

Bridging the Gap:
Uniting a Divided Urban Core through Riverfront Design in Topeka, Kansas

by

Jacob Boyd Johnson

A REPORT

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

Department of Landscape Architecture and Regional & Community Planning
College of Architecture, Planning and Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2019

Approved by:

Major Professor
Amir Gohar

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Abstract

Civilization has been defined by rivers. Initially people settled by rivers for sustenance. Later, rivers connected societies and were used for transportation. Rivers were both vital and fatal to those exploring new lands. Rivers were used to bridge our continent and to unite the eastern and western portions of the United States in the 1800's. Once glorified by explorers such as Lewis and Clark, the changes in transportation and technology in the last 200 years have caused us to take rivers for granted. As a result, American cities have neglected their rivers, disconnected from them, and forgotten them. Rivers physically divide many cities causing urban areas to lose cohesiveness, history, and culture rooted in their rivers. Urban rivers have flood walls, levees, railroads, streets, and many other barriers hindering connection to their waters. Reconnecting with rivers can transform the core fabric and identity of cities. "Riverfronts have the power of connecting urban dwellers to the natural processes, which are generally hidden in the urban context, to the history of the city, and to other city dwellers of different classes or backgrounds" (May 2006). The goal of this research is to create a connected and transitional riverfront corridor for the City of Topeka, Kansas by connecting the central and the north sides of town via a linear park bridge. The focus of the research is to create a masterplan for the Kansas riverfront to reconnect the people of Topeka, Kansas to the river that runs through their city. The target area will be inventoried, analyzed, and designed to create a riverfront design that creates an identity for people of Topeka and reconnects the city back to its river. This project will also create a riverfront destination which includes the Kansas river as part of a unified urban core for the city of Topeka. The multi-use bridge will become a focal point and a destination in itself. This project hopes to "establish a reason for people to return to the water's edge showing them potential uses in a very personal way" (Torre 1989). This riverfront project will not only connect north and central Topeka, but it will connect residents and visitors Topeka to the river itself.



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Jacob B. Johnson
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Figure 0.0.1 - View of the Kansas River and the Topeka Blvd. Bridge (Johnson, 2018)

“The rivers flow not past, but through us, thrilling, tingling vibrating every fiber and cell of the substance of our bodies, making them glide and sing.”

John Muir

Abstract

Civilization has been defined by rivers. Initially people settled by rivers for sustenance. Later, rivers connected societies and were used for transportation. Rivers were both vital and fatal to those exploring new lands. Rivers were used to bridge our continent and to unite the eastern and western portions of the United States in the 1800's. Once glorified by explorers such as Lewis and Clark, the changes in transportation and technology in the last 200 years have caused us to take rivers for granted. As a result, American cities have neglected their rivers, disconnected from them, and forgotten them. Rivers physically divide many cities causing urban areas to lose cohesiveness, history, and culture rooted in their rivers. Urban rivers have flood walls, levees,

railroads, streets, and many other barriers hindering connection to their waters. Reconnecting with rivers can transform the core fabric and identity of cities. "Riverfronts have the power of connecting urban dwellers to the natural processes, which are generally hidden in the urban context, to the history of the city, and to other city dwellers of different classes or backgrounds" (May 2006).

The goal of this research is to create a connected and transitional riverfront corridor for the City of Topeka, Kansas by connecting the central and the north sides of town via a linear park bridge. The focus of the research is to create a master plan for the Kansas riverfront to reconnect the people of Topeka, Kansas to the river that runs

through their city. The target area will be inventoried, analyzed, and designed to create a riverfront design that creates an identity for people of Topeka and reconnects the city back to its river. This project will also create a riverfront destination which includes the Kansas river as part of a unified urban core for the city of Topeka. The multi-use bridge will become a focal point and a destination in itself. This project hopes to "establish a reason for people to return to the water's edge showing them potential uses in a very personal way" (Torre 1989). This riverfront project will not only connect north and central Topeka, but it will connect residents and visitors Topeka to the river itself.

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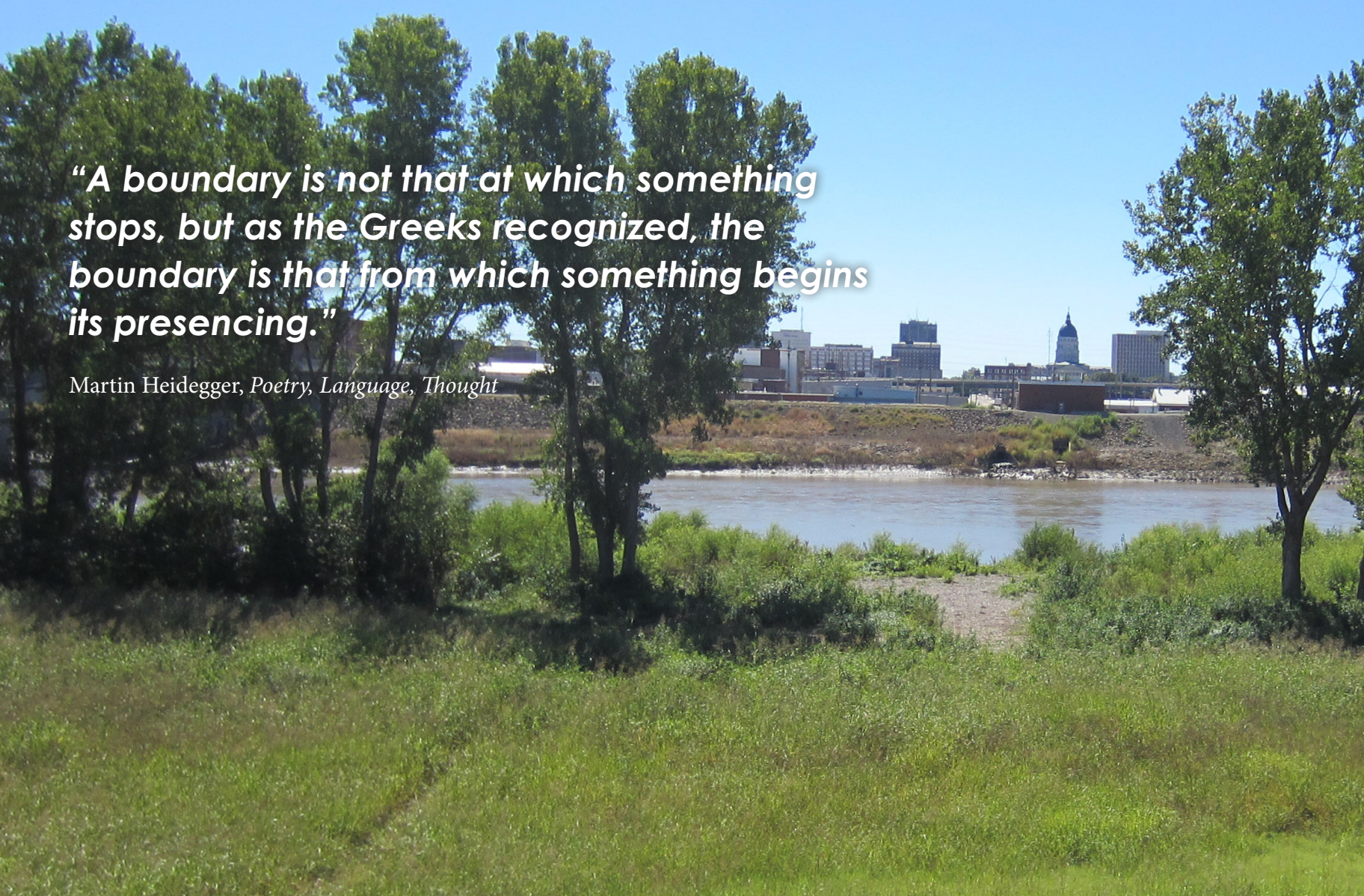
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For I never reached the end of this project on my own.



“A boundary is not that at which something stops, but as the Greeks recognized, the boundary is that from which something begins its presencing.”

Martin Heidegger, *Poetry, Language, Thought*

Looking south across the Kansas River, a view of downtown can be seen. The image of the Kansas State Capitol Building gives a sense of the identity of Kansas, but also of Topeka. The image presented by the native river edge on the north bank of the Kansas River coupled

with the view of the Capitol instills a feeling of the local pride of the community and city as a whole.



Figure 1.0.1 - View looking south toward the State Capitol Building from the north levee (Johnson, 2018)

1

Introduction

This section describes the dilemmas and significance for the completion of this project.

1.1 - Project Genesis

Historically speaking, rivers and their functions were critical to the creation of the ancient civilizations: the Egyptian Empire had the Nile river; the Roman Empire had the Tiber river; the Assyrian Empire had the Tigris river; the Babylonian Empire had the Euphrates River. Civilization began at these rivers based around water's critical element to support life, water. These rivers also provided water for agriculture, transportation, and trade. Civilizations have come and gone, but the rivers and their functions have stayed constant. Today, we see the time-stamp of settlement throughout the United States. Most of our cities were originally founded along rivers: Boston on the Charles River; St. Louis on the Mississippi River; Kansas City on the Missouri River; New Orleans on the Mississippi River; Topeka on the Kansas River.

“Wherever in the world, as an incident of the highways and wharves along its riverbanks, a city has provided opportunity for the people to walk and sit under pleasant conditions where they can watch the water (of a river) and the life upon it, where they can enjoy the breadth of outlook and the sight of the open sky and the opposite bank and the reflections in the stream, the result has added to the comeliness of the city itself, the health and happiness of the people and their loyalty and local pride.”

– Frederick Law Olmsted (1910)

In this quote from eighty years ago, Olmsted, the father of landscape architecture, explains that the enjoyment and the fullness of a city relates to its rivers. He foresaw rivers becoming developed for use as public amenities. Urban riverfronts, during Olmsted's time, became places for industry and transportation; however, many rivers were ignored, neglected, or forgotten entirely. Urban rivers have become one of the most neglected and misused resources in the United States (Wrenn 1983). During the late nineteenth century, transportation changed from water to railroad and automotive transportation, resulting in a shift away from the riverfront. Recently, attention has turned back to rivers and their importance to society. Cities now view their rivers and waterways as potential amenities that can improve city life.

There are many cities that have

embraced the opportunity their rivers present. Some exemplary riverfront sites are: San Antonio and the Riverwalk; Houston and Buffalo Bayou Park; Portland and the Tom McCall Waterfront Park. Houston, San Antonio and Portland have become more connected communities boasting successful amenities as a result of the integration of their riverfronts. In order for these cities to become the architecturally exemplar sites they are today, they needed to recognize the problems plaguing their urban core, or downtown. It is crucial to consider the river's constrictive nature when developing a downtown. Some of the problems present around rivers are access problems, lack of activities and sense of destination, and social problems, to name a few. Many cities have chosen not to address these challenges and have turned their back to their rivers and lost an opportunity to improve their urban cores. Some cities have realized this potential amenity and have attempted to create some form of connection to their waterway, yet problems persist such as disconnection due to the physical barriers of levees, streets, buildings, bridges, and railroads. Other forms of barriers are visual or even connotative. Whether or not these barriers intentionally divide their rivers and cities does not matter; this disconnection creates

misuse and neglect of their rivers, which fragments the city. The city, in turn, loses its connection to its history, culture, and knowledge.

*Figure 1.1.1 - Topeka Blvd. Bridge above the Kansas River
(Johnson, 2018)*



1.2 - Importance

One way that cities improve their rivers is with riverfront design. Riverfront designs have proven to be effective methods of re-accessing rivers and embracing their character for the city. Riverfronts have the power of connecting urban dwellers to the natural processes, which are generally hidden in the urban context, to the history of the city, and to other city dwellers of different classes or backgrounds (May 2006). Landscape architecture and urban design can aid in creating successful places to reconnect cities with their rivers. If riverfronts are to be designed and developed efficiently and successfully, it takes an understanding

of the constraints present in dense urban contexts. Some of these constraints include existing forms of urban fabric, connections across and over barriers, and destinations present on-site. Landscape architects, planners, and urban designers are involved in riverfront and waterfront design. They need to see potential opportunities in these highly constricted environments, especially with brownfield revitalization and infrastructure reuse becoming commonplace. Knowledge of how barriers and connections can be retained and retrofitted will be key.

Rivers present potential opportunities for uniting divided urban cores. A

revitalized riverfront design can overcome barriers to re-unite urban cores with their rivers. Riverfronts, when designed, can become unique places where the people gather, socialize, relax, and enjoy the city. Both Burns (1979) and May (2006) express the importance of cultural and cognitive aspects of connection with the river and the culture of the city. Topeka, Kansas is one city that has a divided urban core due to the Kansas River. I believe a revitalized riverfront for the city of Topeka will improve the connection between North Topeka and downtown.

1.3 - Goals of the Study

- To create an urban asset and amenity for the city of Topeka that attracts people;
- To connect and strengthen a divided urban core through urban design;
- To change the negative perceptions of rivers due to neglect;
- To renew and ground the identity of Topeka in its history, culture, and connection to the Kansas River and regional context;
- To understand the principles that lead in the design of successful placemaking;
- and to become familiar with riverfront development principles and topics to connect and revitalize a downtown.

1.4 - Research Questions

Main Research Question:

How can the Kansas Riverfront unite the NOTO District and Downtown Topeka to create a more connected and cohesive urban core?

Additional Questions:

What are important dilemmas and design considerations for redesigning the Kansas Riverfront?

What connections can riverfronts provide to urban environments?

How can riverfronts exemplify a city's history, culture, and identity?

1.5 - Claim

Rivers present potential opportunities for uniting divided urban cores. A revitalized riverfront design can overcome barriers to re-unite urban cores with their rivers. Riverfronts, when designed, can become unique places where the people gather, socialize, relax, and enjoy the city. Both Burns (1979) and May (2006) express the importance of cultural and cognitive aspects of connection with the river and the culture of the city. Topeka, Kansas is one city that has a divided urban core due to the Kansas River.

1.6 - Hypothesis

A transitional riverfront district located on the Kansas Riverfront in Topeka will create a strengthened link between the Downtown Topeka and the North Topeka Arts District. This link will create the needed connection through placemaking that will unite the divided urban core of Topeka.



“Urbanism is the art of understanding cities.”

Roberta Brandes Gratz, *The Living City*

The Kansas River and surrounding Kaw Valley have been areas ideal for many functions like transportation, trade, agriculture, development, and habitation. Many of these uses have, over the course of time, separated the people from the Kansas River. Railroads, streets, levees, highways,

and land uses are a few specific elements that separate the Kansas River from the City of Topeka.



Figure 2.0.1 - View looking west at the N Kansas Avenue Railroad Crossing (Johnson, 2018)

2

Background

In this section, the history of American riverfront development is explored. Urban design theories are reviewed to create a foundation for design in an urban environment like downtown Topeka. “Preserving the urban fabric, weaving together the treasured old and the needed new, not being afraid to think small—that is what genuine revitalization is all about” (Gratz, 1994). These theories focus on differing important factors but integrate into a design process when viewed together.

Additionally, an understanding of the dilemmas present around rivers that hinder their connection to urban environments will improve the types of design considerations required by riverfront projects.

