

CONNECT KANSAS CITY

SEPTEMBER 2020

SOM



HR&A

**Fellow Kansas Citians,**

Our city was built at a crossroads; first at the confluence of the Kansas and Missouri Rivers, then as the preeminent gateway of the Oregon, California and Santa Fe trails, followed by the transcontinental railroad and eventually the interstate highway system. As the region, states and country seek to realign to the next shift in transportation technologies and infrastructure investments, our two Kansas Cities are again pointed towards one another. Just as a rising tide lifts all boats, a new vision for an aerial connection between these two downtowns will lift us all above the physical, psychological and even political barriers that too often divide us.

An aerial lift is a clear and permanent public investment that like the streetcar starter line would draw significant economic development. As a people mover, it would serve an immediate environmental benefit pulling cars off the road and creating greater pedestrian and bicycle connectivity. With foresight, a new form of regenerative infill development could realize the diverse, mixed-income and inclusive community that our region has been crying out for. The benefits of such a connection will expand access to housing, jobs, entertainment and services while transforming our own understanding of a shared “Downtown”.

In doing so, such a strategic move will not only unlock currently pent up economic development opportunities, particularly in the West Bottoms and Downtown Kansas City, Kansas, but connect the region’s Central Business District to greater affordability options. This will immediately expand our access to a more diverse mix of experiences, land uses, building typologies and demographics that together can chart a more equitable future.

In the following pages, one of the most reknown international design firms, Skidmore, Owings & Merrill (SOM) in collaboration with the nation’s leading economic development advisory, HR&A Advisors, Inc, have collaborated to present the historical, economic and social justifications for a new aerial lift between Downtown Kansas City, Kansas (KCK) and Downtown Kansas City, Missouri (KCMO). The intent of this document is to set a bold vision for our future connectivity that both sparks the imagination of and elevates the public discourse around this new, regional mode of transportation.

The hope is that this dialogue of discovery will galvanize a strong and broad coalition of support to further study the feasibility and ultimately realize this truly dynamic bi-State connector.



