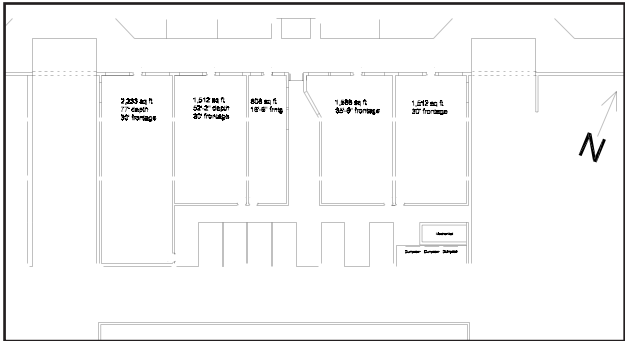
These retail components would create another reason for people to park at the parking garage, potentially increasing both daytime and evening occupancy rates. In essence, it makes financial sense. This same kind of build-out could happen along other sections of blank walls along Second Street, including portions of the PAC and the Williams Resource Center. Replacing surface parking lots with new mixed-use buildings that feature public-oriented ground-floor spaces would help fill in the gaps and eventually create a fully-developed, active sidewalk from the Blue Dome to the BOK Center.



South Garage, Existing Conditions



South Garage, Proposed Retail Build-Out



Square Feet	Build-Out Costs per Square Foot	Total Build-Out Costs	Gross Rate per Square Foot	Minus 30% Overhead	Monthly Net Income	Annual Net Income	Return (months)
7,653	Low Estimate \$46	\$352,038	\$10	\$7.00	\$53,571.00	\$642,852.00	6.57 - 10.00
			\$12	\$8.40	\$64,285.20	\$771,422.40	5.48 - 8.33
	High Estimate \$70	\$535,710	\$16	\$11.20	\$85,713.60	\$1,028,563.20	4.11 - 6.25
			\$21	\$14.70	\$112,499.10	\$1,349,989.20	3.13 - 4.76



Based on the average inflation-adjusted construction costs of new performing arts centers in Oklahoma and Texas within the past decade, the Performing Arts Center Trust could build *three* new performance venues and still renovate the existing structure for the same price of the proposed \$320 million renovation by Beck Design. The Beck proposal includes possibly closing the Second Street PAC entrance and lobby, enlargening the public areas and wrapping the entire facade in glass, a move that could lead to exponential increases in heating and cooling costs.

The PAC, which opened in 1977, has a bit of an identity crisis: it attempts to function as a space for opera, ballet, Broadway shows, symphony, local theater, chamber music, lectures, comedy, and more. Theater spaces simply cannot do all those things well. It would behoove the PAC Trust to build additional venues on land they already own, just across Cincinnati Avenue from the existing PAC.

Building even one additional theater would relieve some of the pressure for the PAC to be everything to everybody. It would allow a proper focus on specialized acoustics and sightlines, and could create real momentum to build a small, arts-focused *Theater Row* anchored by the PAC.

The PAC could remain the home of Broadway shows, opera and ballet, which require large backstage areas for sets and props, while new performance halls and rehearsal spaces could be designed specifically for instrumental and vocal performances. This would please preservationists who wish to retain the legacy of PAC designer Minoru Yamasaki, save the PAC Trust money, eliminate any downtime associated with the proposed renovation, and greatly benefit the performing arts in Tulsa.

The land in question currently exists as a surface parking lot, and the PAC has previously entered into a sales contract with out-of-state developers to build a mixed-use project. The developers requested hefty financial incentives from the City, and negotiations have stalled.

Instead of pursuing the sale and development of the entire block, which has proven to be quite difficult and costly, the PAC Trust should develop the western half of the block (closest to the PAC) into multiple theaters, and build a publicly-accessible green space or park on the roof to draw even more interest and provide a much-needed expansion of downtown green space. Because parking is a priority for the PAC Trustees, a parking structure could be built underneath the new theaters, or within the center of the block then wrapped with development. If the land is sold to a private developer, the PAC Trust will lose the revenue generated by the existing surface lot; however, should the Trust retain ownership of the lot and build a parking structure itself, it would continue to capture that revenue.



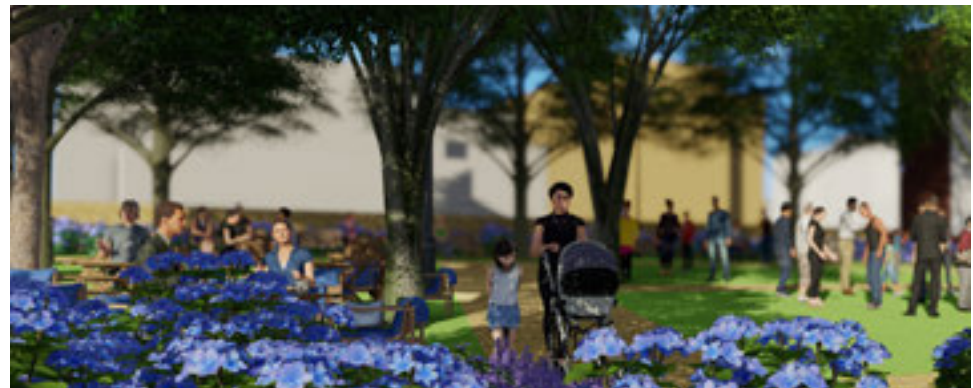
The proposed new music hall on the PAC Trust surface parking lot, named for Robert L. Jeffries, a former violinist and grandfather of the author, would also feature lush rooftop gardens.