2.0 - Urban Riverfront Development

Rivers have always had value in civilization. For early American settlements, they allowed for transportation, trade, and exploration that promoted growth on the coasts. As this urban growth increased, new western lands were being settled due to the Louisiana Purchase in 1803. Settlers travelling to this new territory were establishing settlements along rivers. These river cities depended on the connection or link offered by the rivers as supply lines in the wilderness back to civilization on the coast. Water and overland transportation increased as more people headed westward being fueled by water-related trade, due to the difficulty of overland transportation. These river ports transported materials for construction, necessary goods, and information to be exchanged. Thus, the riverfront became a social stage for the river cities where commerce and social interaction took place (Wrenn 1983; Otto, Mc-

Cormick, and Leccese 2004). Many of the river cities were a necessity for westward expansion until the invention of the railroad (Wrenn 1983). Examples of the river cities include Pittsburgh, Cincinnati, and St. Louis. These cities were able to trade and travel down the Ohio and Mississippi rivers to New Orleans. Many of these river cities expanded consistently with similar urban patterns, riverfront land uses, and functions (Otto, McCormick, and Leccese 2004).

Riverfront cities began with small piers that grew into a street network linking riverfronts to commercial buildings. Growing water-trade incentivized more piers and buildings with related functions of trade, transport, shipbuilding, and fishing (Otto, McCormick, and Leccese 2004). With the arrival of the railroad, infrastructure aimed to increase rail transportation and altered trade in the river cities. Railroads

increased the use and importance of riverfronts. Railroads aided in expanding the downtowns and warehouse districts of these cities; however, the railroads blocked access to the rivers and lowered the overall need for water-based trade (Wrenn 1983). Thus, preference for rail-based transportation increased and water-based transportation decreased. Railroads, warehouses, and industry continued to expand, retaining activity on the riverfront. Industrial and commercial uses dominated city riverfronts in the late 19th century; and in the first half of the 20th century, the riverfront industry and railroads declined. The economic centers of the city had grown closer into downtowns and further from the riverfront. Many of the riverfront buildings in turn declined, becoming warehouses. The railroad yards and warehouse districts located on the riverfront became less important, due to preference of freight

containerization and freight trade on the coastal ports, causing many buildings to fall into disrepair (Wrenn 1983). The areas became desolate and were selected for redevelopment. Redevelopment took shape in the form of the new mode of transportation, automotive transportation on elevated highways (Otto, McCormick, and Leccese 2004). Highways further separated cities from their riverfronts as did sewage plants, which were commonly found on urban riverfronts and released untreated sewage into the rivers. In addition, urban riverfronts were transformed by the U.S. Army Corps of Engineers to protect downtowns and developments from flooding. With this transformation, rivers lost access to their floodplains, which when separated increased the flooding potential of the rivers. So, declining river trade and transportation, obsolete industries relocation, and the expansion of highways and flood infrastructure on the riverfront have contributed to riverfront abandonment and separation in river cities (Otto, McCormick, and Leccese 2004).

2.1 - History of Topeka, Kansas

The city of Topeka has a similar experience with its riverfront; however, Topeka began as a crossing along some of the overland trails headed westward: the Oregon, California, and Santa Fe Trails. The crossing was called “Pappan’s” Ferry, since it was operated by the Pappan brothers, who married descendants of French traders and Kansa Indians who owned the land. The ferry was established in 1842 and was the first ferry that crossed the Kansas River (Giles 1886, as cited in Rosin Preservation LLC 2012). Being one of the few and convenient crossings on the Kansas River, the ferry became prominent. In December 1854, nine settlers founded the town of Topeka to see the new Kansas Territory admitted to the Union as a free state (Rosin Preservation LLC 2012). After the founding of the town, the nine men among others formed the Topeka Association, which designed the street grid

of the town perpendicular to the Kansas River. Kansas Avenue was the main street that accommodated commercial shops, while the riverfront accommodated mills. The buildings were constructed with limestone facades and rear brick walls and had begun infilling Kansas Avenue in the 1850’s and 1860’s (Rosin Preservation LLC, 2012). With the success of the newly found town, Topeka gained prevalence and became the capital of the State of Kansas in 1861 (Giles 1886, as cited in Rosin Preservation LLC 2012).

Like many Midwest towns, Topeka constructed railroads which brought in additional trade, adding to the early success of the city. The Union Pacific and the Atchison, Topeka, and Santa Fe Railroad were the two major rail lines that were constructed in 1866 and 1868, respectively (Giles 1886, as cited in Rosin Preservation LLC 2012; Historical

Commission Report 2013). The Union Pacific Railroad rail yard was constructed on the north bank of the Kansas River in the town of Eugene (now North Topeka). The AT&SF Railroad and rail-yard was constructed on the south bank and east of Kansas Avenue. The railroads brought job growth to Topeka and the Santa Fe Railroad established Topeka as its headquarters. With the interest of improving trade with northern counties, the city constructed a wooden bridge in 1858 connecting to North Topeka; however, the initial bridge did not last long and was washed away in a flood within a few months of its construction. A second, iron bridge was constructed on Kansas Avenue in 1869 that secured the crossing across the river. The iron bridge provided a safe means of connection between North Topeka and Downtown Topeka on Kansas Avenue. As a result, North Topeka



Figure 2.1.1 - Bird's Eye View of Topeka (Ramsey, Millett & Hudson Lith., 1880)

SUBTUS ROOM

- 1 HARRISON STREET PUBLIC SCHOOL.
- 2 CLAY STREET PUBLIC SCHOOL.
- 3 NORTH TOPEKA PUBLIC SCHOOL.
- 4 PRESBYTERIAN CHURCH.
- 5 BAPTIST CHURCH.
- 6 EPISCOPAL CHURCH.
- 7 M. E. CHURCH.
- 8 CHURCH OF THE ASSUMPTION.

- 9 UNION PRESBYTERIAN CHURCH.
- 10 CONGREGATIONAL CHURCH.
- 11 AMERICAN LUTHERAN CHURCH.
- 12 EVANGELICAL CHURCH.
- 13 COLORED BAPTIST CHURCH.
- 14 COLORED SECOND BAPTIST CHURCH.
- 15 COLORED M. E. CHURCH.
- 16 MISSION CHURCH.

BIRDS EYE VIEW OF **TOPEKA** KANSAS

- 17 NORTH TOPEKA PRESBYTERIAN CHURCH.
- 18 N. TOPEKA CONGREGATIONAL CHURCH.
- 19 NORTH TOPEKA BAPTIST CHURCH.
- 20 ROLLING MILLS.
- 21 MACHINE SHOPS OF A. T. & S. F. R. R.
- 22 DEPOT A. T. & S. F. R. R.
- 23 SHAWNEE MILLS.
- 24 CAPITAL IRON WORKS.

- 25 TOPEKA CARRIAGE FACTORY.
- 26 PASSENGER DEPOT N. P. & M. R.
- 27 FREIGHT DEPOT K. P. & M. R.
- 28 FARMERS MILLS.
- 29 INTER-OCEANIC MILLS.
- 30 DISTILLERY.
- 31 FIFTH AVENUE HOTEL.
- 32 TEFT HOUSE.

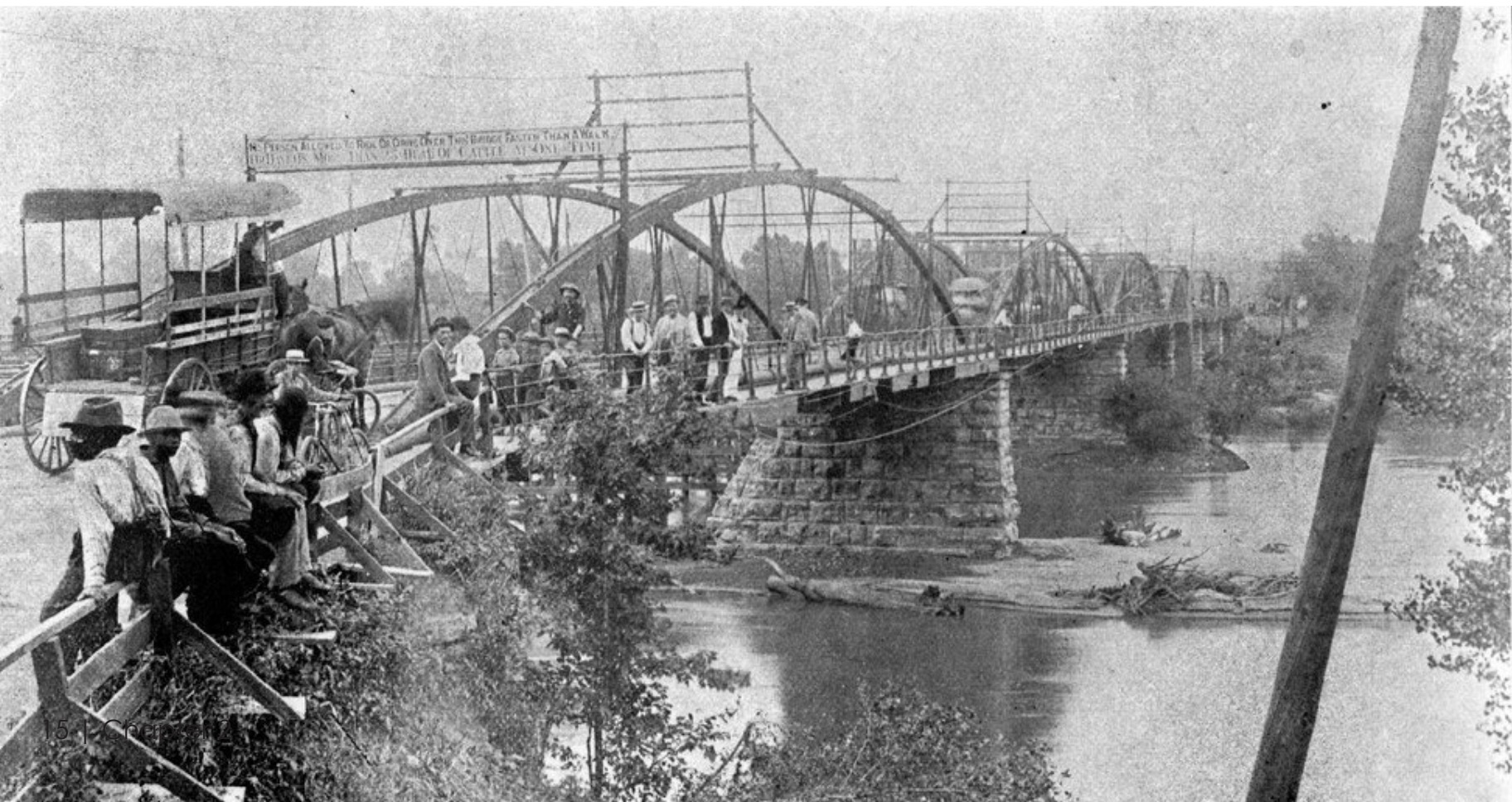
- 33 PAPERWORKS.
- 34 TOPEKA HO.
- 35 PLANTERS.
- 36 CITY BUILD.
- 37 PRO. D. HOG.
- 38 KNOX'S PEAC.
- 39 OPERA HOUSE.
- 40 TURNER HALL.

RAMSEY, MILLETT & HUDSON, LITH.

flourished due to the convenient access along the Kansas Avenue bridge, which formed a commercial core for Topeka north and south of the river. Industry and railyards characterized the north bank of the river while commercial stores were located on the south bank. During this time, Topeka's downtown grew denser from 3rd street to 8th street and attracted more railroads to the city. The Missouri

Pacific and the Chicago, Rock Island, & Pacific railroads arrived in Topeka in 1886 and 1887, respectively (Connelley 1918, as cited in Rosin Preservation LLC 2012). The iron bridge was later replaced by a concrete Melan bridge in 1899. Melan bridge withstood the major floods of 1903 and 1951 that destroyed many properties surrounding the Kansas River, especially in North Topeka. The Melan bridge

collapsed in 1965 and was replaced by the Kansas Avenue bridge, which still exists today (Rosin Preservation LLC 2012). As a result of the 1951 flood, levees were built to protect from further floods. Due to the construction of the levees, the Kansas River was separated from much of its floodplain and the city. The levees altered the face of Topeka as did the urban renewal movement. In the mid-1900's,



rundown and blighted communities surrounded Topeka's downtown. A survey at the time recorded 480 residential buildings as decaying (Topeka State Journal 1960). The city sought to redevelop these areas through an urban renewal plan that implemented the new I-70 corridor, the Ramada Inn Hotel and convention center, a Montgomery Ward department store, Fidelity State Bank, the

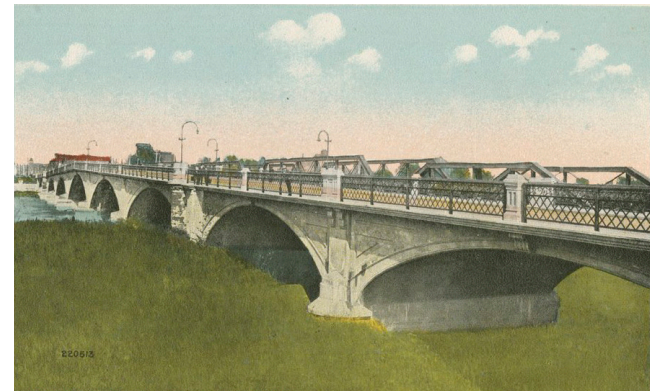
Townsite Plaza, and the American Home Life Building. During the mid to late 20th century, Topeka continued to grow mainly to the south and west of downtown (Rosin Preservation LLC 2012).



(Opposite) Figure 2.1.2 - Kansas Avenue Bridge, Topeka, Kansas (Kansas Historical Society, 1870's-1890's)

(Left) Figure 2.1.3 - Melan Bridge, Topeka, Kansas (Farrow, 1895-1898)

(Below) Figure 2.1.4 - Melan Bridge over the Kansas River in Topeka, Kansas (Valentine-Souvenir Co., 1905-1910)



2.2 - Topeka, Kansas Today

Today, Topeka boasts a population of 126,588 people (Census Reporter 2017). Topeka is located in Northeast Kansas in Shawnee County and is the capital of Kansas. Topeka was named one of the top 10 best cities for the next decade by Kiplinger's Personal Finance Magazine in 2010. It was a central hub for railroads as settlement grew westward ("Topeka, Kansas - City Information, Fast Facts, Schools, Colleges, and More" 2005). Topeka is famous for the Supreme Court Case, *Brown v. Board of Education* in 1951, which had a massive impact on the civil rights movement ("Topeka, Kansas - City Information, Fast Facts, Schools, Colleges, and More" 2005).

Topeka offers many markets, festivals, and fairs throughout the year such as the Farmer's Market held downtown or the Cider Days Fall Festival. Topeka hosts a keen art culture as well. With the revitalization

of North Topeka into the North Topeka Arts District (NOTO), the area is proving to attract people and new businesses with the First Friday Art Walk, which attracts hundreds of people. South of NOTO is the Great Overland Train Station. Listed on the National Register of Historic Places, it is now a railroad museum, the All Veterans Memorial, and the Kansas Hall of Fame (Movoto Real Estate, 2019). South Kansas Avenue continues revitalization for downtown by renovating old buildings and incorporating an improved streetscape equipped with local art, sculptures, and materials. The Capitol Building was completed in recent years adding to the attraction of downtown. In addition, Topeka also offers many outdoor activities like trail-running and biking as it is home to over 100 parks and 20 miles of trails (Movoto Real Estate 2019). Topeka continues to improve itself as a culturally vital symbol of Kansas.