**Gunnar Hand, AICP**

Director, Planning + Urban Design

Unified Government of Wyandotte County and Kansas City, Kansas



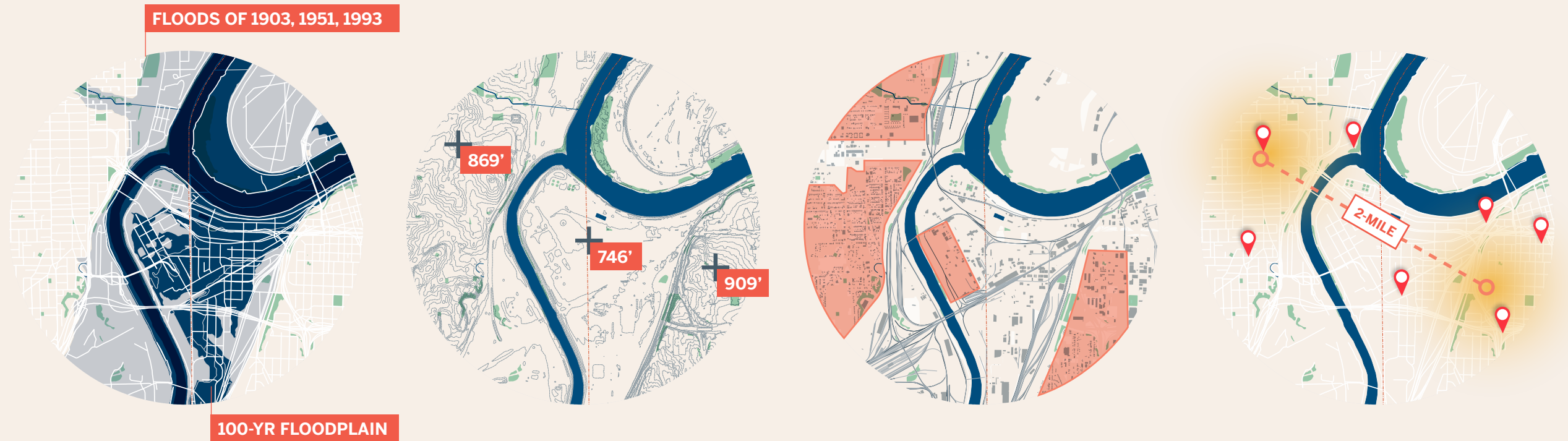
## KANSAS CITIES

The downtowns of Kansas City, Missouri and Kansas City, Kansas face-off with one another atop the bluffs overlooking the confluence of the Kansas and Missouri Rivers. Their destinies historically tied together first by ferry, then railroad, streetcar, and most recently automobile viaduct. While divided by a river and a political boundary, the metropolitan region's two regional centers have always been linked by strategic transportation investments, but they have also never been so far apart as they are now.

A mere two miles from one another, the two Downtowns have seen their common economic and cultural bonds weaken over the past few generations. The unique geographic and topographical conditions between them serve to only exacerbate these social and psychological barriers. While a relatively short distance apart, there are a myriad of issues that have eroded their connectivity from the predominantly industrial uses in the West Bottoms to longstanding perceptions of safety.

It is these very challenges that make an aerial lift the appropriate intervention to reunite KCMO with KCK, and in doing so provide a significant impetus for broad urban regeneration. An aerial lift will bring both the West Bottoms and Downtown KCK within walking distance of Downtown Kansas City, Missouri and its wealth of cultural attractions, convention center activity, arena events, and jobs. The lift has the potential to not only be a functional commuter mode, but a destination in and of itself for the many convention goers and other visitors. And with arguably the best view of the KC skyline and significantly lower housing costs, Downtown KCK can leverage the success of Downtown Kansas City, Missouri's redevelopment into its own continual renaissance.

## NATURAL + SOCIAL SYSTEMS



### A HISTORY OF FLOODS

Both Kansas Cities have been affected by a history of destructive floods. The West Bottoms has yet to fully recover from the flood of 1951. During this particular flood, the West Bottoms was underwater from bluff to bluff. Stockyards, meat packing plants, and rail service all came to a halt. It wasn't until the Great Flood event of 1993 that both cities realized there was a need to establish an appropriate level of flood protection measures. These very measures recently starting to bear fruit as the redevelopment of the warehouse district picks up steam.

### THE BLUFFS

West Bottoms is situated on two major groups of rocks underlying the bluff; 1. Bedrock-alternating layers of limestone and shale and 2. Loess. The loess cover is over 80' thick and covers the rock ledge on either edges of the river. Each bedrock unit has unique engineering characteristics and therefore must be further evaluated when utilized as foundation supports at steep slopes along road cuts and the foot of the bluffs.