The Blue Dome should be a hub of activity for the district that bears its name, and the building needs to be carefully restored. Currently used for office space, the interior could become a beautiful visitor information center, the gateway to all things downtown. The surrounding gravel parking lot should be transformed into a respectable public space befitting the landmark building and urban character of the neighborhood.

The parking lot could become a lush, landscaped space featuring an outdoor stage for musical performances, along with multiple types of moveable seating, artwork, pathways that connect the pocket park to the sidewalk along Elgin Avenue, and dark sky-friendly lighting. The ground slopes up toward the south, creating a natural seating pitch for views of the stage.

As Santa Fe Square develops across the street, the parking lot used by Tulsa Tough organizers as race headquarters will disappear; the Blue Dome Park can help fill the need for such a space. Because of its small size, it would likely be visited by nearby residents in the Blue Dome and East Village areas of downtown, as well as attendees of concerts and other programmed activities.





“Almost nobody travels willingly from sameness to sameness and repetition to repetition, even if the physical effort required is trivial.”

—Jane Jacobs, *The Death and Life of Great American Cities*, p. 169.

Adding retail, restaurants, and services alone will not solve the problem of blank walls that line the street or make the street completely comfortable. Art and landscaping of all kinds and scales must be encouraged along the corridor to reduce the repetition and boring nature of blank walls.

Adding visual interest—whether the art is static or responsive, temporary or long-term, painted or projected—can go a long way in making a blank wall seem more inviting, and in fact, can become popular attractions. Indeed, many European countries have employed 3D and animated projections on cathedrals and important buildings to boost local tourism. These projection shows often incorporate sound, whether music or spoken word, and together tell the stories of their locales.

Performing Arts Center

Because the Performing Arts Center is wrapped in concrete panels, the entire surface could be projection-mapped and turned into a giant work of art on a nightly basis by local artists. The equipment could cost \$300,000 or more, but once set up, the PAC Trust could promote the program to animation and graphic design students at TU, TCC, and ORU. The projections could also display live concerts and shows on the walls facing the Williams Green, offering an opportunity to picnic in the park while watching the Tulsa Symphony Orchestra or Tulsa Opera.

Great care would need to be taken to prevent the commercialization of the space. City ordinances would likely need to be updated to include provisions that prevent buildings from becoming giant, digital billboards. If used judiciously and for the purposes of using art to create community, as illustrated by the scale model of the PAC to the right, the effect could be stunning. Crowds would flock to the area to witness such a spectacle, as nothing quite like it exists in the United States.

Left and right: Art and landscaping could make the street more interesting and comfortable to walk down, and reduce the perceived distance between the BOK Center and Blue Dome. The fly loft of the PAC is more than 100 feet tall and is visible for many blocks, thus is suited for art installations on a massive scale. Lower blank walls closer to the street are better suited for smaller, more human-scaled artworks.

*Left: Bob Dylan and Will Rogers portraits by Tulsa artist John Hammer. <http://www.tulsalifestylepubs.com/2017/09/26/the-pure-intense-color-of-john-hammer/>
Right: “Sky Dance” by C. Finley. <https://www.houstoniamag.com/articles/2018/3/28/houston-largest-mural-ballet-finley-wedge>*





Deco Tulsa Flag artwork by Scott Gaspar, fineartamerica.com/profiles/scott-gaspar.html

Reimagining the Williams Green Staircase

Introducing colorful art to the massive, 52-foot-wide staircase leading from Second Street to the Williams Green could create visual interest and encourage people to ascend the steps. While the ultimate goal would be to create semi-permanent artwork with paint, vinyl, or tile, like the 16th Avenue Tiled Steps in San Francisco, the concept could be easily explored with sidewalk or liquid chalk.

The newly-adopted Tulsa Flag has quickly become a popular symbol for the city, and this staircase is well-suited for such a motif: it is wide, broken up into three sections, and frames an iconic view of the skyscrapers along Boston Avenue. Due to the flag's popularity and the incredible view, this could quickly become a popular spot for residents and visitors to take photos.