In summary, Topeka is a city founded at the Kansas River. Due to the changes in infrastructure over the years, Topeka has lost its connection to its river. These changes include the incorporation of the railroad, changes in land use, shifting commercial centers, and construction of the elevated highway. They reflect the consistent pattern of change seen by other American river cities like Pittsburgh and Cincinnati. Topeka experienced some set-

backs in the past, yet current projects give hope for improving the city like the NOTO Arts District and the South Kansas Avenue Revitalization Project. As these projects have improved the city, a connection between them would re-introduce the Kansas River and create a destination that would chain these projects together, uniting the urban core.

*Figure 2.2.1 - Kansas State Capitol in Topeka, Kansas
(Emerson, 2018)*



2.3 - Figure-Ground Theory

The first theory of figure-ground reveals “masses” of the buildings and “voids” of the urban fabric. These masses and voids of the city are described as a field, or a kind of lattice of urban spaces. This lattice is known as the urban fabric. Urban fabrics have differed from culture to culture and civilization to civilization. Figure-ground theory seeks to articulate that pattern of an urban environment, particularly to define space. “Space is the medium of the urban experience, providing the sequence between public, semi-public, and private domains” (Trancik 1986). This theory is used as a tool that alters perceptions of space by, in Trancik’s words, “creating positive voids, or ‘space-as-object’” (Trancik 1986). Through these positive voids, designers can understand collective patterns in urban areas as well as urban character. In this theory, types of solids and voids can be classified to form and design the perception of urban space. The major

types of solids are the public monument (or institution), the field of urban blocks, and edge-defining buildings. The composition of these solids forms the voids of the fabric. The voids hold the activity of public life outside the solids (i.e. buildings) and create visual continuities (Trancik 1986). The types of urban voids are the passage (entry foyer space), the inner block void, the primary network of streets and squares, public parks and gardens, and the linear open space system. The balance of the solids and voids is essential to this theory. If the balance is appropriate, the urban fabric functions well. If the balance is poor, the fabric tends to lose space. Lost space occurs especially with fragments when there is poor balance in the urban fabric (Trancik 1986).

Figure-ground theory can be effective at establishing the available space in urban contexts and gives some unique insight to the situation in Topeka. The blocks of

Topeka’s urban core, the urban fabric, are oriented not true-north as many cities are, but perpendicularly toward the Kansas River. This was the intent of the city’s founders. The urban fabric outside of the urban core is re-oriented to align the streets north-south, but the river-oriented streets create a unique opportunity for Topeka. Trancik discusses linear park open space systems and their function when it comes to the urban fabric. “Often related to water courses, linear open spaces slice through districts, establish edges, and link places” (Trancik 1986). Topeka’s urban core is disconnected because it lacks spatial definition due to a linear open space lacking edges and links. These edges can be interpreted as the banks of the Kansas River, the split between districts, or defining something else. The linear open space can link other places in the urban fabric. Many cities have used riverfront trails that achieve connection throughout

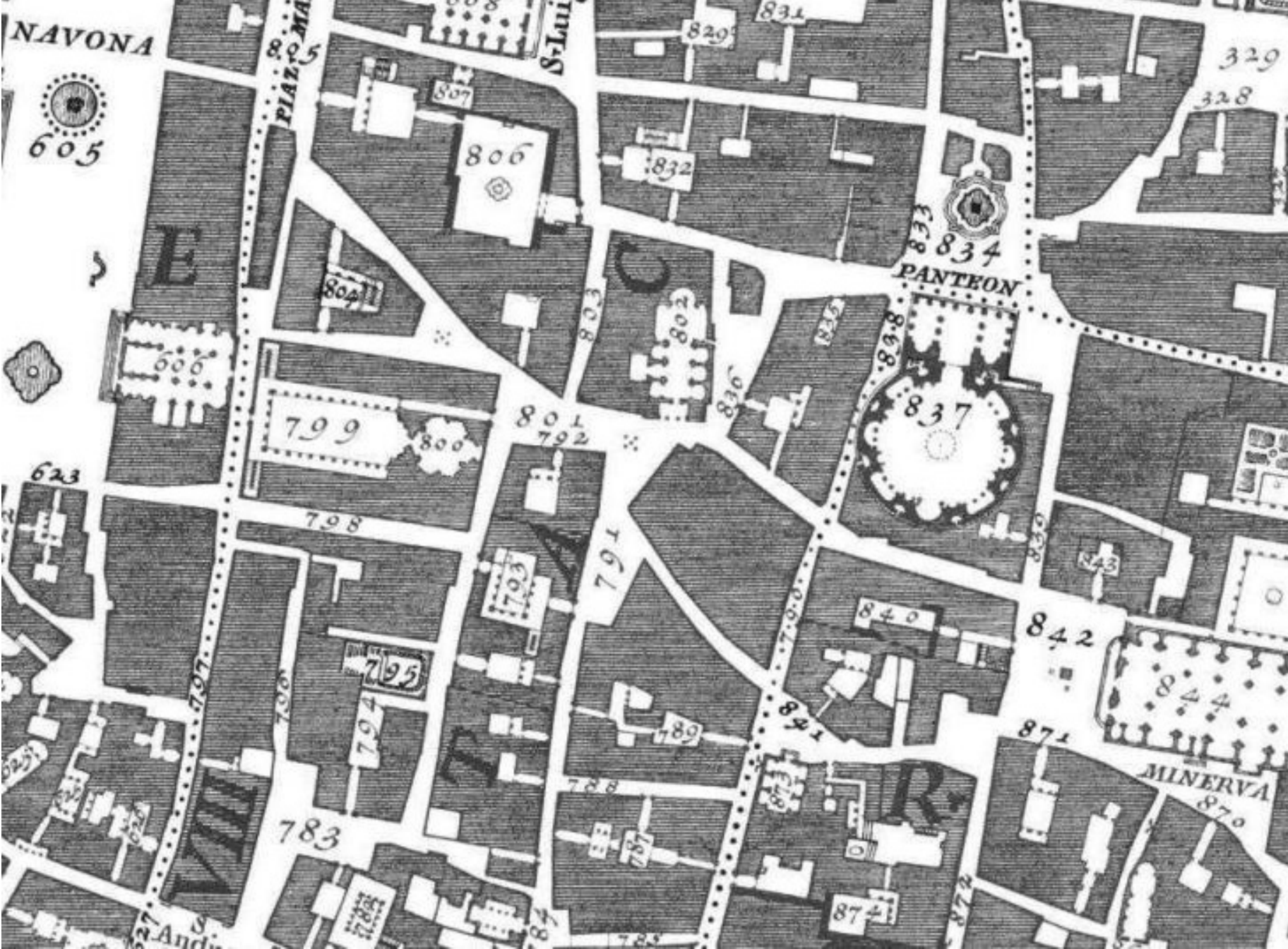


Figure 2.3.1 - Giambattista Nolli's Map of Rome (Nolli, 1748)



their cities. It is a viable use for a linear undevelopable strip of land, which offers a contrast with the denser urban fabric of the city. Figure-ground theory has the disadvantage of focusing solely on the space and not of connection or linking spaces. In Topeka's urban core, the Kansas River severs the urban fabric between the downtown district and the NOTO Arts

district. The second urban design theory, linkage theory, focuses on the connections created in the urban fabric.

Figure 2.3.2 - Figure-ground Map of Topeka (Johnson, 2019)

2.4 - Linkage Theory

The second theory of urban design, linkage theory, uses the organization and networks of lines to create a spatial datum that relates buildings to spaces (Trancik 1986). The datum functions as a line of reference when in the city, on which all the other elements and spaces are arranged to connect the urban fabric (Trancik 1986). Some examples of the datum are an axis, sight line, directional movement, building edge, or other similar element. Multiple datums can organize an urban fabric. These datums form the links between different elements that organize the urban fabric (Trancik 1986). The links articulate the city and unite it. “Linkage is simply the glue of the city. It is the act by which we unite all layers of activity and resulting physical form in the city” (Maki 1964, as cited in Trancik 1986). Maki categorizes urban space into three types: compositional form,

megaform, and group form. The first type utilizes a loose composition of individual buildings. The linkage is inferred instead of obvious (Trancik 1986). The linkage radiates or extends from buildings with formal elements. Megaform, the second type, links spaces through a physical, hierarchical, and open-ended system. The last type, group form, one last way for linking, is neither imposed nor implied but grows incrementally along open space. This type of linkage is natural and usually organic, typically existing in the layout and development of villages. All these types of form emphasize linkage to organize the buildings and urban spaces (Trancik 1986). Although figure-ground theory understands and uses space to connect the fabric, it conceptualizes the urban fabric based on the masses of buildings and the voids of space.

2.4.1 - Space Syntax

Another theory that closely relates with linkage theory is space syntax. Space syntax, proposed by Professor Bill Hillier from Bartlett School of Architecture at UCL, is a way of understanding the chaos of the city. In former schools of thought, a function-based approach to urban design grouped different zones of the city and attempted to predict the amount of interaction between the zones. This is a concept resembling gravity where zones will attract each other (Hillier and Stonor 2010). This function approach to urban design orders the spatial form of a city based on the predicted interactions between the zones. Space syntax rethinks this idea by modeling the spatial network, specifically paths like streets and alleys (Hillier and Stonor 2010). It measures the configuration, instead of attraction, by modelling the relationships between each space in the system, that is the city. Hillier coins the term

“dual network” to categorize cities into two types of movement potential, based on simplifying all paths to line segments on a map. The segments are measured from one street intersection to the next street intersection; the differences of the lines in the network are distinguished between length and orientation, which form the two categories of the foreground and the background grid (Hillier and Stonor 2010). The foreground grid consists of long straight lines that cover the city and make all connections. These lines are few in number in the city and close to straight angles. The background grid consists of many short lines that intersect at near right angles (Hillier and Stonor 2010). Space syntax uses the theory of natural movement to understand how people interact and traverse through cities. This theory assumes that people navigate through a city using the cognitively simplest path from A

to B, which takes the route with the least angular change (Hillier and Stonor 2010). Natural movement is calculated through algorithms that determine the complexity of a journey. There are two potentials for natural movement that come into play: to-movement potential and through-movement potential (Hillier and Stonor 2010). The first potential, to-movement, is destination based on how easy it is to arrive at one’s destination via the line segments. It is measured by mathematical closeness and is understood as integration, or “how close the origin space is to all other spaces” (UCL Space Syntax 2019). Through-movement potential, on the other hand, is the likeliness one is to pass through space on routes between all other pairs of segments. It uses mathematical betweenness and is called choice (Hillier and Stonor 2010). Activity on the street is a mix of people moving across longer or shorter journeys

through the network (Stonor 2018).

Hillier claims that cities are movement-based economies, in that, the movement patterns organize the land uses of cities. Residential land uses locate away from movement-rich areas (Hillier and Stonor 2010). Commercial and economic land uses move toward movement-rich areas. Thus, the movement network determines land use patterns (Hillier and Stonor 2010). He sees this as the fundamental city-building process. As cities grow, the foreground network's linked centers grow and change function and spatial layout located in a network of background residential uses (Hillier and Stonor 2010). Pervasive centrality (when one is near a small center, there is a larger one not far away) is sustainable since it is hierarchical in this system. The centrality diffuses throughout the city (Hillier and Stonor 2010).

Space syntax is a very useful model for multi-scale synthesis of the processes forming cities. It can provide a space-based and evidence-based reasoning for urban design. Dubbed “strategic urban design” by many, it works from the macro to the micro scale and allows us to design with the flow of the city-building process (Hillier and Stonor 2010). It has proven to reactivate spaces with activity and movement such as Trafalgar Square in 2003 where, as a result of analysis and redesign using space syntax, pedestrian activity has increased by a factor of more than 10 (Jacoby 2006).

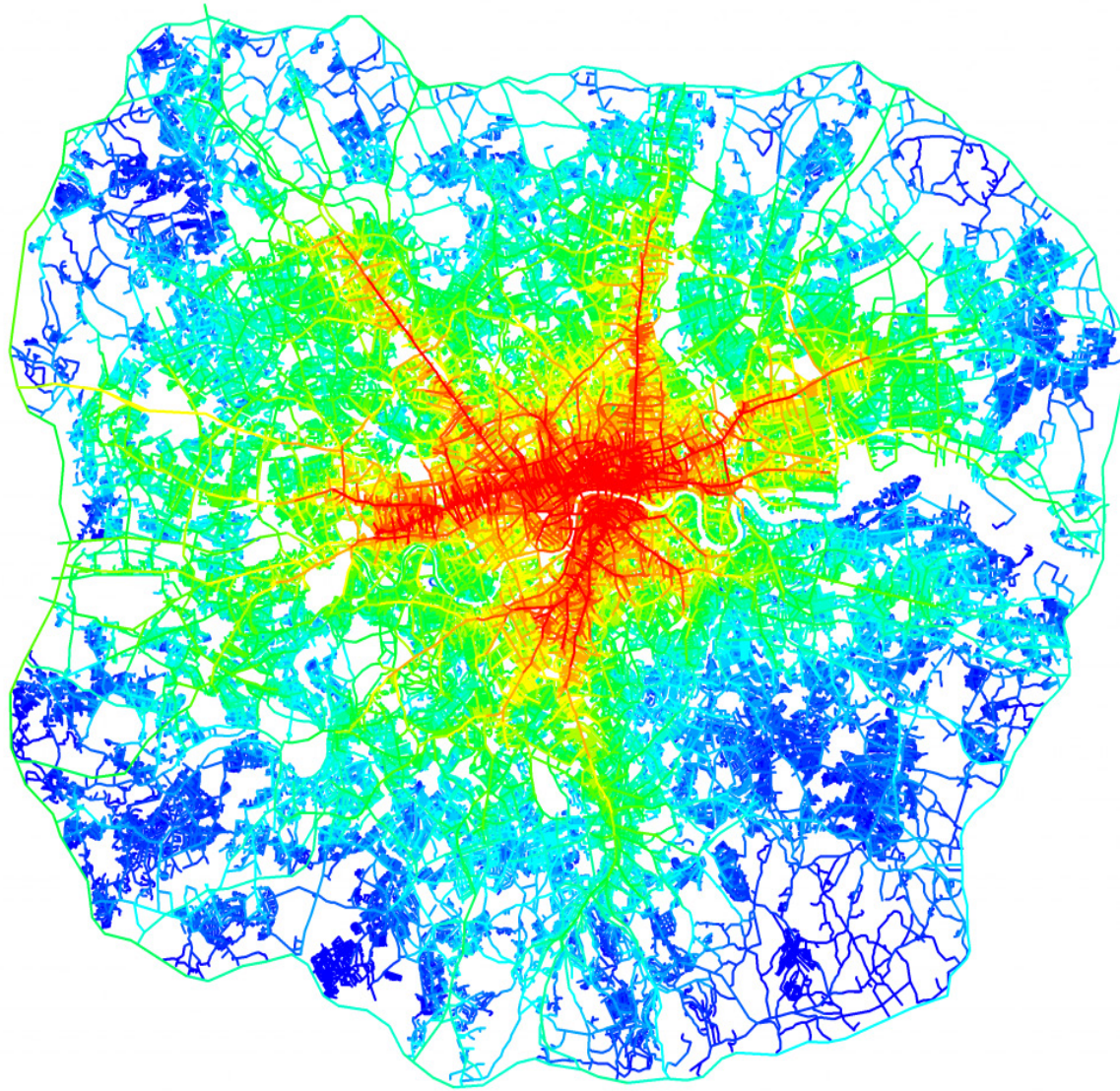


Figure 2.4.1.1 - Space syntax integration pattern of Greater London (UCL Space Syntax, 2019)

Looking to Topeka, aspects of linkage theory can be effective at connecting and linking an urban environment through movement. A key difference between linkage and figure-ground theory is that linkage theory requires establishment of the public space in its entirety before buildings are planned (Trancik 1986). With space syntax, the formation of urban environments occurs incrementally over time as an urban environment grows, and in that regard, it is similar to the group form of linkage theory. Space syntax asserts that the movement of people determines city centers, land use patterns, and spatial layout of the city. Space syntax is an effective way of measuring and analyzing the city-building processes; however, it requires intense computation of algorithms by computer. The theory of natural movement is important in that people navigate the simplest ways of connection from an origin to a destination. The linkages within and out of the urban fabric are important considerations for uniting a divided urban core.