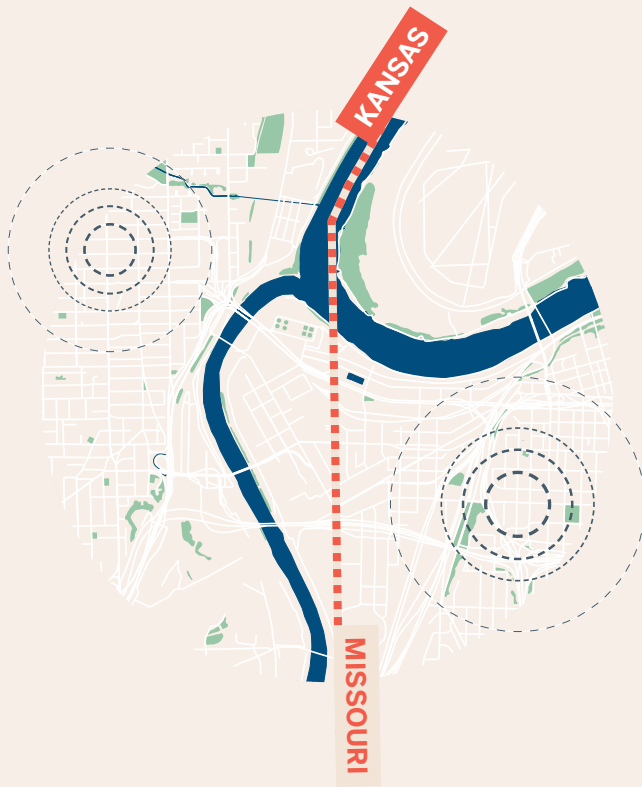
### RECTIFYING REDLINING

During the Great Depression, the US government enacted the Federal Housing Act—assistance for Americans to secure and maintain home mortgages. During this process, realtors and banks developed a series of maps that labeled neighborhoods with grade levels. “Redlining” practices determined “favorable” and “undesirable” neighborhoods. The undesirable neighborhoods were toned in red and were either denied or significantly limited to this capital. Equity investments in formerly redlined neighborhoods, which were mostly low-income, minority communities, can help rectify these past wrongs.

### PROVIDING AN ALTERNATIVE/ SAFER MODE OF TRANSIT

Both Kansas Cities are within the next “silicon prairie”. Today there are various tech start-ups on the periphery of this area, but others could be attracted by such an infrastructure investment with unique place-making opportunities. Providing a new form of regional connector will increase access to the inner ring formerly streetcar suburbs, to jobs and to more equitable forms of transit-oriented development.

## NAVIGATING THE DOWNTOWNS



### A TALE OF TWO CITIES

Kansas City, Kansas has a population of 153,000, which has been steady for over twenty years. On the other hand, Kansas City, Missouri gained 60,000 residents over the last twenty years (491,000 today). An additional 500,000 people are projected to live in the region by 2040. A strategic transportation investment like an lift will enhance land use decisions and help bring both Downtowns back to their historic population highs.

### STREETCAR ERA

Kansas City, Missouri had one of the most extensive streetcar systems in the US—with 32 streetcar lines running on more than 300 miles of track. Then the city shut down its last streetcar route in 1957 due to competition from buses and residents' favoring the automobile. Many of the region's favorite destinations and neighborhoods are the result of transit-oriented development along these historic streetcar routes. An aerial connector between the two downtowns could also be the link between the two transit systems.

### PUBLIC TRANSPORTATION

Presently, public transportation between the two downtowns is limited and infrequent. The premiere line 101 Connex runs along the Viaduct every thirty minutes. Additionally, the 105 and 106 routes provide more indirect routes. While serving a critical service, this bus service cannot induce the types of supportive land uses needed to develop thriving mixed-income communities.

### PEDESTRIAN UN-FRIENDLY

Primarily an industrial area, the West Bottoms valley between the two downtowns is not conducive to a bicycle or pedestrian-friendly environment. While the Riverfront Heritage Trail does exist under the Viaduct, it is hardly known and underutilized. Additionally, the non-existent tree canopy, large industrial parcels, and heavy truck traffic create a harsh environment for walking and biking.

URBAN AERIAL LIFTS OF THE WORLD

WHY AN AERIAL LIFT?

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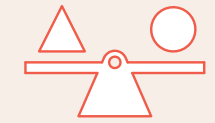


- 1 Riverfront Heritage Trail
- 2 Future Pedestrian Bridge
- 3 Tech Startups
- # Bus Routes
- Major Highway
- Potential Lift Route
- Potential Lift Station

## POTENTIAL BENEFITS



**SMALL FOOTPRINT + ENHANCED ACCESS**  
 Minimize physical footprint and interference with existing traffic flows. Fast, frequent, and reliable service for pedestrians and cyclists.



**ECONOMIC DEVELOPMENT**  
 Connect diverse neighborhoods and job centers, while attracting tourism dollars with an iconic attraction.



**ICONIC**  
 An identifiable beacon floating above existing streets and right of ways with a new bird's eye view of the river and Cities.