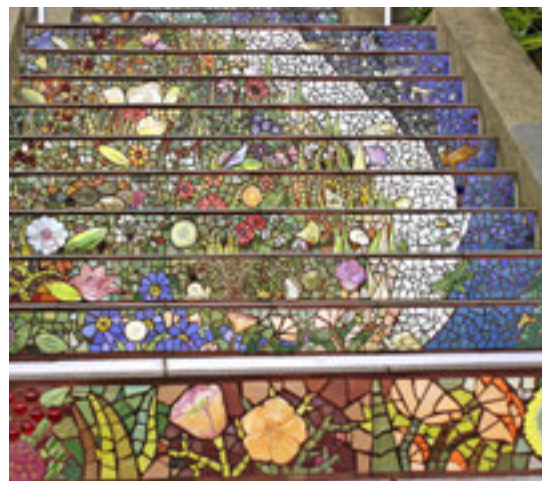
Adding art to the stairs would be a gentle way of letting people know that there is something interesting and beautiful just beyond the stairs, and encourage them to climb the 34 steps.

The PAC could also use the steps to highlight ballet, orchestra, opera, or other performances at the venue by applying vinyl images to the stair fronts.

[Blank Space] Festival

Because of the sheer amount of blank walls along Second Street, a great deal of art is needed to bring more color and appeal to the area. The City, Parking Authority, Performing Arts Center, and Williams should form a partnership to establish and promote an annual [Blank Space] Mural Festival, modeled after the Unexpected Arts Festival in Fort Smith, Arkansas. At the Unexpected, the top mural artists in the world are invited to cover blank walls on historic downtown buildings (see far right). Since its inception in 2015, artists have brightened downtown Fort Smith with 33 murals.¹ The Tulsa festival could be expanded to additional areas within downtown, and to other parking structures owned by the Tulsa Parking Authority.

1 Unexpected Arts Festival. <http://www.unexpectedfs.com>, accessed April 9, 2019.



San Francisco's famed 16th Avenue Steps were tiled by artists Aileen Barr and Colette Crutcher in 2005. Photos: <https://www.aileenbarrtile.com/16thave>



American Heroes by Guido Van Helten. Photo: Daniel Jeffries



American Heroes by Guido Van Helten. Photo: Daniel Jeffries



Universal Chapel by Okuda San Miguel. Photo: Daniel Jeffries



Raptivo Divino en Fort Smith by Jaz & Pastel. Photo: Daniel Jeffries



A Walk [Your City] sign in Raleigh, North Carolina directs pedestrians to a nearby grocery store, a four-minute walk away. Photo: Blue Cross Blue Shield of North Carolina.

Walk [Tulsa]

The original Walk [Your City] wayfinding signs were created in Raleigh, North Carolina in 2012, and have been replicated in cities across the United States in an effort to get people walking again. The signs are simpler and easier to understand than the existing wayfinding signs in downtown Tulsa. These signs simply indicate the direction and time it takes to walk or bike to nearby destinations.

Temporary corrugated plastic signs are typically deployed to test the effectiveness and usefulness of wayfinding signs in particular locations. If well received, these signs are often replaced with more permanent materials, and are sometimes paid for by corporate sponsors with an interest in health outcomes, like the sign on the left sponsored by Blue Cross Blue Shield of North Carolina.