2.5 - Place Theory

The third urban design theory to be considered is place theory. Place theory, in essence, is the understanding of the human context in a space. In Trancik's words, "space is a bounded or purposeful void with the potential of physically linking things, it only becomes place when it is given a contextual meaning derived from cultural or regional content" (Trancik 1986). Place theory takes the character of a place, the *genius loci*, and enhances it. Designers are called to create place through addressing the cultural context, social factors, and human needs of a space. Physical spaces have many characteristics such as color, material, shape, etc...but, with the introduction of human aspects of a space, emotion adds a nonphysical factor to the design of a space. Since people are, in a way, the customers of designers, the human factors need incorporation into designs "to create meaningful places for peo-

ple to dwell" (Norberg-Schulz 1979). Adherence to addressing the human aspects, thus, can make a meaningful, an active, and attractive place or create a neglected, repelling, and dead space. With this theory, a space has a history, a culture of interactions between people and the space. Good place design requires investigating the history, social and emotional interactions, and materials and craftsmanship. Past, present and future must be considered as places, like cities, are constantly changing due to time. Every place exists in time and in space (Lynch 1972). Designers in this regard, need to understand that spaces do not create perfect places. Historic context, natural context, human needs, and essential qualities of place as a space progresses in time create places (Trancik 1986). Many attempts to design a successful place have varied over the years. Kevin Lynch's approach to theory of place included some

principles for city space design: legibility, structure and identity, and imageability (Trancik 1986; Lynch 1960). Legibility is the mental picture of the city by user on the street; structure and identity are the recognizable, coherent pattern of urban blocks, buildings, and spaces; and imageability is the user perception in motion and how people experience city spaces (Trancik 1986). Lynch uses these three principles to determine the

success of urban spaces. In addition, he categorizes the imageability of the city into five elements: paths, edges, nodes, districts, and landmarks (Trancik 1986; Lynch 1960). These are the elements which people identify to navigate a city, but structured urban design is formed in these elements (Trancik 1986). Addressing the intangible qualities of a meaningful space is important; however, it is partly determined by design, but mainly by people. Design can address the social factors of a space to create meaningful spaces as one organization, Project for Public Spaces (PPS), has. It seeks to create meaningful public spaces that focuses on a placemaking process intent on creating meaningful public space. This placemaking process addresses necessary factors required for meaningful public space. The factors are similar to place theory uses (physical, cultural, social identities, and time factors), however PPS redefines the factors:

““They (successful public spaces) are accessible; people are engaged in activities there; space is comfortable and has a good image; and finally, it is a sociable place: one where people meet each other and take people when they come to visit.””

– Project for Public Space (1975-2018)

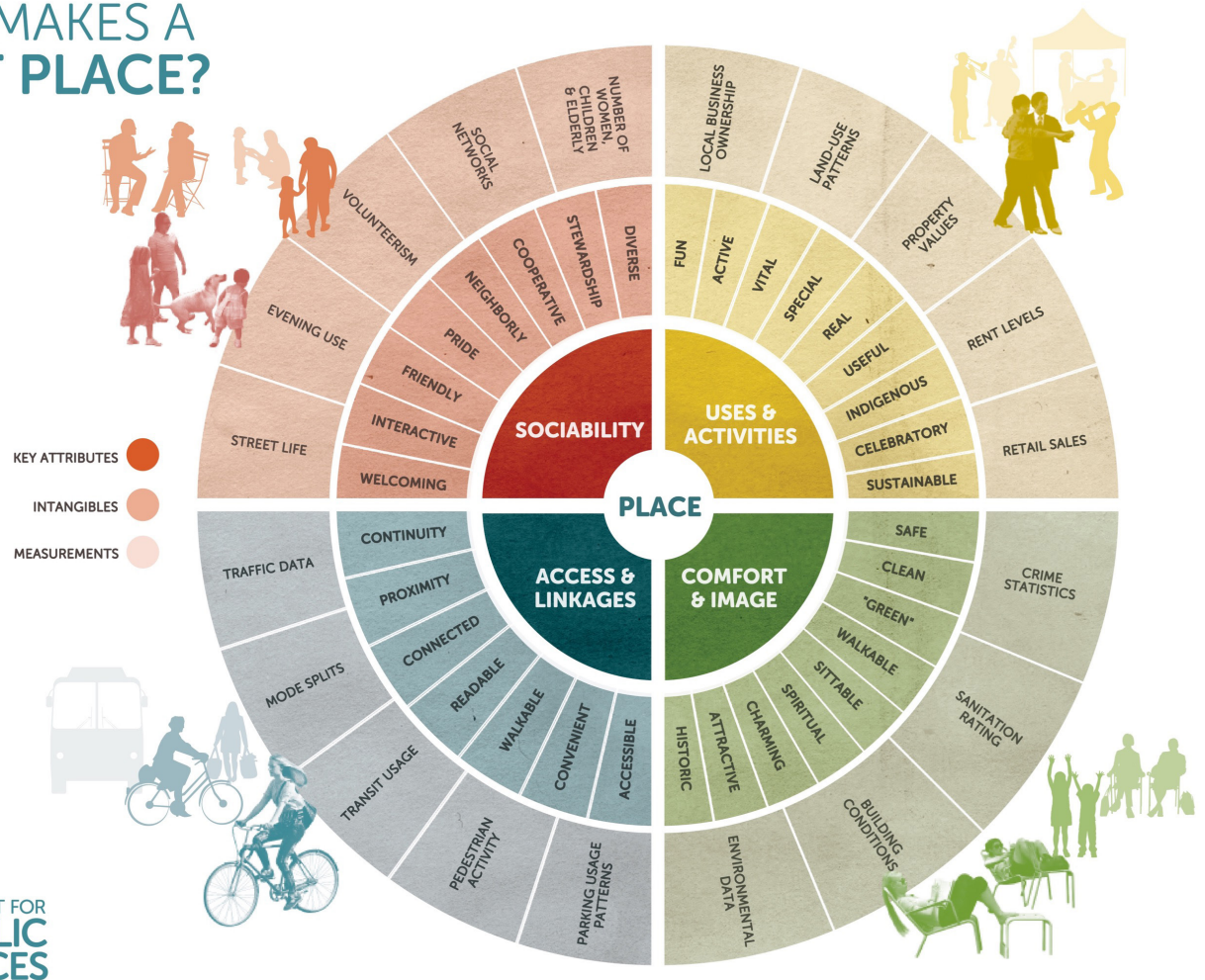
Project for Public Spaces uses these four factors of meaningful public space: accessibility, activity, comfort, and sociability to determine whether a place is successful. PPS analyzes the visual and physical connections of a place to determine its accessibility. Comfort of a space, and if it has a good image, pertains to the perceived safety, cleanliness, and availability of seating. Activity gives people a reason to come to the place and to return there after they leave. Sociability determines people’s desire to interact with other people in a space; the higher this quality, the space will tend to create a stronger sense of community (PPS 2018). These qualities can be measured qualitatively by certain verbal descriptions of a place like active, walkable, connected, etc. They can also be determined quantitatively through statistics or research of factors like property values, environmental data, or traffic data (PPS 2018).

PPS uses many factors to define successful places. All urban design should strive for achieving these factors to ensure success of a place. Attraction of people to an urban space is an effective means of measuring the success of an urban design. As mentioned earlier, people are designers’ clients and the space should be designed for people. Place theory and placemaking

give appropriate factors, elements, and qualities to achieve in designing for people.

(Opposite) Figure 2.5.1 - Project for Public Spaces’s “What makes a Great Place?” Diagram (PPS, 2018)

WHAT MAKES A GREAT PLACE?



2.6 - *Integrated Theory*

Each of the urban design theories, Trancik summarizes: figure-ground, linkage, and place theories are not ideal. Cities exist as complex layered entities, so urban design theories in turn must address the layers of cities accordingly. The theories addressed the problem of spatial definition in figure-ground; linkage theory addressed the nature of connection existing in the urban fabric; space syntax addressed the natural movement of people and how space and function is formed around movement; and place theory addressed the social sensitivity of space within the fabric. If these theories are used collectively to design urban space, then they can effectively design successful urban space (Trancik 1986). This integrated approach, as Trancik (1986) puts it, helps to achieve one of the primary goals of urban space: to create meaningful places for people to dwell (Norberg-Schulz 1979).

Trancik deduces from the three theories five principles underlying an integrated urban design: linking sequential space; lateral enclosure and edge continuity; integrated bridging; axis and perspective; and indoor/outdoor fusion. Linking sequential space demonstrates that public space can connect in multiple spaces together, creating a unity in space. Designers can link discontinuities through directing pedestrian space (Trancik 1986). Lateral enclosure and edge continuity shows that separation of the public and the private is needed because buildings form the open spaces of the fabric. Trancik's principle of integrated bridging applies to the need for multifunctional spaces in the urban fabric. This principle applies when barriers separate the urban fabric. Continuous pedestrian space can link or bridge a discontinuity in the fabric through making a multifunctional space. He states that "the principle

can also be applied to reclaim leftover space between districts that segregates continuity in urban form" (Trancik 1986). This principle could directly apply to the Topeka riverfront since there is a discontinuity between the NOTO district in North Topeka and the downtown district. The discontinuity can be overcome through a link providing a multifunctional pedestrian space. Continuing with the principles, axis and perspective have the ability to visually connect disconnected spaces. They are also important as they support pedestrian navigation of the urban space, or wayfinding. The last principle is indoor/outdoor fusion. This principle stresses the connection between interior and exterior space that can unite the urban fabric as a whole. The benefits of this fusion can improve the efficiency of buildings and create new spaces in the fabric (Trancik 1986).

2.7 - River Connectivity

Understanding the theories that define the chaos of the urban fabric is vital to designers for good city planning. The landscape tends to dictate the structure and form of the city as it grows. In the case of this project, the major natural element of the landscape is the river, in particular, the Kansas River. What is a river in terms of spatial design? Perhaps the elements of Kevin Lynch's Image of the City can help define it. Of the five elements, path, edge, node, district, and landmark, a river could be categorized as a path. Rivers function as a natural path in that they convey water and transport sediment (Changming and Xiaoyan 2009). They can also function as transportation routes. Rivers function as an edge. Rivers, according to Lynch (1960), make strong edges. Edges create a boundary to separate two distinct elements, so the elements are discontinuous like in the case of Topeka (Lynch 1960).

The urban fabric of the city is severed by the Kansas River, which then creates a boundary between central Topeka and North Topeka. An edge can be an organizational element as well like the orientation of the downtown Topeka street grid. Edges can function one of two ways: as a barrier or as a seam. Functioning as a barrier, the edge separates. Functioning as a seam, the edge joins and defines (Lynch 1960). The Kansas River, in this regard, functions currently as a barrier. This is seen as the boundary between downtown Topeka and North Topeka. On the other hand, the river has immense opportunity to function as a seam that stitches the urban fabric of Topeka back together. Looking at the nature of the city and the river, the city consists of the man-made buildings, while the river weaves the regional natural landscape through them. Both the artificial and the environmental have the opportunity of

integration and connection with the other, creating a unique contrast.

Rivers are entities that are drastically different from cities. Cities represent all that is artificial, and rivers represent the natural environment. One tries to overcome and subdue the other. However, cities and rivers are also very similar. Both connect and form the habitats of living creatures, be it people, wildlife, or vegetation. Both should, instead of competing against each other, be designed in a way to connect with each other. So, this begs the question "how can rivers and cities connect?" Rivers are connecting elements (or river corridors) between environments and peoples (May 2006). Rivers connect upstream areas to wetlands and ultimately larger bodies of water, typically lakes or oceans. The river corridors, or the river bank, provides pathways for animals to move and areas for vegetation to grow.

2.8 - Connection & Connectivity

River connectivity can be complex and has multiple perspectives. The hydrologist and landscape ecologist view of “connection” pertains mainly to either the topics of water conveyance and environmental continuity. The ecological definition of a connection is “the strength of interactions across ecotones” (May 2006). Ecotones are understood as continuous corridors or patches throughout a landscape. For example, a river is an ecotone or continuous corridor meandering through the landscape. A hydrologic definition of a connection is the interaction and conveyance of water from the floodplain to the river and from the river to the ocean. These definitions aim to keep rivers undisturbed, restore permeability, and prevent fragmentation of the landscape. Being in the context of the urban fabric, landscape and hydrology should not be the only focuses for connection in a city, although

they are important to successful design. The urban planner’s view of connection (pertaining to rivers) seeks to solve problems like making accessible ways for people to reach the river, linking rivers visually and conceptually with the city, and offering social and cultural attractions on the riverfront (May 2006). These definitions differ in focus about river connectivity, but agree on high connectivity promoting biodiversity, erosion reduction, and other damaging impacts of the built environment (May 2006). River connectivity can further be described in four dimensions: longitudinal, lateral, vertical, and temporal connectivity. Longitudinal connectivity is the linear connectivity referring to pathways along the length of a river (MN Department of Natural Resources 2019). Lateral connectivity refers to the access of a river to its floodplain (MN Department of Natural Resources 2019). Vertical con-

nectivity refers to the connection between the atmosphere and the groundwater (MN Department of Natural Resources 2019), or it can refer to the range of human activities in relation to height above the water (i.e., instream to banktop)(Kondolf and Pinto 2017). For our purposes, the latter will be used. Lastly, temporal connectivity refers to the continuous physical, chemical, and biological interactions over time, according to a predictable pattern (MN Department of Natural Resources 2019). These types of river connectivity can provide different relationships between rivers and cities. For instance, rivers were historically used in America for navigation and trade relating to longitudinal connectivity. Many changes in infrastructure alter the longitudinal connectivity of rivers today. These changes include the construction of dams, culverts, sewage treatment plants, etc. Desires to restore the ecosystems and

recreational navigation like kayaking have removed several dams hindering longitudinal connectivity (Kondolf and Pinto 2017). Looking to the lateral and vertical connectivity in rivers, people used them for fishing, washing clothes, as a water source, and for recreation like swimming or strolling (Kondolf and Pinto 2017). These connections and uses were hindered by infrastructure as well. Dams, dikes, levees, culverts, and channelized streams were among the changes to rivers affecting the connectivity. These artificial elements, created for flood control, separated the floodplains from their rivers causing increased flood levels, increased water velocity, reduced water storage and infiltration, reduced water quality, and ultimately causing more damage to cities and landscapes (Otto, McCormick, and Leccese 2004).