**ENVIRONMENTALLY FRIENDLY**  
 Energy-efficient and powered by clean electricity.



**IMPLEMENTABLE + COST EFFECTIVE**  
 High-quality, high-capacity and low-cost.



**RESILIENT**  
 Remains operable during an event of widespread flooding.



## CAPACITY

Aerial lift capacities can range between 3,000 and 5,000 passengers per hour, per direction (pphd), depending on technology. Generally, monocabable systems can carry as many as 3,000 pphpd and 3S systems can carry as many as 5,000 pphpd. Other types of technologies can carry somewhat more or less passengers, although are less frequently used than monocabable or 3S systems.

Cabins can arrive as fast as every thirty seconds to a minute and can be added or removed from the system to increase or decrease capacity. The speed of aerial lifts can also be increased or slowed to change capacity or extend the passenger experience. Monocabable cabins carry as many as 15 passengers, and 3S cabins carry as many as 35-40 passengers. All cabins can be designed to be ADA accessible, socially-distanced, and carry both passengers and bicycles.



## CAPITAL COST

As compared to the Kansas City Streetcar, which cost roughly \$100m or just under \$50m per mile, an aerial lift can be a more cost-effective form of transportation and can cross terrain that would be substantially more expensive by bridge or fixed rail. Aerial lift systems can cost as little as \$25 million per mile, depending on the system design, number of stations and number of towers. The length of the system may be between 1.5 and 2 miles, resulting in an approximate cost of as little as \$50 million.



## OPERATIONAL COST

Operations and maintenance costs can vary substantially based on the system's design, length, complexity and hours of operation. Aerial lift system operations can rapidly increase passenger capacity without a linear increase in operating costs associated with personnel, unlike other forms of transportation. In terms of maintenance, aerial lift systems are designed for long lifespans and most components of the system can last up to 20 to 30-years, comparable or superior to rail cars and buses. The system could potentially offset both operational and capital costs with sponsorships, special packages and events, naming rights, or real estate-related revenues from integrated or adjacent development.



## APPROVALS + MANAGEMENT

Depending on interest and funding sources, approval, construction management and operations could be the responsibility of the Kansas City Area Transportation Authority (KCATA), a private entity or a public-private partnership. Although aerial lifts utilize unique technologies, primary lifts and tramway manufacturers often contract for longer-term maintenance and service, limiting needs for specialized maintenance staff.



## IN OTHER CITIES

A few examples of tower structures, cable cars, and aerial lifts around the world



TELLURIDE, CO

Since 1996, the Telluride/ Mountain Village gondola is an 8-mile, 13-minute ride that offers incredible 365-degree views of the San Juan mountains.

PORTLAND, OR

It is one of only two commuter aerial tramways in the US. The aerial tram travels a distance of 3,300 feet and 500' above the city. The Portland Aerial Tram is considered to be one of the most successful models and leaders for construction and operation of aerial public transportation.

ROOSEVELT ISLAND, NY

The first commuter aerial tramway in North America. It was intended as a temporary solution for the island's commuting needs. Due to its popularity, however, it transformed into a permanent facility accommodating thousands of residents and now serves the new Cornell Tech campus.

EMIRATES AIR LINE

The cable car provides a crossing every 15 seconds and carries up to 2,500 passengers per hour in each direction. Each flight spans a distance of over half a mile absorbing views of London's St Paul's Cathedral, the Gherkin, Thames Barrier, Maritime Greenwich and the Queen Elizabeth Olympic Park.

MEDELLIN METROCABLE

Medellin's Metrocable is known for its success in physically and symbolically integrating and reconnecting impoverished barrio residents into the city.

EAST RIVER SKYWAY

The East River Skyway proposes a one-of-a-kind experience that connects the NYC's Lower East Side and Williamsburg neighborhoods. As the cable cars approach the East River, they will ascend to 300+ feet, gliding across the waterway with animated views of the Williamsburg Bridge and Manhattan skyline, surreally perched just outside the car window.