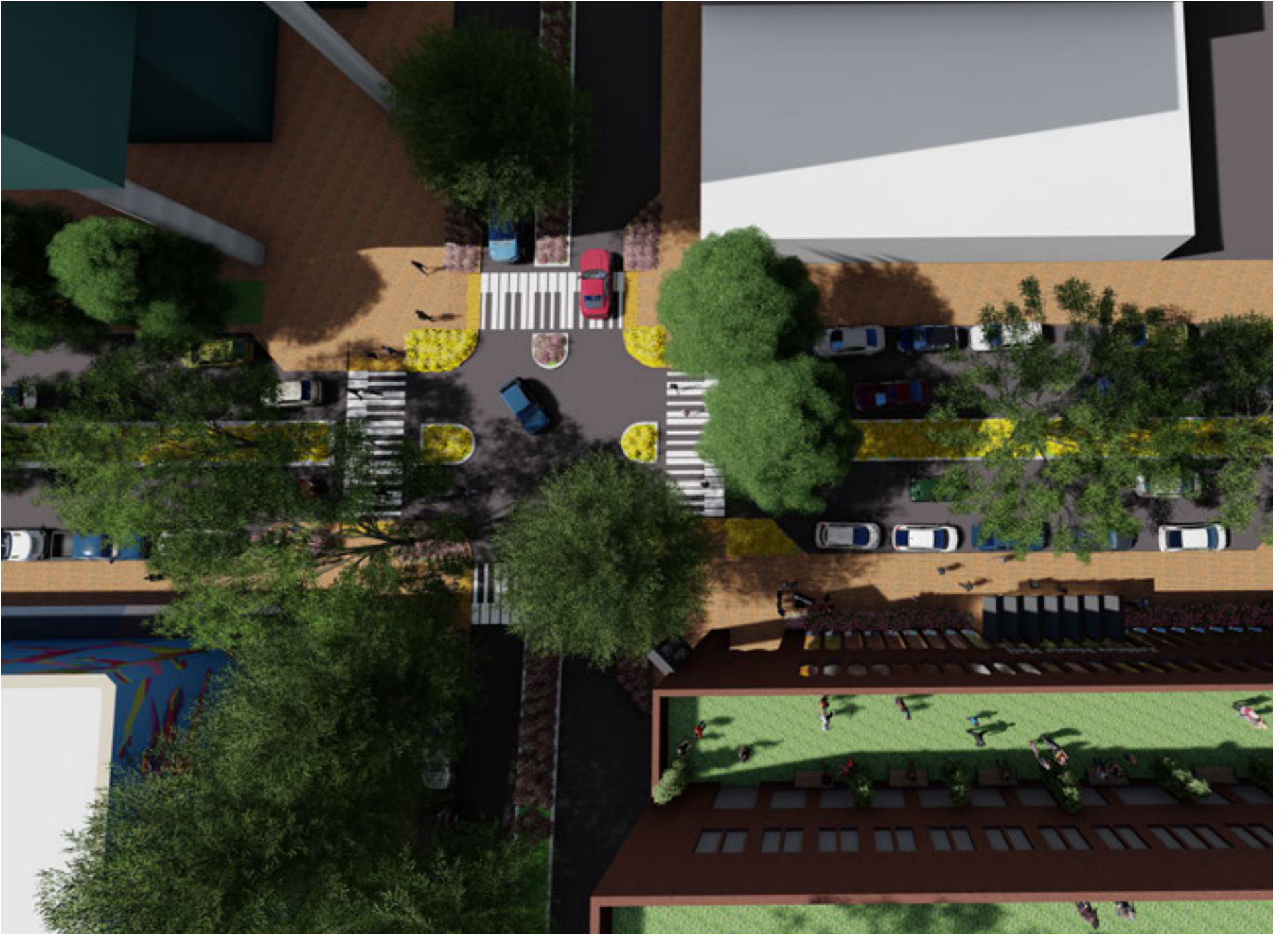
The Walk [Your City] signs could provide relief and motivation to weary pedestrians, and should be placed at multiple locations throughout downtown to encourage people to park once and enjoy downtown on foot.

The deployment of Walk [Tulsa] signage would serve natives and visitors to downtown Tulsa well, alerting pedestrians on Second Street to the proximity of the restaurants and beauty of the Art Deco skyscrapers on Boston Avenue, to the tranquility of the park just 20 feet above them, to the BOK Center, the Blue Dome, or even to the Center of the Universe and Arts District.

The City should pursue a partnership with the Tulsa Health Department to deploy similar signs in neighborhoods outside of downtown to encourage people to walk to school, grocery stores, parks, and libraries, and measure whether the signs changed people's behaviors.

All photos on this page are from Walk [Your City] except top-left, which was taken by South Miami Rotary Club.





A road diet and other measures would improve the look, feel, and safety of Second Street.

“The first priority of every city should be the physical and psychological safety of people on the street. Hundreds dying on city streets would be classified as a public health crisis in any other field.”

—Janette Sadik-Khan, *Streetfight*, p. 209.

As currently designed, Second Street, like most streets downtown, serve only one user very well: automobile drivers. Other users, including bicyclists, pedestrians, people in wheelchairs, and people riding scooters, have been relegated to second-class citizens in terms of street design. There are short segments along the street where certain pedestrian elements are present, but the full mix of generous sidewalks, active ground floors, street furniture, lighting, and landscaping, is rarely present in the same location.

Second Street should serve more users than drivers looking for a quick way out of downtown.

- It should be a place people want to walk to and stay.
- It should be designed with the safety of vulnerable human beings in mind, safe enough for an eight year old and an eighty year old to cross the street without worry.
- It should support business development through well-designed and maintained sidewalks, and traffic moving slowly enough to see the businesses along the sidewalks.

The following projects would vastly improve the appeal, safety, comfort, and economic productivity of Second Street and should be implemented:

- Restore two-way traffic
- Reduce the widths of travel lanes
- Reduce the number of travel lanes to three—one travel lane in each direction, with a center median
- Reinstate curbside parking along both sides of the street, initiate demand-based, dynamic pricing for that parking, and create a Parking Benefit District to return the parking revenue back to the area to be used for landscaping, benches, and other enhancements.¹
- Reduce curb radii to slow turning cars and protect pedestrians
- Build bump-outs at intersections
- Eliminate non-alleyway curb cuts and promote policies that require all driveways and loading docks to connect to

¹ Donald Shoup, *The High Cost of Free Parking*, (Chicago: American Planning Association, 2011), 397-403.



alleyways, not to the street face. Alleyways should be the only type of curb cuts in walkable, urban areas.