2.9 - Barriers to Connection

The improvement of the longitudinal, lateral, and vertical connectivity of rivers can be immensely important to cities. The access to, across, along, and around rivers improve the quality of life for urban dwellers, improve the linkages and connections to different areas of a city, provide activities and recreational uses for people to enjoy, and create a local identity of history and environment (Kondolf and Pinto 2017) (May 2006). A method for improving these relationships between city and river is best shown in accessibility. As Wrenn (1983) points out, “accessibility – the relative ease of movement to and from a site – is an important characteristic of any urban location” (Wrenn 1983). He goes on to discuss the importance of waterfronts and their unique proximity to urban centers. Accessibility tends to be an issue with waterfronts due to existing physical, institutional, and psychological

barriers. Of those barriers, physical are the most important:

“Physical barriers are the most imposing obstacles restricting waterfront access. In many instances, the construction of the modern bridge, tunnel, and highway systems across waterways and along urban shorelines was done at the expense of waterfront accessibility.”
– Wrenn (1983)

Railroads and flood control infrastructure like levees are also major barriers to physical access to waterfronts. Although constructed for good reasons like transportation and flood protection, there was a loss of direct river access, which has transformed the space. Institutional

barriers were formed by legal, political, or economic reasons that are physically accessible, however access is prevented (Wrenn 1983). Psychological barriers usually are a lack of desire to access a waterfront due to some factor. One main factor is the image of the riverfront (Wrenn 1983). If it has a bad image due to lack of maintenance or safety concerns are prevalent, then people will not go. These types of barriers can be overcome through making them accessible and connected. Accessibility can be understood in three ways: physical, visual, and psychological.

(Opposite) Figure 2.9.1 - Site Photo under the Kansas Avenue Bridge. (Johnson, 2019)



2.10 - Riverfront Development

Elements of Riverfront Design

In addition to accessing the riverfront, riverfronts need to be used for creative activity. The literature for riverfront and waterfront design and development is vast. Riverfront design and development have a few needed elements to function. L. Azeo Torre (1989), the president of the multi-disciplinary firm Torre Design Consortium, LTD., goes into the necessary riverfront elements of theme, image, authenticity, and function. Some elements that pertain to the implementation of riverfronts are public perception of need, financial feasibility, environmental approvals, construction technology, and effective management (Torre 1989). The elements of theme and image create the foundation for controlling future spatial analysis, land-use materials, scale, and meaning. Theme also responds to climate, culture, and history, while image responds to the materiality and perception of the riverfront

(Torre 1989). The element of theme on riverfronts, specifically in Topeka's case, would connect and transition the downtown district and the NOTO district. Through the use of continuities, theme can form districts in cities.

As Lynch (1960) in the *Image of the City* discusses, thematic continuities consist of elements like space, texture, form, detail, building type, use, activity, symbol, inhabitants, degree of maintenance, and topography (Lynch 1960). The composition of these elements forms a district, a connected place. Lynch (1960) defines districts as a section of the city that an "observer can mentally enter 'inside of,' and which (districts) are recognizable as having some common, identifying character" (Lynch 1960, p.41). So, for Topeka, the context of the riverfront has two main districts present: the NOTO arts district and the downtown

district. A new riverfront district, acting as a stepping stone, could potentially connect and unify the edges of these immediate two districts. There is also the possibility that one of the two districts could extend across the Kansas river to create a larger district; for example, the NOTO arts district could extend to the southern bank of the river to pull activity closer to downtown. With the definition of a riverfront district, the riverfront will be conceived of as a space on both sides of the river that are visually, physically, and cognitively connected.

Torre mentions a key development idea to keep in mind when designing or developing a riverfront, "Establish a reason for people to return to the water's edge showing them potential uses in a very personal way" (Torre 1989). Usually creating a reason or multiple reasons for people to return to a water's edge involves creating public space and activity in that

space. Offering a concert, market, or a festival for the public that makes them aware of the riverfront are examples of riverfront activities. Designers should theme the riverfront in such a way that would have local groups feel ownership of the place and create other activities. Some temporary activities exist in Topeka and are well-known: the Farmer's Market in downtown, First Friday Art Walk in NOTO, and Germanfest in Oakland to name a few. Some activities could be relocated to the riverfront and be better-suited there. New activities could be introduced like kayaking, trail-running, dining, recreational, and even educational activities. These lead us to the last major aspect to be considered, the function of the riverfront. The function of the riverfront asks, "what is there to do?" Torre defines set experiences and free experiences of function. A "set" experience is the opportunity presented for shops and commercial establishments to sell and profit. A "free" experience is the opportunity that offers people-watching, relaxing, sitting, and eating. Both types of experiences working together in harmony are essential to the success of the riverfront (Torre 1989).

Project for Public Spaces addresses the objectives for a successful lively riverfront destination. The organization

lays out a list of thirteen objectives to achieve. These summarized objectives include the importance of the community's and city's desires to determine public goals and a shared vision for the riverfront (PPS 2018). If the objectives are fulfilled, they ensure the success and use of the space. The creation and connection of multiple destinations is also important in that they draw and attract stakeholders, businesses, and residents to form the character of each destination to how they desire (PPS 2018). This ensures multiple layered activities by multiple users. The connection between the destinations creates a walkable network that strengthens the different groups of activity. Parks should be used as connecting and linking elements between destinations, not as destinations themselves (PPS 2018). Activity at, along, and near the riverfront is encouraged to promote constant activity by limiting residential development. Activities should be varied for seasonal activity by multiple user groups. Public access of the riverfront should be improved for seamless continuity along the riverfront (PPS 2018). Multifunctional buildings and spaces are encouraged to promote iconic and symbolic landmarks (PPS 2018). Maintenance can determine the life of the riverfront as it can keep it clean and working well for generations, or poor

maintenance can cause the riverfront to die as a place (PPS 2018). These objectives can guide the design and development of a successful riverfront project and should be noted.

2.11 - Summary of Literature Review

Topeka, Kansas is rich with history but has neglected its river over the last several decades. Relating the history that American river cities underwent in the last 200 years helps us understand why riverfronts are treated as abandoned or lost space in cities. It also shows how American cities have been disconnected from their rivers by changes in modes of transportation, alterations in rivers for flood control, and shifting commercial centers. Recent projects in downtown Topeka and the NOTO district display the desire of the city for improvement of its urban core.

In understanding the theories of urban design, an integrated approach to urban design addresses the layered nature of cities. By specifically addressing the spatial definition, connective qualities, and social and cultural needs of public space, urban design can create meaningful and unique

places for people to enjoy.

Rivers have often been the birthplace of cities like Topeka. Rivers often are seen as boundaries or barriers to overcome, but they act also as connecting entities of the natural world. As connecting entities, rivers possess the unique potential to integrate with cities, creating a balance of the artificial and the natural. Examining the connectivity of rivers, connection can be made in four dimensions: longitudinally, laterally, vertically, and temporally. Of these types, the first three show the potential, when improved through design, to create connection to, across, and along a river in an urban environment. A variety of activities is produced by each type of connectivity that can link people to river physically, visually, and psychologically. Some of these activities are active like swimming, running, or biking, while other are passive

like watching, relaxing, and sitting.

Riverfronts possess the unique potential to link rivers longitudinally, laterally, and vertically with the urban fabric, since they transition between the urban fabric and the river. Moving to essential elements of riverfront development, four elements can make or break a riverfront. These elements are theme, image, authenticity, and function. The creation of a themed riverfront district can heighten the

experience of the Kansas River and forms a destination that link the NOTO district with the downtown district of Topeka. In the design of a riverfront, there are a few more elements that adds to the success of riverfronts. Through addressing the community's goals, creation of multiple destinations, connection between the destinations, ensuring constant year-round activity by many user groups, utilizing many forms of transportation, use of multifunctional space, and maintenance a riverfront can become a successful amenity. Lastly, Topeka's goal to "re-establish Downtown Topeka as a family-oriented, economically sound, culturally vital and visually attractive regional destination – the center and symbol of Topeka and Shawnee County" can be realized in the creation of a transitional riverfront district that unites its urban core and exemplifies its identity.

There have been other examples of successful riverfronts that have improved the cohesiveness of urban cores and livability of the city. Some of these precedents can be studied to understand the factors and elements that aid in the success of these places. These elements and factors can then guide the design of the Topeka Riverfront to support its success. Understanding the historical documents, maps, and plans of the Topeka

Riverfront will further establish the context of the Riverfront while inspiring the design. Finally, the site for the Topeka Riverfront will need to be inventoried and analyzed for the design to respond appropriately to the existing conditions.



“It is at the edge that man is at his best, that life is its most vibrant and reiterative of the beauty and complexity of our adopted communal existence.”

L. Azeo Torre, *Waterfront Development*

The view of a sunflower mural located on Laurent Street in the North Topeka Arts District (NOTO). Over the past few decades, the NOTO Arts District improved itself to become a destination for many Topekans. The District hosts the First Friday Art Walk that attracts hundreds, and

sometimes thousands of visitors to North Topeka. The District seeks to increase its presence in the area as well as raise awareness as a destination to the rest of the city and region.



*Figure 3.0.1 - View of the Sunflower Mural in the
NOTO Arts District (Johnson, 2018)*

3

Methodology

This section describes the research and design process that this project uses to answer the questions posed in Chapter 1: Introduction. Research methods include archival research, precedent studies, and site inventory & analysis.

3.0 - Methodology

The goal of the methodology is to show the research collection and analyzation process. Through this process, I will answer my question of “How can the Kansas Riverfront unite the NOTO District and downtown Topeka to create a more connected and cohesive urban core?” This question will be answered by developing a projective design of the Topeka Riverfront on the Kansas River. The research methods incorporated into this project include:

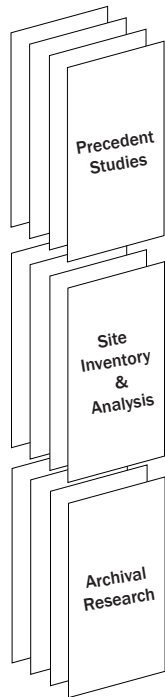
- Precedent Studies
- Ethnographic & Archival Research
- Site Inventory & Analysis

Data collected and analyzed from these methods will inform the design of the study area along the Kansas River.

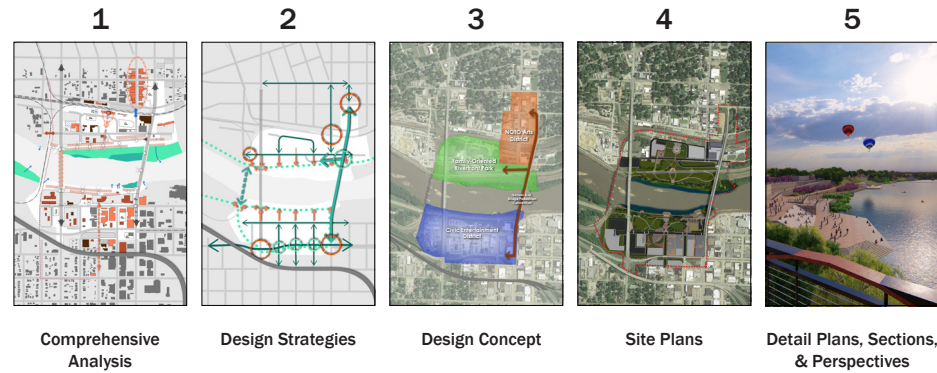
The data collected from the research methods will be analyzed and compiled to create guidelines and maps that better inform design strategies appropriate for the site. The strategies will guide the design concept and ultimately the final design of the site. The results of this final design will answer the questions posed in Chapter 1.

Research & Design Process

Methods



Products



Reflection

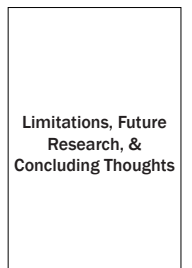


Figure 3.0.2 - Research & Design Process Diagram
(Johnson, 2019)

3.1 - Precedent Studies

The study of precedents provide information into the finished design of similar sites and in particular, riverfronts. Examining the factors of circumstance and design, understanding of these projects will help guide the design of the Topeka Riverfront. The precedents chosen to be studied are as follows:

- Smale Riverfront Park
- Allegheny Riverfront Park
- Commons Park
- Ross's Landing Park

These precedents were chosen because the sites and their cities have a similar history in terms of development with Topeka. Beginning as results of westward expansion of the US, they were founded on rivers with an important focus on their rivers and riverbanks. As commercial centers and modes of trade

and transportation shifted, the riverfront usages changed and eventually were abandoned. In recent years, these cities have revitalized their riverfronts and they have become active connected places.

Looking into the concepts, elements, and outcomes of design of these precedents will help inform the design of the Topeka riverfront. Some precedents were not chosen because they have a different context and development history to inland American river cities. For example, the Chicago Riverfront was not selected because of its proximity to the Great Lakes, which would affect the use of the riverfront as opposed to a singular waterway without a nearby body of water. Understanding the intended client of the design can change the implications and results of design, such as a private client may desire to create a place that generates economic benefit. If the client is the city

or a community, the design should reflect the desires of those entities like providing for the public good by creating parks or gathering places. The intended client of the precedent will also have differing economic feasibility. The following factors will be collected and analyzed from the four precedents:

1. Site Context
2. Client & Designer
3. Project Longevity
4. Design Goals
5. Amenities, activities, & Surrounding Land Uses
6. Accessibility
7. Socio-Economic Aspects & Effects
8. Site Definition & Flood Control

3.2 - Archival Research

The archival research delves into the historical, city, and county documents of Topeka, Kansas. The historical documents will include maps, plans, photographs, and other images detailing the development of Topeka since its founding, and in particular the development of the riverfront throughout time. An understanding of the identity and character of the riverfront will aid in the design and connections between the people and the history of Topeka.

The city documents provided by the City of Topeka and other foundations will benefit the project by providing the goals, plans (past, present, or future), and strategies to achieving those goals for consideration and rationale for this project. The documents will include comprehensive plans, neighborhood plans, land use plans, pedestrian and bikeway plans, revitalization plans, city zoning maps, etc.

3.3 - Site Inventory & Analysis

The inventory and analysis of the site will gather and examine local factors for consideration that will inform the projective design. An inventory of the main features of the site and a site analysis of opportunities and dilemmas presented on-site will be necessary to begin the design of the riverfront. The site inventory and analysis will create a program for the site, which will help inform the site design.

The site inventory will record features that, once analyzed, will help to understand, program, and design a strategy for the site design. Photographs will be taken of existing features of the site when visiting the site.

In addition to the inventory, a site analysis has been developed to guide the analysis. The analysis will inform the design of the site by identifying opportunities and dilemmas that be used to create a design strategy for the site. From the

program, the analysis will be categorized into three categories: linkage & connection, riverfront amenities, and identity & destination.

Linkage & Connection:

Programming for linkage is designed to create connection to, along, and across the riverfront through physical, visual, and psychological means. Programming includes connection routes across bridges, along trails, and street systems; creation of sight lines, visual axes, and wayfinding; comfort increase through safety and lighting.

Riverfront Amenities:

Programming for amenities is designed to attract residents and visitors to the riverfront. Programming includes creation of mixed-use development, observation points, boating, kayaking, fishing, wildlife viewing, natural areas, edge conditions, and recreational activities. Elements include kayaking areas, fishing areas, plazas, gathering spaces, seating, public parking, and restrooms.

Identity & Destination:

Programming for identity is designed to instill a local pride and sense of destination in the riverfront. Programming seeks to promote the art, history, and culture of the city. Program elements include landmarks, museums, local art, events, festivals, markets, a themed district, and educational signage.