CHICAGO SKYLINE

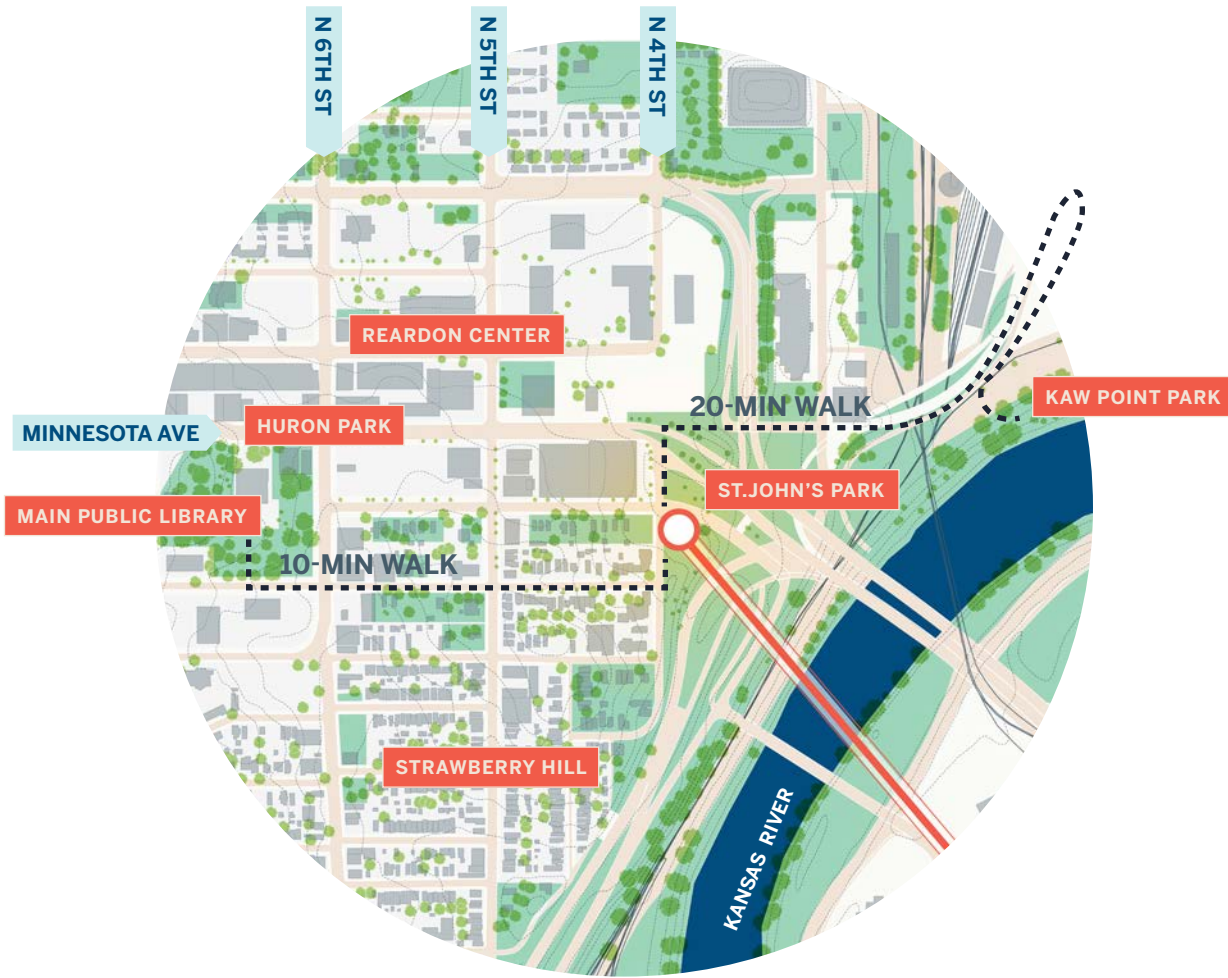
Chicago Skyline would serve as a major tourist attraction, showcasing and establishing a link to Chicago's many architectural gems such as the lakefront, downtown, riverwalk, Millennium Park, and Navy Pier. It would include three stations and around 1.6 miles of length and accommodate 3,000 people per hour.