- Introduce more mid-block crossings along superblocks
- Plant trees, shrubs, and flowers to provide shade, beauty, traffic calming, and heat island reduction
- Where practical, widen sidewalks
- Install comfortable benches and chairs with backs and armrests for people to sit
- Adopt zoning amendments including the proposed downtown design standards that require street-facing entrances and minimum transparency, and the landscape ordinance which would remove exemptions for downtown landscaping of parking lots
- Adopt NACTO's urban street design guidelines for all downtown streets
- Replace traffic signals with stop signs throughout downtown. Traffic counts on most downtown streets are low enough to warrant this change
- Implement Leading Pedestrian Intervals at any intersections where traffic signals remain, giving pedestrians a 5-10 second headstart
- Re-design all ramps and crosswalks that pose safety and accessibility problems



“Cities can never succeed in transforming their streets if they never try. There is no courage, no achievement, and no triumph in avoiding the attempt.”

—Janette Sadik-Khan, *Streetfight*, p. 107.

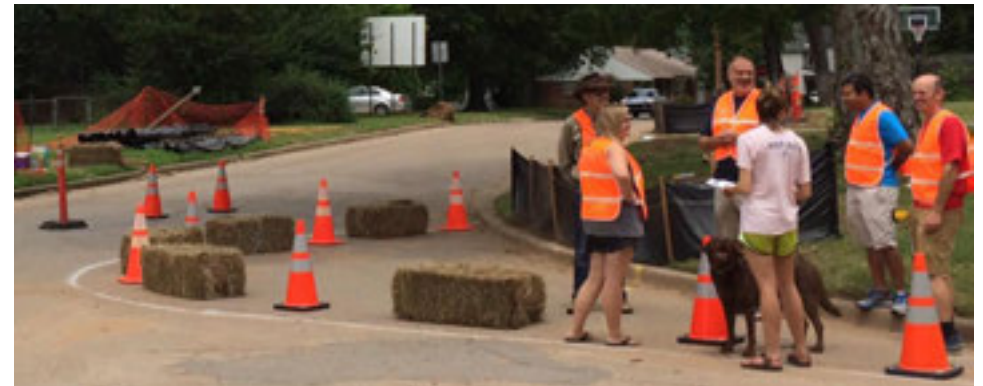
These long-term projects will take substantial investment, but they can be tested fairly cheaply. Borrowing a page from the tactical urbanism projects employed by many cities, the City of Tulsa should experiment with inexpensive, temporary design interventions along Second Street.

In fact, the City of Tulsa’s Bicycle/Pedestrian Advisory Committee (BPAC) has already undertaken some tactical urbanism projects to test the effects of narrowing traffic lanes and reducing curb radii on residential streets in Tulsa.¹ Using simple materials such as hay bales and traffic cones, BPAC implemented a traffic calming project in June 2017, and another project in September 2017 involved painting lane stripes and the speed limit on the roadway.² During the April 2017 Strong Towns Summit, attendees deployed colorful traffic cones to reduce lane widths on Archer Street in downtown Tulsa.³

Such efforts are inexpensive and provide an opportunity for the City to make data-driven decisions. By testing factors such as incidents of speeding, vehicular, bicycle, and pedestrian counts, as well as collisions and collision severity before, during, and after implementing these tactical projects, City leaders can make informed decisions about what effects such interventions could have on the street. The City has the ability to conduct such studies each time it closes a lane or street for a road construction project, yet no such studies have been undertaken.

In New York City, the Department of Transportation conducted similar temporary, low-cost experiments involving beach chairs and planters that eventually led to the permanent expansion of the pedestrian zones at Times Square and many other areas throughout the city.⁴

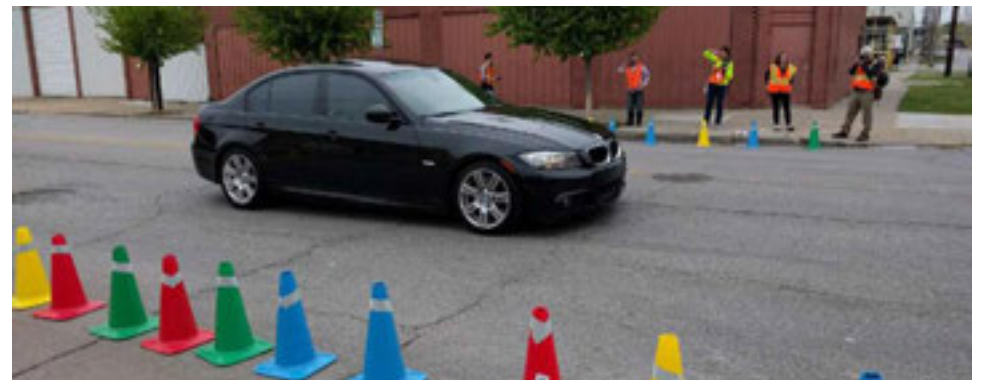
The City of Tulsa should request that BPAC and relevant City departments conduct similar road diet experiments throughout downtown.