“Establish a reason for people to return to the water’s edge showing them potential uses in a very personal way.”

L. Azeo Torre, Waterfront Development



North Topeka is rich with culture, art, and local pride. One element showing this rich identity is the Great Overland Station just southwest of the NOTO Arts District. This no-longer functioning train station is home to a museum and the Kansas Hall of Fame. In front of the

station is a World War II memorial shaped as a metal flame that is unique to the area and shows a strong relationship of art and sculpture with North Topeka.



*Figure 4.0.1 - View of the Great Overland Station & the
WWII Memorial Sculpture (Johnson, 2018)*

4

Findings

This section details the findings of the methods employed and displays the rationale for the Topeka Riverfront projective design. The section begins with precedent studies and archival research leading to analysis of the site area. Findings from these methods inform design guidelines, desired goals of the city, and a comprehensive analysis of the site. This analysis informs ten design strategies to lead the projective design for the Topeka Riverfront.

4.1 - Precedent Studies

The study of precedents provide information into the finished design of similar sites and in particular, riverfronts. Examining the factors of circumstance and design, understanding of these projects will help guide the design of the Topeka Riverfront. The following factors were collected and analyzed from the four precedents:

1. Site Context
2. Client & Designer
3. Project Longevity
4. Design Goals
5. Amenities, activities, & Surrounding Land Uses
6. Accessibility
7. Socio-Economic Aspects & Effects
8. Site Definition & Flood Control

The findings were categorized into a table and compared to Topeka's riverfront. The findings of this comparison were deduced from to create design guidelines for the projective design of Topeka's riverfront.



(Top Left) Figure 4.1.0.1 - Aerial Plan of Allegheny Riverfront Park (Johnson, 2019)

(Top Right) Figure 4.1.0.2 - Aerial Plan of Allegheny Riverfront Park (Johnson, 2019)

(Bottom Left) Figure 4.1.0.3 - Aerial Plan of Commons Park (Johnson, 2019)

(Bottom Right) Figure 4.1.0.4 - Aerial Plan of Ross's Landing Park (Johnson, 2019)



4.1.1 - Smale Riverfront Park | Cincinnati, OH

Cincinnati is the first precedent riverfront city. The city began as a small village situated on the banks of the Ohio River. Later the town's name was changed to Cincinnati as the town developed into a city due to its strategic location on the Ohio River. The city continued to grow as westward expansion occurred during the 19th century and became a major business and transportation hub for travel along the Ohio. The political history of Cincinnati was a crossing point from pro-slavery Kentucky into anti-slavery Ohio. By the late 1800's, Cincinnati was a major industrial, business, political, and transportation (railroad) hub. More recently, Cincinnati has grown into a cultural hotspot for the region (Ohio History Connection 2019).

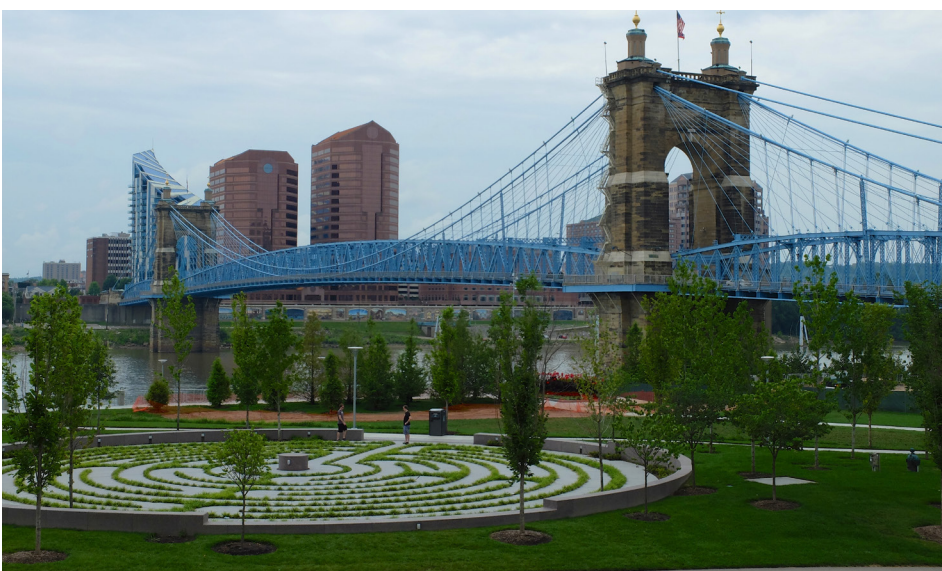
Moving to the precedent site, Smale Riverfront Park is located south of downtown Cincinnati. This 32-acre park

reconnects downtown to the Ohio River as well as joins other additional riverfronts east of the site. Terraces along the park protect against the damage of seasonal flooding and allow for continued activity in times of high water. Designed by Sasaki, the park creates a unique landmark and contributes to the identity of the city. It is the largest park in a series of parks linked through trails and multiple amenities (Sasaki Associates 2019).

(Top) Figure 4.1.1.1 - Summer in the City (Cawood, 2012)

(Opposite Top) Figure 4.1.1.2 - Aerial Plan of Smale Riverfront Park (Johnson, 2019)

(Opposite Bottom) Figure 4.1.1.3 - John A. Roebling Bridge (Thouvenin, 2013)



Location, River, & Size:

Cincinnati, OH
Ohio River (1,250' wide)
32 acres (2,100' x 660')

Designers:

Sasaki Associates
KZF Design

Client:

Cincinnati Park Board

Design Concept:

Re-establish the link between downtown Cincinnati and the Ohio River.

- Create a Grand Civic Space
- Offer Pedestrian river visual and physical accessibility
- Make specific areas for festivals or events

Findings:

- Accent existing landmarks
- Invite people with river access
- Link people throughout the city through different methods of transportation



4.1.2 - Allegheny Riverfront Park | Pittsburgh, PA

Pittsburgh is a second precedent city. The city was settled as an industrial center located at the confluence of the Allegheny and Monongahela Rivers, which begins the headwaters of the Ohio River. Pittsburgh (a.k.a. The ‘Gateway to the West’ and ‘Iron City’) was known for its commerce and manufacturing capabilities, namely its iron, glass, coal, and steel production (Popular Pittsburgh 2015). Construction of bridges, canals, and railroads greatly improved the city’s commerce and trade abilities between east and west. People were attracted to the city because of its rivers and the jobs in mills and factories that those rivers provided. Pittsburgh grew rapidly during World War 2 when demand for iron and steel increased. After the war, the city sought to lessen its air pollution to create a more modern city. When the steel industry collapsed in the 1970’s and 80’s, the economy shifted to medicine,

technology, education, and banking (Popular Pittsburgh, 2015).

Focusing on Allegheny Riverfront Park, the park is located near the confluence of the Allegheny and Monongahela Rivers and continues along the Allegheny and Fort Duquesne Boulevard. This park is over 3,000 feet long and is 30-50 feet wide at different points. Originally planned by Frederick Law Olmsted Jr., highways dominated the riverfront. Designed by Michael Van Valkenburgh Associates, Ann Hamilton, and Michael Mercil, the park is a riverfront trail that splits into two levels. An upper level reflects an urban influence and a lower level reflects a more natural organic edge to the river. The park links to the Three Rivers Heritage Trail which connects to downtown and many surrounding areas along the Monongahela River (Mercil 2001). This precedent

site can influence the potential design of linear park systems to connect and link multiple locations for the Topeka Riverfront. Allegheny Riverfront Park can show the possible economic and social improvements that riverfronts can provide to their cities.

(Top) Figure 4.1.2.1 - Picture of Andy Warhol Bridge and the trail system (Landscape Voice, 2012)

(Opposite Top) Figure 4.1.2.2 - Aerial Plan of Allegheny Riverfront Park (Johnson, 2019)

(Opposite Bottom) Figure 4.1.2.3 - Facing west toward 7th Street bridge (Mercil, 2001)



Location, River, & Size:

Pittsburgh, PA
Allegheny River (804' wide)
3 acres (3,000' x 30'-50')

Designers:

Michael Van Valkenburgh Associates
Ann Hamilton
Michael Mercil

Client:

Pittsburgh Cultural Trust

Design Concept:

Connect the Cultural District in downtown Pittsburgh with the Allegheny River.
• Create an experiential pathway that

functions as artwork

- Increase public use of the narrow space
- Integrate natural and urban landscape
- Challenged by elevation change (25'), visuals, and noise.

Findings:

- Riverfronts require resilient design
- A city-nature integration enhances the pedestrian experience.
- Narrow sites can be optimized as a circulation corridor when prioritizing the pedestrian experience.



4.1.3 - Commons Park | Denver, CO

Denver is the third precedent riverfront city and was founded at the confluence of the South Platte River and Cherry Creek in 1858. The city was founded to accommodate travelers and settlers moving west. Denver experienced explosive growth when the railroad arrived to the city in the late 1800's. The economy experienced increased manufacturing, agriculture, stockyards, and other industries. In the 1900's, Denver attracted oil and gas corporations and developed multiple distribution centers. As a result, the city became one of the major transportation hubs of the United States.

Denver's Commons Park is located along the South Platte River northwest of Denver's downtown. The site was a brownfield site owned by the Burlington Northern Railroad for many years before being revitalized into Commons Park. The 20-acre park is rooted in the history

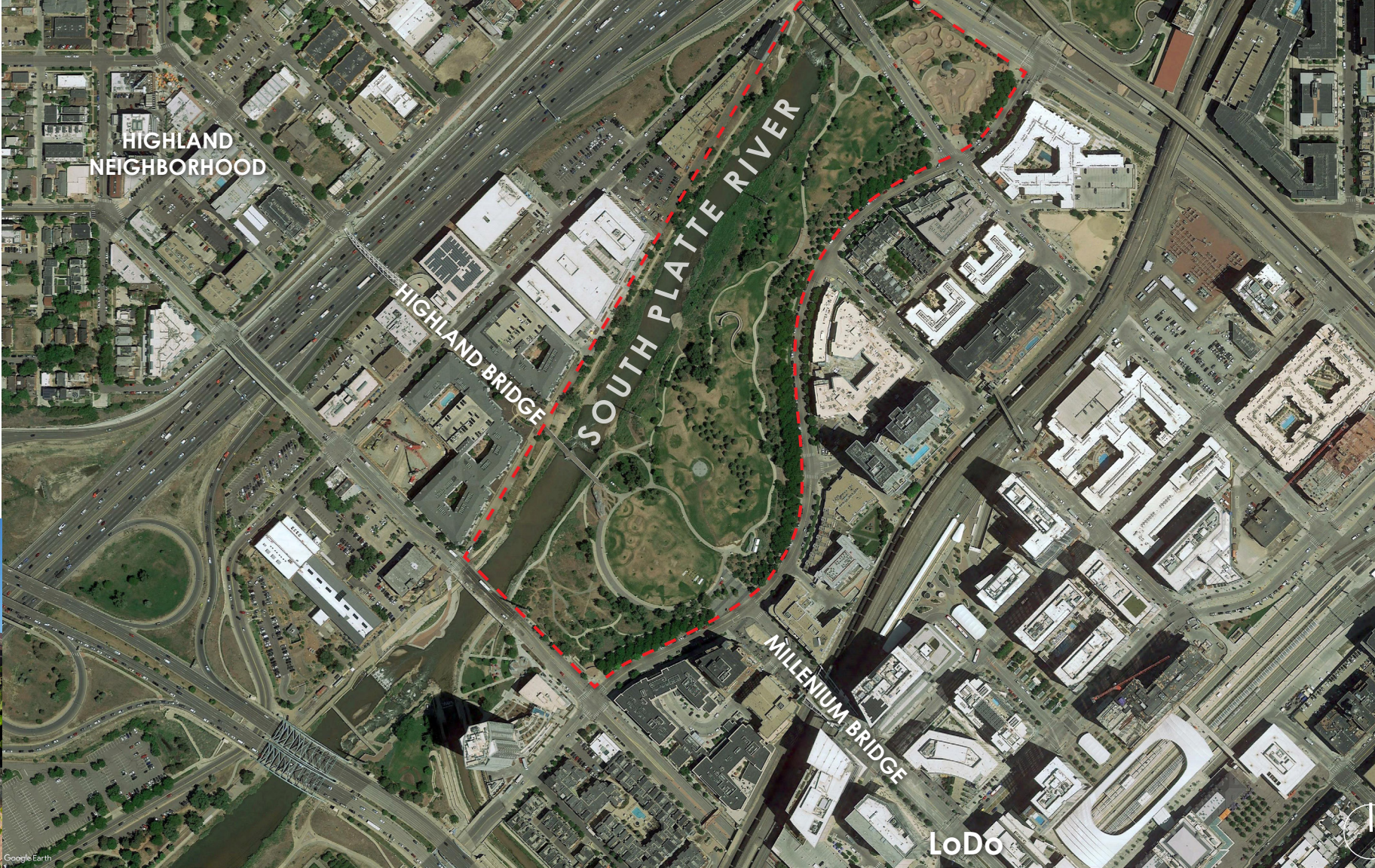
of Denver being located north of the confluence of the South Platte River and Cherry Creek. The park connects the city to the river, along the South Platte via a 17-mile trail, and across the river via two pedestrian bridges. The riverbanks were ecologically restored and pedestrian connections were designed into the park by Civitas, Jones & Jones Architecture and Landscape Architects, and Design Workshop (Civitas 2019). This precedent will help inform how riverfronts can transition between the downtown and other districts of cities via pedestrian connections and activities. It will also aid in possibly incentivizing economic, social, cultural, and ecological improvements through riverfront development.



(Top) Figure 4.1.3.1 - Aerial View of Commons Park (Civitas, 2001)

(Above) Figure 4.1.3.2 - Denver - LoDo: Commons Park - Platte River Bridge (Gobetz, 2011)

(Opposite Top) Figure 4.1.3.3 - Aerial Plan of Commons Park (Johnson, 2019)



Location, River, & Size:

Denver, CO
South Platte River (109' wide)
20 acres (2,200' x 400')

Designers:

Civitas
Jones & Jones Architects and Landscape Architects

Client:

City of Denver

Design Concept:

Create a walkable riverfront center for new people to visit, live, work, and play in an expanded downtown.

- Designed through public meetings aimed to give life back to the river
- Restore 10-acres of habitat, wetlands, and river bottom
- Make specific areas for large and small gatherings
- Centralizes multiple trails and greenways

Findings:

- Riverfronts can help educate on a city's history and identity.
- Many forms of transportation should be used.
- Year-round activity retains the liveliness of a riverfront.



4.1.4 - Ross's Landing Park | Chattanooga, TN

The final precedent riverfront city is Chattanooga, which began as a ferry crossing located on the Tennessee River, called Ross's Landing. Chattanooga grew into an industrial city with multiple factories and railroads. The city witnessed many historical events such as the Trail of Tears and the American Civil War. It was known as the gateway to the Deep South which Union and Confederate armies needed for travel. Chattanooga, after the civil war, continued as an industrial city, but slowly began deteriorating because of pollution and sprawl (City Parks Alliance 2017). The city lost connection between its history and identity in the Tennessee River.