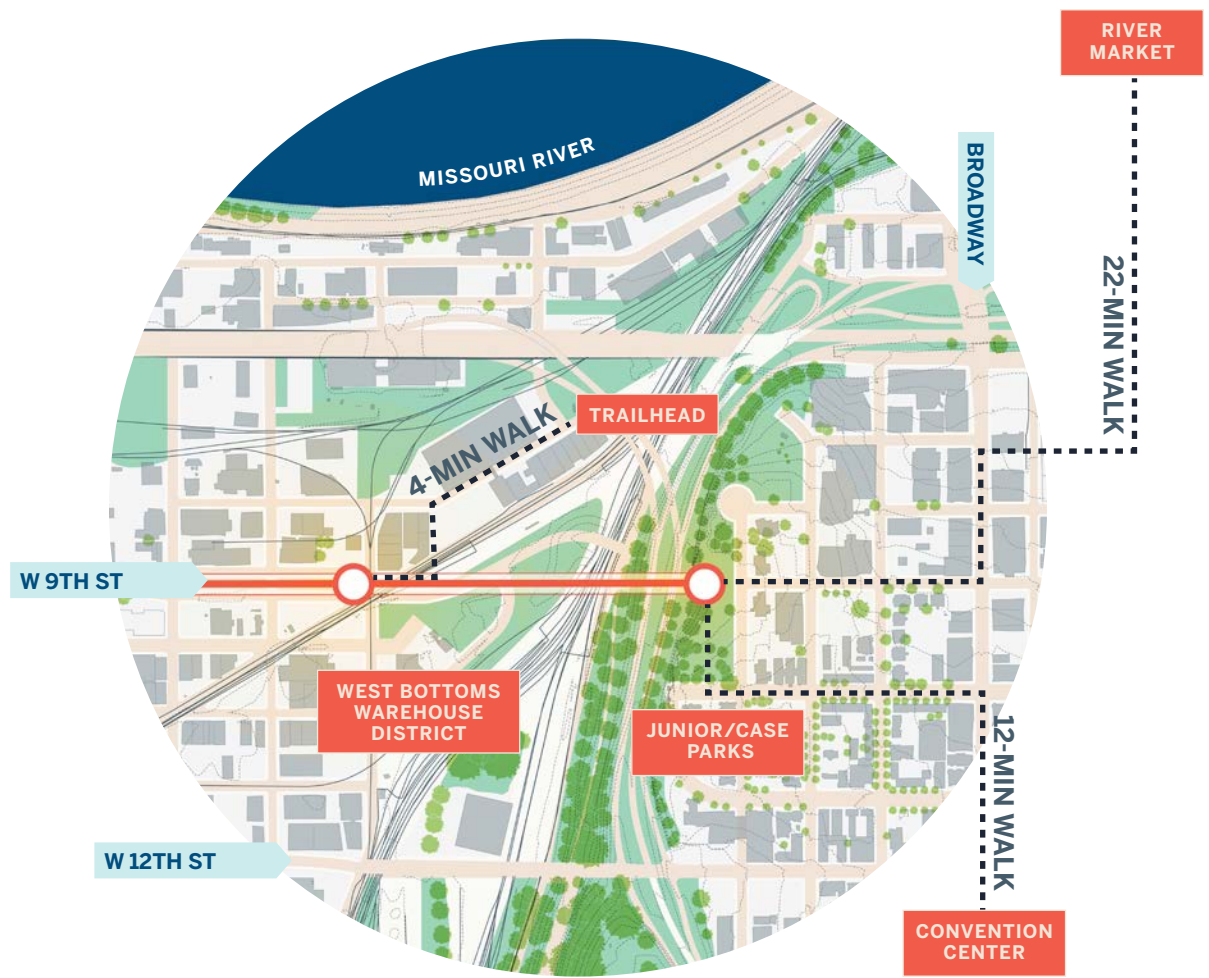
VIEW FROM STATE LINE ROAD & WEST 9TH STREET