Members of BPAC, City Councilor Ben Kimbro, and a resident talk about traffic calming methods during a traffic calming experiment at 41st Place and Saint Louis Avenue. Photo: Sarah Kobos



BPAC painted lane markings and the speed limit on an overly-wide street in the Maple Ridge neighborhood in an effort to slow traffic in the area. Photo: BPAC



Attendees of the Strong Towns Summit used colorful cones to reduce the width of travel lanes along Archer Street in downtown Tulsa’s Arts District. Photo: Nimish Dharmadhikari

1 Bicycle-Pedestrian Advisory Committee, BPAC Traffic Calming Test Project, <https://www.facebook.com/events/322147131551813/>. Accessed March 19, 2019.

2 <https://www.facebook.com/Tulsa-Bicycle-Pedestrian-Advisory-Committee-574345942731932/>. Accessed Mar. 19, 2019.

3 Marielle Brown, “These Resources Will Help You Host a Pop-Up Traffic Calming Demonstration in Your Town,” Strong Towns, <https://www.strongtowns.org/journal/2017/4/10/use-these-resources-to-host-a-pop-up-traffic-calming-demonstration>, April 11, 2017. Accessed Feb. 27, 2019.

4 Janette Sadik-Khan, *Streetfight: Handbook for an Urban Revolution*, (New York: Viking, 2016), 92-107.



Tulsa is has the dubious honor of winning the first-ever Golden Crater Award from Streetsblog in 2013,¹ and it is time to put all those surface parking lots to better use. The City of Tulsa, alone or in tandem with a nonprofit entity, can and should consult and work with the nonprofit Incremental Development Alliance and affordable construction expert R. John Anderson of Anderson|Kim to understand and address local barriers to affordable, incremental housing construction, develop training materials, and then:

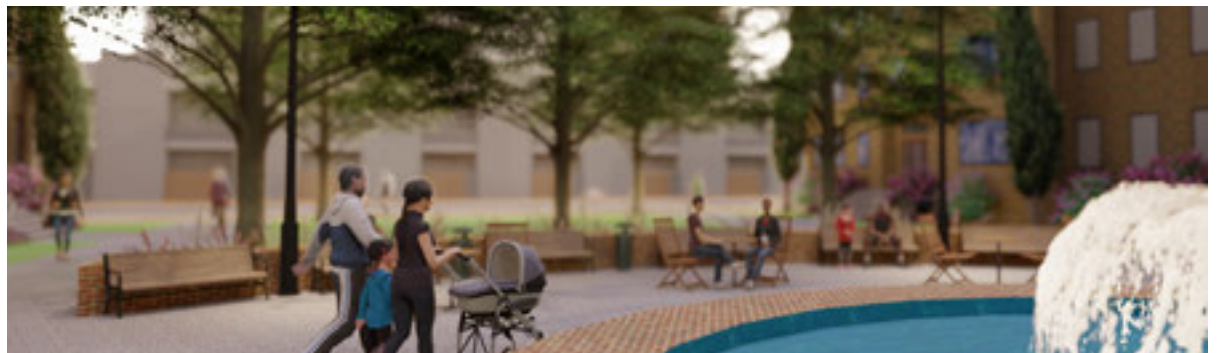
1. Develop a Land Bank
2. Purchase surface parking lots in downtown and adjacent neighborhoods
3. Re-plat the large lots into small, traditional, 50-foot-wide parcels
4. Sell the small parcels to local developers on the condition that they participate in an urban housing incubator and training program

Proceeds from the sales of the lots can be used to purchase additional housing incubator sites, to construct publicly-owned housing, to enhance the streetscapes surrounding each incubator site, to develop an Urban Housing Pattern Book, or to provide additional training for interested, local developers.