The city's Ross's Landing Park is located north of downtown Chattanooga. This 3-acre park features a river pier, marina, and a natural amphitheater. The Chattanooga Green, also found in the

park, is used for festivals and concerts, and offers an amazing view of the Tennessee River. The park is situated next to the Tennessee Aquarium and AT&T Field and connects to downtown Chattanooga. The park links the rest of the city via the Tennessee Riverwalk and pedestrian bridges connecting both banks of the river. This precedent offers amenity alternatives that emphasize the history, culture, and identity of a city, which can be used to better inform and guide the design of Topeka's riverfront.

(Top) Figure 4.1.4.1 - Head of the Hooch (Flanders, 2013)

(Opposite) Figure 4.1.4.2 - Aerial Plan of Ross's Landing Park (Johnson, 2019)



Location, River, & Size:

Chattanooga, TN
Tennessee River (1,100' wide)
16 acres (2,500' x 280')

Designers:

EDAW, James Wines, Jack Mackie, Stanley Townsend (old design)
Hargreaves & Associates, & Chattanooga's Planning and Design Studio (21st Century Waterfront design)

Client:

City of Chattanooga

Design Concept:

Connects the Tennessee Aquarium and Downtown Chattanooga to the River

- Fully connect the community to and along the river
- Provide a unique and authentic Chattanooga experience
- Create a 24-hour waterfront
- Incorporate local artwork and history
- Provide space for multiple activities and venues

Findings:

- Temporary events attract and increase awareness of a site.
- Retain existing amenities. Local art accents identity and history that establishes a site as a destination.
- Reuse existing infrastructure when necessary.

	Site Context	Client & Designer	Project Longevity	Design Goals	Amenities, Activities, & Surrounding Land Uses
Smale Riverfront Park	Cincinnati, OH; Ohio River; 32 acres; Birthplace of the city, village, shipping industry	Cincinnati Park Board; Public client; Sasaki Associates, KZF Design	Planning: 1997-2008; Construction: 2008-2012(through 2015); Completion: 2012 (first phase) & 2015 (final phase)	Goal: Re-establish the link between downtown and the river. Sub-Goals: Create a Grand Civic Space, improve river access, and design event areas.	Water features, gardens, event lawns, playgrounds, pavilions, trail systems, public docks and wharfs, a promenade; walking, biking, playing, events and festivals, public gatherings, water activities. Nearby are an entertainment and mixed-use district accompanied by commercial and educational land uses.
Allegheny Riverfront Park	Pittsburgh, PA; Allegheny River; 3 acres; narrow leftover space seperated by highways	Pittsburgh Cultural Trust; Private client; Michael Van Valkenburgh Associates, Ann Hamilton, Michael Mercil	Planning: 1994; Construction: 1994-1998; Completion: 1998 (lower tier) & 2001 (upper tier)	Goal: Connect Cultural District in downtown with the river. Sub-Goals: Increase public usefulness of space & integration between nature and city	Trail System, urban streetscape, local public art, docking area; biking, walking, kayaking, viewing, tours. Nearby are a cultural district, sports venues, North Shore district, parks, and a convention center.
Commons Park	Denver, CO; South Platte River; 20 acres; Native American gathering place, gold discovered, birthplace of the city, industrial site (railyards & warehouses) that turned into a brownfield	City of Denver (Denver's Mayor Office); Public client; Civitas, Jones & Jones Architects and Landscape Architects	Planning: 1991; Construction: 1991-2001; Completion: 2001	Goal: Create a walkable riverfront center for new people to visit, live, work, and play. Sub-Goals: Site Restoration & Reconnection to surrounding city.	Habitat restoration, gathering spaces, a promenade, shade structures, trail systems, and sculptures; sledding in winter, picnics, games, and cycling. Nearby are restaurants, breweries, union station, and LoDo District.
Ross's Landing Park	Chattanooga, TN; Tennessee River; 16 acres; Cherokee trading post, birthplace of the city; Trail of Tears launching point	City of Chattanooga; Public client; (Initial design in 1986) EDAAW, James Wines, Jack Mackie, Stanley Townsend; (21st Century Waterfront in 2002) Hargreaves & Associates, Chattanooga's Planning and Design Studio	Planning: 1986 (first design) & 2002 (21st Century Waterfront); Construction: unknown (first design) & 2002-2005 (21st Century Waterfront); Completion: 1992 (first design) & 2005 (21st Century Waterfront)	Goal: Reconnect city to the river through "living, working, playing, and learning at the river." Sub-Goals: Connect community to river, provide a unique experience, & create a 24-hour riverfront	Tennessee Aquarium, local art, playgrounds, a marina & a pier, the seating areas, open gathering areas, and a trail system. Nearby are a sports venue, museums, riverfront parks, and city center.
Findings from each category	Sites are their city's birthplaces, and they were brownfields & abandoned spaces.	Public entities started projects. Artists worked closely with landscape architects.	Time required for projects take from 4 years to 18 years, if not more.	Reconnection through walkable environments between cities and rivers were primary goal.	Identity through landmarks and local art, trail connections, focus on people and nature. Entertainment, educational, commercial, recreational uses surrounded sites.

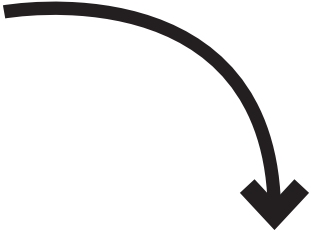
Accessibility	Socio-Economic Aspect Effects	Site Definition & Flood Control	Findings from each precedent
A historical bridge links the site to both sides of the river. People walk, bike, drive, or use public transit to the park. River access is both visual and physical through views, and contact with the river.	Functions as a catalyst site; incentivized development of an entertainment district; connection to other parks; improvement of public transportation; improvement of water quality of the river	The site is defined by a highway and streets, stadium parking lots, and the river. The park uses a terraced strategy to protect from seasonal flooding.	Accent existing landmarks, invite people with river access, and link people throughout the city through different methods of transportation.
Three bridges connect the park to both sides of the river. People walk, bike, kayak, or drive to the park. Two ramps connect both levels of the park. River connection is visual, physical, and psychological (art reflecting river).	Catalyzed riverfront development; streetscape redesign; linked trail system and nearby park; connection between nearby districts	The site is defined by highways and streets, a park, a cultural district, and convention center parking lots. The park uses a two-tiered flood control system.	Riverfronts require resilient design. A city-nature integration enhances the pedestrian experience. Narrow sites can be optimized as a circulation corridor when prioritizing the pedestrian experience.
People access by foot, bicycle, bus, or car. Bridges connect over highways and railroads to the park. Riverfront trails connect to other parks and the greenway. Connection to the river is primarily visual but still includes some physical access.	Functions as a catalyst site; increased land values and incentivized new development; promoted connection between different districts and neighborhoods; restored native habitat of the river.	The site is defined by streets, mixed-use developments, parks, and a railroad. Sloped banks are the primary flood control infrastructure.	Riverfronts can help educate on a city's history and identity. Many forms of transportation should be used. Year-round activity retains the liveliness of a riverfront.
People walk, bike, kayak, or drive to the park; nearby bridge connections to opposing riverbanks; connection to river is visual and physical.	Conversion of highway to become pedestrian-friendly; creation of event space; incentivized \$1 billion+ of private investment.	The site is defined by streets, stadium parking lots, an aquarium, a museum, and other riverfront uses. The park utilizes a terraced, stepped, and sloped green strategy to protect from flooding. A dam exists upstream.	Temporary events attract and increase awareness of a site. Retain existing amenities. Local art accents identity and history that establishes a site as a destination. Reuse existing infrastructure when necessary.
Linkage along, across, and to the river's edge were important. Visual and physical access connect to the river and are important to design.	Sites function as catalysts for new development, fuel city economy, and incentivize nearby districts.	Streets, elevation changes, and differing land use define sites. Floods were controlled by tiered/terraced designs and sometimes used sloped greens.	

Figure 4.1.5: Precedent Studies Findings Chart (Johnson, 2019)

	Site Context	Client & Designer	Project Longevity	Design Goals	Amenity, Activities, & Surrounding Land Uses	Accessibility	Socio-Economic Aspect Effects	Site Definition & Flood Control	Findings from each precedent
Heard Riverfront Park	Cincinnati, OH, Ohio River, 12 acres, backdrop of the city, village, shipping industry	Cincinnati Park Board, Public client, Social Associates, LLP Design	Planning: 1917-1926, Construction: 1926-1928/1930, Completion: 2012 (first phase), 2013 (final phase)	Goal: Re-establish the link between downtown and the river Sub-Goals: Create a shared city space, improve river access, and design event space.	None between, gardens, event lawn, restaurants, offices, and some retail on one side, a promenade, walking, biking, skating, and tennis on the other. Nearby are a cultural district, sports venue, North Shore district, parks, and a commercial center.	A historical bridge links the site to both sides of the river. People walk, bike, drive, or use public transit to the park. River access is both visual and physical through views, and contact with the river.	Functions as a catalyst for neighborhood development of an entertainment district, connection to other parks, improvement of public transportation, improvement of water quality of the river	The site is defined by a highway and streets, stadium parking lots, and the river. The park site is a terraced strategy to protect from seasonal flooding.	Accent existing conditions, make people walk with river access, and use access throughout the city through different methods of transportation.
Allegheny Riverfront Park	Pittsburgh, PA, Allegheny River, 5 acres, various reflow space separated by highways	Pittsburgh Cultural Trust, Private client, Michael van Valkenburgh Associates, Inc., Hardscape, Michael Mout	Planning: 1996, Construction: 1996-1998, Completion: 1998 (lower level), 2001 (upper level)	Goal: Connect Cultural District to downtown with the river Sub-Goals: Increase public, cohabitation of space & integration between nature and city	First layer, urban streetscape, local public art, walking area, biking, walking, listening, viewing, tennis, nearby are a cultural district, sports venue, North Shore district, parks, and a commercial center.	Three bridges connect the park to both sides of the river. People walk, bike, or drive to the park. Two large covered walkways of the park. River connection is visual physical, and a privileged path reflecting river.	Catalyzed riverfront development, bridge walkways, initial trail system and nearby park, connection between nearby districts	The site is defined by highway and streets, a park, a cultural district, and connection center parking lots. The park uses a less formal flood control system.	Riverfronts require resilient design, a city culture integration enhances the pedestrian experience. Riverfront design can be achieved as a resilient design after absorbing the pedestrian experience.
Commons Park	Denver, CO, South Platte River, 20 acres, before American gathering place, golf discovered, birthplace of the city, industrial (oil refineries & warehouses) that turned into a brownfield	City of Denver (Denver's Major Office), Public client, Cullins, Jones & Jones Architects and Landscape Architects	Planning: 1971, Construction: 1980-1991, Completion: 2001	Goal: Create a valuable riverfront center for new people to visit, live, work, and play Sub-Goals: Site restoration & reconstruction to surrounding city.	Historic restoration, gathering spaces, a promenade, public programs, retail, offices, and outdoor, walking on water, parks, games, and dining. Nearby are a cultural district, sports venue, North Shore district, parks, and a commercial center.	People access by foot, bicycle, bus, or car. Bridges connect river, highways and railroads to the park. Riverfront walk access to other parks and the greenway. Connection to the river is primarily visual but still includes some physical access.	Functions as a catalyst for increased retail values and incentivized new developments, promoted connection between different districts and neighborhoods, restored active habitat of the river.	The site is defined by streets, mixed-use developments, parks, and a cultural district. Riverfronts are the primary flood control infrastructure.	Riverfronts can help educate on a city's history and identity. Many forms of transportation should be used. Riverfront activity retains the business of a riverfront.
Ross's Landing Park	Chattanooga, TN, Tennessee River, 16 acres, Overlook trail, birthplace of the city, Tourist's launching point	City of Chattanooga Public client, (Bridal design in 1980) Estate, James Wilson, Jack MacKie, Stanley Townsend, (2010) Gehry Waterfront in 2002, Hargreaves & Hargreaves, Chattanooga Planning and Design Studio	Planning: 1980 (first design & 2002 (2010) Gehry Waterfront), Construction: unknown (first design & 2002-2008 (2010) Gehry Waterfront), Completion: 1980 (first design & 2002 (2010) Gehry Waterfront)	Goal: Reconnect city to the river through "living, working, playing, and learning at the river" Sub-Goals: Connect community to river, provide a unique experience, & create a 24-hour riverfront	Tennessee Aquarium, local art, playgrounds, murals & art, the walking area, open gathering area, and a retail center. Nearby are a sports venue, museum, riverfront park, and city center.	People walk, bike, kayak, or drive to the park, works bridge connections to existing riverfronts, connection to river is visual and physical.	Conversion of highway to become pedestrian friendly, creation of event space, riverfront \$2 billion of private investment.	The site is defined by streets, stadium parking lots, an apartment, a museum, and other riverfront uses. The park utilizes a formal, steep, and steeped grass design to protect from flooding & dam within upstream.	Temporary events attract and increase awareness of the riverfront. Temporary events attract and increase awareness of the riverfront. Temporary events attract and increase awareness of the riverfront.
Findings from each category	How are their city's birthplace, and how are their birthplace & observational space.	Public entities, shared projects, artists worked closely with landscape architects.	Time required for projects vary from 1 year to 10 years, if not more.	Reconnection through walkable environments between city and river were primary goal.	Identify through landmarks and local art, that connections, focus on riverfronts and nature. Entertainment, educational, commercial, recreational, and community spaces.	Unique design, access, and to the river, riverfronts are important. Visual and physical access connect to the river and are important to design.	Site function as catalyst for new developments, local site recovery, and physical access connect to the river and are important to design.	Streets, observation changes, and offering land use deliver river. Parks were constructed by landscape architects and sometimes used event space.	

(Left) Figure 4.1.6: Precedent Studies Findings Chart (Johnson, 2019)

(Below) Figure 4.1.7: Precedent Studies Comparison Chart (Johnson, 2019)



	Smale Riverfront Park	Allegheny Riverfront Park	Commons Park	Ross's Landing Park	Topeka Riverfront
Stadiums	Yes	Yes	No	Yes	No
Trail Connections	Yes	Yes	Yes	Yes	Somewhat
Event Spaces	Yes	No	Yes	Yes	Somewhat
Views to River	Yes	Yes	Yes, but hindered	Yes	Somewhat, hindered
Physical Access to River	Yes	Yes	No	Yes	Yes, but informal access
Local Art (Sculpture, murals, etc)	Yes	Yes	Yes	Yes	Somewhat, nearby
Museums or Aquariums (in or nearby park)	Yes	Yes	No, but 1/2 mile away	Yes	Yes
Mixed Use Districts (in or near park)	Yes	Yes	Yes	Yes	Yes
Pedestrian Connection across River	Yes	Yes	Yes	Yes	Somewhat, pedestrian unprioritized
Landmarks (in or nearby park)	Yes	Yes	Yes	Yes	Yes
Park Activities (picnics, playing, etc)	Yes	Somewhat	Yes	Yes	No
Water Interaction (kayaking, wading, pools, etc.)	Yes	Yes	No	Yes	No
Temporary Events (Festivals, Concerts, etc.)	Yes	Yes	No	Yes	No
Public Transit	Yes	Yes	Yes	Yes	Yes

Figure 4.1.8: Guidelines Derived from Precedents *(Johnson, 2019)*

Riverfront Amenities & Activities Guidelines:	Linkage & Connection Guidelines:	Identity & Destination Guidelines:
• Design open spaces for mixed-use and event usage. • Spaces should aim for multiple functions that will create a greater range of activity. • Attract people to the riverfront via temporary events and festivals. • Activity on-site should strive for 24-hour and year-round activity. • Design for a mix of land uses to establish activity during daylight hours. • Activity and interaction with water improves experience of the riverfront.	• Attract people to the riverfront via visual and physical access to the river. • Connect people to the site by promoting multiple means of transportation. • Connect people along the river, across the river, and to the river's edge. • Design streets and bridges to be pedestrian-friendly. • Establish or connect to a trail system that links to other parks throughout the city. • Provide adequate flood protection strategies. • Design should strive to function as a catalyst for investment into nearby districts and neighborhoods.	• Accent existing landmarks & create new landmarks, if necessary to establish sense of place. • Utilize local art that addresses the local history of a place. • Design event areas for temporary events or festivals to instill local pride in the place. • Integrate nature and the city • Protect native habitats and ecosystems along river. • Create unique places informed by a site's culture and history.