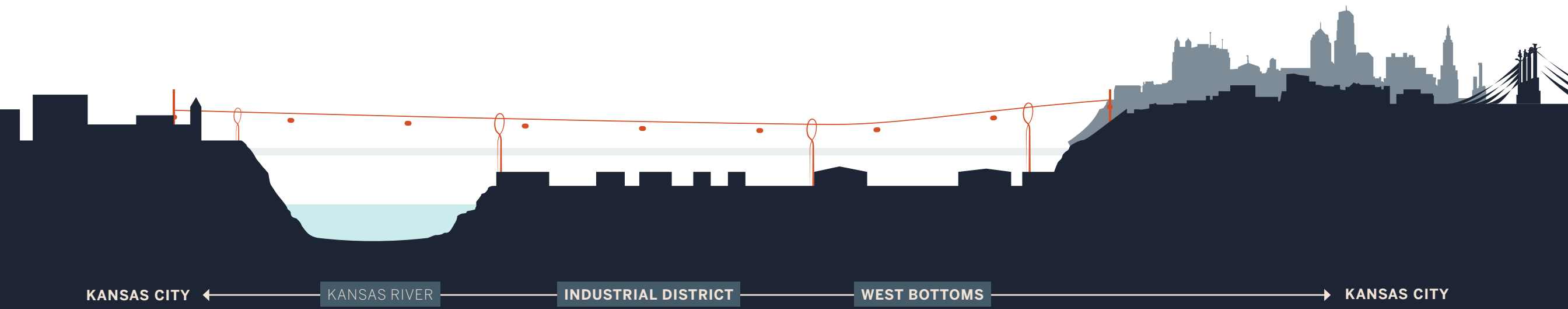
**VIEW FROM STATE LINE ROAD & WEST 9TH STREET  
FOR ILLUSTRATIVE PURPOSES ONLY**



KANSAS CITY, KANSAS



KANSAS CITY, MISSOURI





CONCEPT  
DEVELOPMENT

ENGINEERING  
+ ECONOMIC  
FEASIBILITY  
STUDY

DESIGN +  
PLANNING AND  
ENVIRONMENTAL  
APPROVALS

PUBLIC +  
PRIVATE  
INTEREST  
MARKET  
SOUNDING

PROJECT  
DELIVERY

OPERATIONS

# SOM

Skidmore, Owings & Merrill (SOM) is a multi-disciplinary global collaborative that integrates architecture, urban design, planning, structural engineering, and interior architecture. Responsible for some of the world's most advanced buildings and significant public spaces, SOM anticipates changes in the way we live, work and commute in cities around the world. Among our proudest achievements, SOM consistently delivers state-of-the-art transportation hubs and transit-oriented developments renowned for their ability to attract marketplace investment, improve mobility, and elevate a sense of civic pride. Our work includes the planning, integration and development of air and rail infrastructure, streetcar, trolley and bus networks, bike lanes and comfort stations, and interconnected pedestrian networks. We work to ensure that great streets and an integrated public realm serve every member of the community, enhancing the character and accessibility of city neighborhoods.



HR&A Advisors, Inc. (HR&A) is an industry-leading real estate, economic development and public policy consulting firm, providing strategic advisory services for some of the most complex mixed-use, neighborhood, downtown, campus, and regional development projects across North America and abroad for over thirty years. We understand the importance of linking accretive private investment with public resources to support investors and communities' responsibilities and aspirations. HR&A's involvement in transit-oriented development (TOD) is diverse and includes advisory services to private developers, municipalities, and transit agencies. Our work analyzes the specific financial and operational drivers for transit agencies seeking increased ridership and non-farebox revenues, private developers seeking to leverage additional value from transit, and public planning and development agencies seeking to promote smart growth and revitalization.