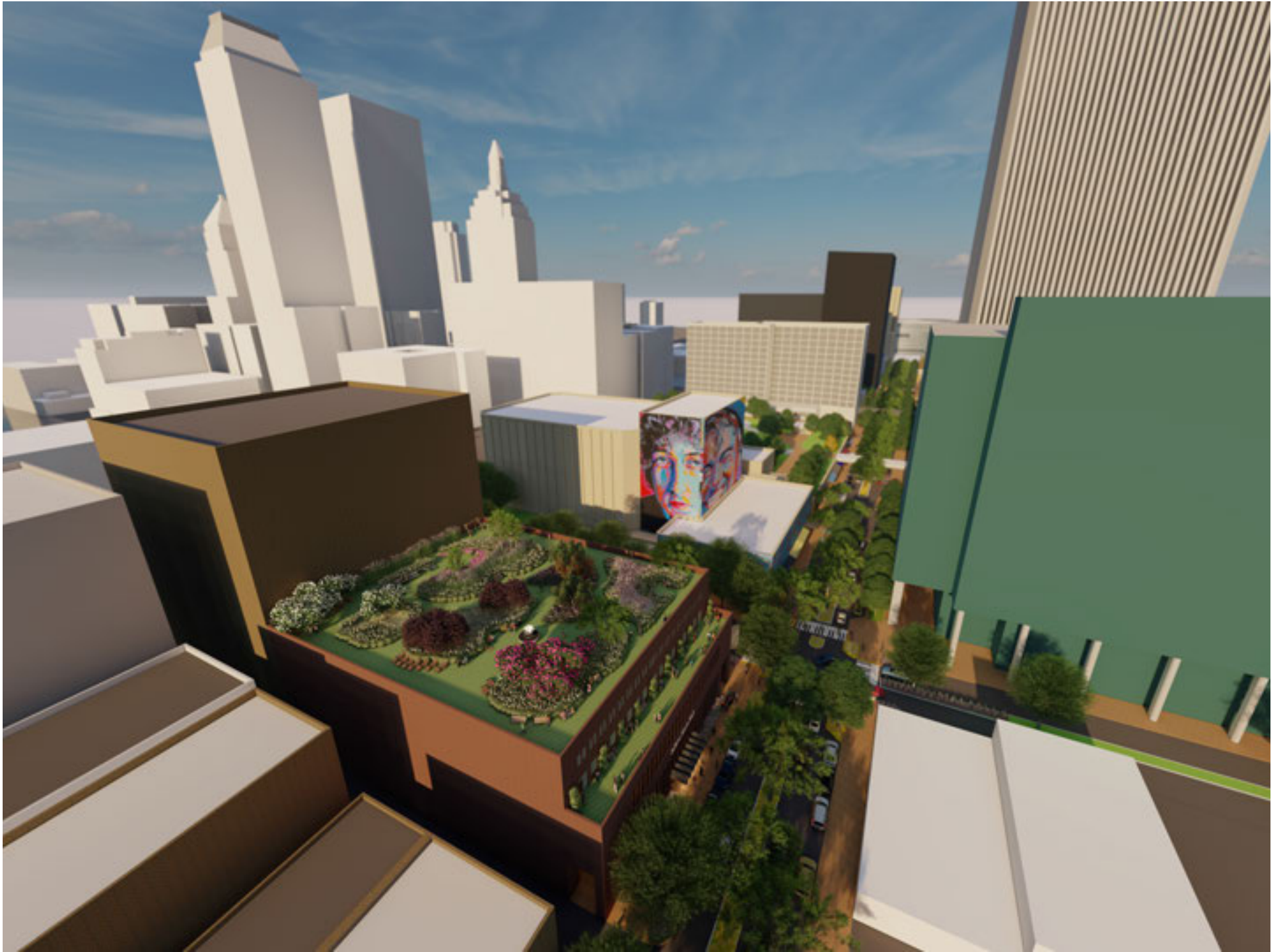
It is imperative that these incubators build a foundation of knowledge of traditional building methods and styles among local builders, developers, carpenters, masons, framers, contractors, roofers, tilers, etc., allowing them firsthand to see what works, what does not work, and why.

The City should also work form a partnership with Tulsa Technology Center and other vocational schools to expand class offerings in construction trades, increasing the skill sets of local builders. Over time, this knowledge and hands-on experience can lead to greater numbers of affordable housing units across the city.

¹ Angie Schmitt, "In a landslide, Tulsa wins the Parking Madness 'Golden Crater' Award", *Streetsblog USA*, (2013), <https://usa.streetsblog.org/2013/04/11/in-a-landslide-tulsa-wins-the-parking-madness-golden-crater-award/>, accessed April 24, 2019.



Housing incubators would teach local developers how to properly build traditional urban residences. This example would transform the Williams Resource Center surface parking lot into eight small lots with an intimate, central courtyard, and grade separation between the sidewalk and first floor of housing units. It would be located across from the 100 Boulder condos, which were not designed appropriately. Learning from these mistakes will improve housing options in Tulsa.



Reintroducing vitality to Second Street, as with much of downtown Tulsa, will take a lot of time, care, and effort on behalf of city leaders, planners, local developers, and citizens to achieve. It will require flexibility, a willingness to try new things, sometimes a willingness to try old things again, and the understanding that in order to achieve any collective goals, we must be willing to work together and treat each other with respect as we re-learn how to build our city.

Tulsa may have been practically built overnight, but the destruction of its urban core at the hands of Urban Renewal and the prevailing city planning wisdom of the time has been both slow and rapid, gradual and dramatic, over the past 50 years, and it will take time to re-learn how to design and build things the way humans have been building cities for millennia.

We must reckon with our past in a thoughtful way, and take direction from the lessons our own history provides. Cities around the world are urbanizing, creating beautiful, comfortable, interesting, exciting places for people—not cars—and people are flocking to those cities in ever-increasing numbers.

If Tulsa is to keep up, it must change the way it develops. It must put people first in *every* decision it makes, and focus on building a quality of life so high that it does not need financial incentives for companies or people to relocate here. Build truly world-class neighborhoods, parks, schools, and healthcare for all our citizens, and the world will take note.

Let's get to work.



Deco Tulsa Flag artwork by Scott Gaspar,
<http://fineartamerica.com/profiles/scott-gaspar.html>





- Bashaw, Frederick J. "The Dynamic City." Internet Archive. 1956. https://archive.org/details/0524_Dynamic_American_City_The.
- Brown, Marielle. "These Resources Will Help You Host a Pop-Up Traffic Calming Demonstration in Your Town." Strong Towns. April 11, 2017. <https://www.strongtowns.org/journal/2017/4/10/use-these-resources-to-host-a-pop-up-traffic-calming-demonstration> (accessed February 27, 2019).
- City of Tulsa. "Zoning Code." 2018, Section 20.030-C, 20-4.
- Crowley, Jack. "Downtown Area Master Plan." 2010.
- Demographics Now. 2018. <http://db.tulsalibrary.org:2341/dnow/?p=DNOW&u=tulsa> (accessed April 7, 2019).
- Howell & VanCuren, Inc. "Downtown Tulsa Streetscape Master Plan." 2011.
- INCOG. Go Plan Proposed Bicycle Facilities. July 30, 2018. <https://incog.maps.arcgis.com/home/item.html?id=bc8b7363bf814d87b69196b6dd5ee373> (accessed April 19, 2019).
- . Traffic Count Map. August 20, 2018. <https://www.arcgis.com/home/item.html?id=710c9600be594232870b64f1ed4d11e7> (accessed November 05, 2018).
- Jacobs, Jane. *The Death and Life of Great American Cities*, 1993 ed. New York: Random House, 1993.
- Miller, Douglas. *4th & Boston: Heart of the Magic Empire*. Tulsa: Müllerhaus Legacy, 2016.
- Miller, Douglas, and John Hamill. *Seat of Power: Tulsa's Arduous Pursuit of Governance & the House Strong Enough to Hold It*. Tulsa: Müllerhaus Legacy, 2017.
- MKSK. "Tulsa Arena District Master Plan." 2019.
- Neal, Ken. "One-Way Streets' Foes See No Gain." *Tulsa World*, March 6, 1960.
- Peterson, Althea. "City erects new signs." *Tulsa World*, September 30, 2008.
- Sadik-Khan, Janette. *Streetfight: Handbook for an Urban Revolution*. New York: Viking, 2016.
- Schmitt, Angie. "In a landslide, Tulsa wins the Parking Madness 'Golden Crater' Award." *Streetsblog USA*. April 11, 2013. <https://usa.streetsblog.org/2013/04/11/in-a-landslide-tulsa-wins-the-parking-madness-golden-crater-award/> (accessed April 20, 2019).
- Shoup, Donald. *The High Cost of Free Parking*. Chicago: American Planning Association, 2011.
- Speck & Associates, and Nelson\Nygaard Consulting Associates. "Tulsa, Oklahoma Downtown Walkability Analysis." 2017.
- Transportation Research Board. *Highway Capacity Manual*. National Research Council, 2000.
- Trotter, Matt. New Tulsa Planning Office Plans to Hit the Ground Running in 2019. January 3, 2019. <https://www.publicradiotulsa.org/post/new-tulsa-planning-office-plans-hit-ground-running-2019> (accessed January 3, 2019).
- Tulsa Tribune. "Merchants Eye One-Way Survey." February 7, 1958.
- Tulsa Tribune. "More Streets Join One-Way Plan Monday." August 24, 1949.
- TulsaNow Forum. Downtown Wayfinding System. August 22, 2008. <http://www.tulsanow.org/forum/index.php?topic=11067.0> (accessed April 9, 2019).
- U.S. Census Bureau, Center for Economic Studies. *On The Map*. 2015. <http://www.onthemap.ces.census.gov> (accessed April 4, 2019).
- Walker Parking Consultants. "Parking System Planning and Financial Study for Tulsa Parking Authority." 2015.
- Walsh, Travis. "Commission Stands by 1-Way Streets but Listens to Opponents' Protests." *Tulsa World*, February 8, 1958.
- . "Merchants and Church Win Delay on One-Way Streets." *Tulsa World*, October 6, 1957.
- Watts, Jr., James D. "Tulsa PAC unveils new long-range plan for facility improvements." *Tulsa World*, April 1, 2019.