The precedent studies' findings were collected and analyzed to form 14 factors. These factors are interpreted as factors incentivizing new development or leading the projects to become catalysts for new development. These factors were as follows:

- Stadiums
- Trail connections
- Event spaces
- Views to river
- Physical access to river
- Local Art
- Museums or Aquariums

- Mixed use districts
- Pedestrian connections across river
- Landmarks
- Park activities
- Water interaction
- Temporary events
- Public transit

These factors were compared to the other precedents as well as to Topeka's riverfront. Smale Riverfront Park and Ross's Landing Park both checked positive on all factors, while the Allegheny Riverfront and Commons Park checked positive on most of these factors. When

compared to Topeka, less than half of the factors were marked as positive and most were neutral. These factors show that Topeka is in need of improving its riverfront if new development, economic interest, or an attractive riverfront amenity is desired.

From this comparison between precedents and Topeka as well as the findings from each precedent, a list of guidelines was developed (Fig. 4.1.8) that will inform the design for the projective design of the Topeka Riverfront.

4.2 - Archival Research

The archival research delves into the historical, city, and county documents of Topeka, Kansas. The historical documents will include maps, plans, photographs, and other images detailing the development of Topeka since its founding, and in particular the development of the riverfront throughout time. An understanding of the identity and character of the riverfront will aid in the design and connections between the people and the history of Topeka.

The city documents provided by the City of Topeka and other foundations will benefit the project by providing the goals, plans (past, present, or future), and strategies to achieving those goals for consideration and rationale for this project. The documents will include comprehensive plans, neighborhood plans, land use plans, pedestrian and bikeway plans, revitalization plans, city zoning maps, etc.

4.2.1 - City Goals & Initiatives

The archival research looked into many of the city and county documents such as the Topeka 2040 Plan, the Topeka 2025 Comprehensive Plan, the Historic North Topeka East Neighborhood Plan (2013), the Historic North Topeka Revitalization Plan (1999), the Pappan's Ferry Charette, the Downtown Topeka Redevelopment Plan (2000), the Topeka Pedestrian Master Plan (2016), and the Topeka Bikeways Master Plan.

The City of Topeka's Mission statement sets up one goal for the city as a whole:

“Re-establish Downtown Topeka as a family-oriented, economically sound, culturally vital and visually attractive regional destination – the center and symbol of Topeka and

Shawnee County.”

- Topeka-Shawnee County Metropolitan Planning Dept. (2000)

The city's mission sets up an additional goal:

“Increase tourism's economic impact on Topeka through destination development and brand management.”

- “Visit Topeka” (2018)

Under the Downtown Topeka Redevelopment Plan, there exists a list of sub-goals directed at the Topeka Riverfront:

- Enhance connectivity between distant destinations Downtown
- Develop a “critical mass” of activity to compliment and encourage

entertainment district development.

- Encourage strolling and window shopping along Kansas Avenue
- Increase number of visitors local and out of town
- Improve the appeal and attraction of Downtown as a safe place to shop, recreate, live and work.
- Ensure opportunities for redeveloping industrial sites
- Reestablish a link between the river and Topekans
- Establish high-density office and residential uses along the river
- Make downtown easily navigated and “user-friendly”.
- Increase green space
- Encourage visitors and downtown residents to use public transportation
- Enhance the appearance of the Kansas River as it runs through downtown
- Improve amenities along the river for visitors and for public assemblies
- Ensure adequate/convenient parking

There are initiatives aimed at the goals mentioned above. The first initiative is a **revitalized Downtown Topeka** with the goal of becoming the region's primary economic development generator (Ensley, Miller, and Kane 2002). A second initiative aims to **redevelop the Kansas River Waterfront as a regional recreational, cultural, and mixed-use housing and office district** ("Downtown Topeka Redevelopment Plan," 2000). Strategies supporting this initiative include:

- *Development of access locations and riverfront amenities.*
- *Develop Pappan's Landing on the northside of the Kaw (Kansas), and City-owned land south of Sardou Bridge as park space.*
- *Develop warehouse space and adjacent property overlooking the River as condominiums and office space on its south bank.*
- *Develop a "wayfinding" program of signage and hardscape elements to assist visitors in navigating downtown*
- *Lighting enhancements to support walkable residential development adjacent to downtown*
- *Develop pocket parks or plazas to connect sidewalks with parking in the interior of blocks*
- *Implement "natural" stormwater*

retention program between 10th St. and the river

- *Identify spaces for pocket parks and connecting "green" links between destinations.*
- *Construct parking facilities for visitors in close proximity to trolley stops.*
- *Develop structured parking*

This initiative would rezone and redevelop the south bank of the Kansas River from an industrial land use into a mixed-use land use. A third initiative seeks to **expand high-quality dining and entertainment establishments to create a regional entertainment destination** (Ensley, Miller, and Kane 2002). These initiatives should guide the land uses in the future riverfront development. There is a strong desire to link Topekans to the Kansas River through the development of a park space located at Pappan's Ferry on the north side of the River. Looking to bring more attention to the river, high-density office and residential uses along the river through renovated warehouses and adjacent property are desired on the south side of the river ("Downtown Topeka Redevelopment Plan," 2000). The city and Shawnee county documents and plans help show

the desires and visions of the future of Topeka. Topeka has an inseparable history and connection with the Kansas River as does the state of Kansas. Being the birthplace of its capital, Topeka needs to turn its attention to reconnect its urban core together to promote the history, culture, and attraction of the city. The city has had plans in place to create this reconnection, however, nothing has changed yet. The National Park Service, the North Topeka East Neighborhood Improvement Association, and the Topeka Planning Department are a few groups who have contributed to the plans.

The goals and strategies set forth by these documents should be considered through during the design of the Topeka Riverfront. The riverfront design should accordingly utilize these goals, consider the strategies, unite the severed urban core of Topeka, and embody Topeka's identity.

4.2.2 - North Topeka Plans

The North Topeka Revitalization and North Topeka East Neighborhood Plans show a desire to restore and improve the identity, quality of life, and attraction for this area of the city. The North Topeka Revitalization Plan of 1999 sought to build upon the historic nature of N Kansas Avenue and create a vibrant arts & business district. The vision has been achieved for revitalizing the N Kansas Avenue arts district, now called the NOTO Arts District. The Historic North Topeka East Neighborhood Plan (HNTE) of 2013 updates the 1999 Revitalization Plan to envision the next 10-15 years of development for the south and east portion of North Topeka.

The area continues to revitalize and redevelop but “*for revitalization efforts to succeed, Historic North Topeka needs to be viewed more as a destination than as an extension of northern anchor of downtown*

and therefore, the region as a whole,” as stated in the HNTE Neighborhood Plan. This relates closely with the goal of this project: to unite the divided urban core of Topeka and create a cohesive urban core. Additional revitalization themes support revitalization of North Topeka such as the creation of catalysts by forming a synergy between the NOTO arts district and the Great Overland Station, transforming the riverfront, and reviving the residential areas of North Topeka.

One of the five major goals of the HNTE Plan is to “*develop an urban entertainment, dining, retail, cultural, and living district that utilizes assets of N. Kansas Avenue business district, Great Overland Station, riverfront, and historic buildings.*” This includes promoting a walkable and pedestrian-oriented development joining NOTO and a destination riverfront. The Plan continues

to name four development ventures to encourage the development of the North Crossings area (area between the railroad tracks along the Great Overland Station and the levee). These ventures are the support and expansion of the NOTO Arts District, further development of the Great Overland Station Museum, a riverfront park, and a pedestrian overpass.

The HNTE Plan takes key steps to developing the area with the first step focusing on developing the N. Kansas Ave. Railroad crossing, incorporation of wayfinding signs, and rehab of historic buildings. The second step is the start/completion of the riverfront park among other priorities such as maintenance and incorporation of NOTO art further into the neighborhood. The final step focused on infilling housing, community gardens, and additional maintenance.

In a concluding survey in the plan,

participants were asked to judge the development of the 1999 Revitalization Plan’s progress in the neighborhood. The Great Overland Station scored the highest with the most development seen, and the riverfront destination had little to no development and scored the lowest of the 11 categories.

The plans greatly show a desire to improve the development of North Topeka and reconnection to Downtown Topeka. A key element is the creation of a riverfront park that has had little to no progress of development. The ventures that would spur new development for North Topeka are valuable and should guide the riverfront design to create a successful destination and integrate the riverfront with the rest of the neighborhood.

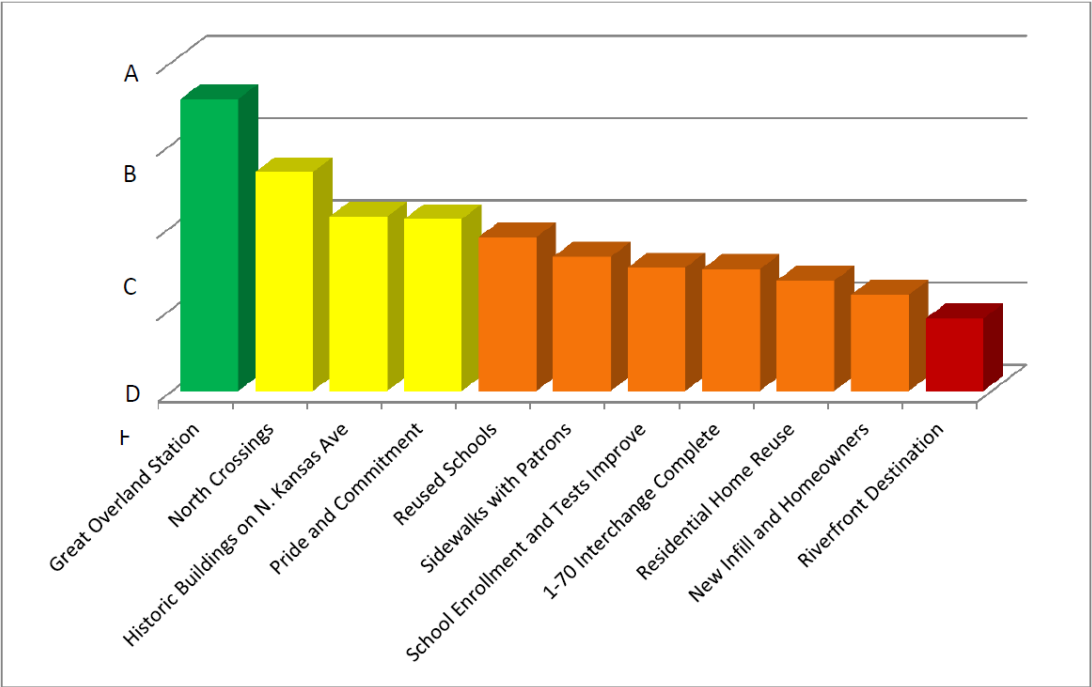


Figure 4.2.2.1 - HNTE Kickoff Meeting Survey on 1999 Revitalization Plan’s Progress (Topeka Planning Department, 2013)

Grade	Statements
A	None
B	Great Overland Station
C	North Crossings; Historic Buildings on N. Kansas; Pride and Commitment
D	Reused Schools; Sidewalks with Patrons; School Enrollment and Tests; 1-70 Interchange; Residential Home Reuse; New Infill and Homeowners
F	Riverfront

4.2.3 - Pappan's Ferry Charette

The Pappan's Ferry Charette was hosted by the National Park Service for the City of Topeka for one week in August 2016. This charette showed the ideas and conceptual planning of the North Crossing Area as a historical park. Heartland Visioning, Inc. in collaboration with the City of Topeka, Shawnee County, and Riverfront Authority organized the charette. The charette produced two park design options utilizing the theme of American migration and transportation with several secondary themes.

The NPS design team performed a site inventory and analysis of the North Crossing Site that would be used to inform the participants in the charette about the site and history. During the charette, stakeholders and community members helped to define the goals, wants, and desires that the community wanted to see fulfilled in the designs. The NPS design

team identified multiple dilemmas and opportunities present on-site as well as offered program opportunities for the design of the site. New program elements included an amphitheater, children's playground, river viewing areas, and other recreational uses. The team identified constraints of the site as limited pedestrian connections, undefined entrance to the park, safety concern of Curtis Street, visual and physical barriers of nearby buildings and the levee, development issues due to flooding, and the need for extra parking.

The charette provided through the community engagement meetings valuable information in the desires of the community through showing different precedent design elements that could be implemented in the design such as built park examples, levee modifications and river connections, programmatic elements, historic trail site features, and

interpretive elements. The designs sought to provide greater identity and educational background for the site through on-site signage, interpretive elements and exhibits, sculpture, levee river outlook, and a mobile app tour of the site.

The design charette helped show the desires and concerns of the community and display the important constraints of the North Crossing Area. The constraints gathered from these designs helped to inform the projective design for the North Crossing Area for this project.



Figure 4.2.3.1 - Site Concept Option A (NPS, 2016)



Figure 4.2.3.2 - Site Concept Option B (NPS, 2016)

4.2.4 - Downtown Redevelopment Plan 2000

The Downtown Topeka Redevelopment Plan 2000 sought to improve the image of Topeka through revitalizing its downtown. Many of the goals and objectives stated above in section 4.2.1 were derived from this document as this was a visionary plan for the improvement of the city.

In this plan, the city's downtown area is classified into three districts: Downtown Core, Downtown Waterfront, Downtown Residential. The plan also identifies five accompanying areas surrounding the downtown: residential areas, industrial areas, expocenter & commercial areas, Historic North Topeka, and other institutional uses. Different goals, objectives, and strategies were employed for improving the image and quality of life for Topeka. Of the districts and areas classified, there are two areas of focus, the Downtown Core and Historic North Topeka. These two areas are separated

by the development north of the I-70 overpass, the Kansas River corridor, and the North Crossing Area. The plan identifies that a waterfront district would transition between these two divided districts.

The document goes into more detail about the program of the transitional waterfront district. The program would be established on both the north bank and south banks of the Kansas River. The waterfront should prioritize open space (and park space), identify natural river ecosystems & reserves, and designate sites for new development along the waterfront. The plan discusses a trail system connecting past US-75 in northwest Topeka along the river corridor and east to Soldier Creek. There was mention of a low-water dam that would retain a relatively consistent water level for water-based activities.

Since the inception of this redevelopment plan, there has been a clear desire for the city to reconnect to the Kansas River and unite the separated halves of the urban core. The plan mentions that a riverfront amenity/destination is an opportunity for Topeka that multiple other cities have developed and that Topeka should do the same. However, there is important considerations for design needed due to the levees present protecting the city from flooding.

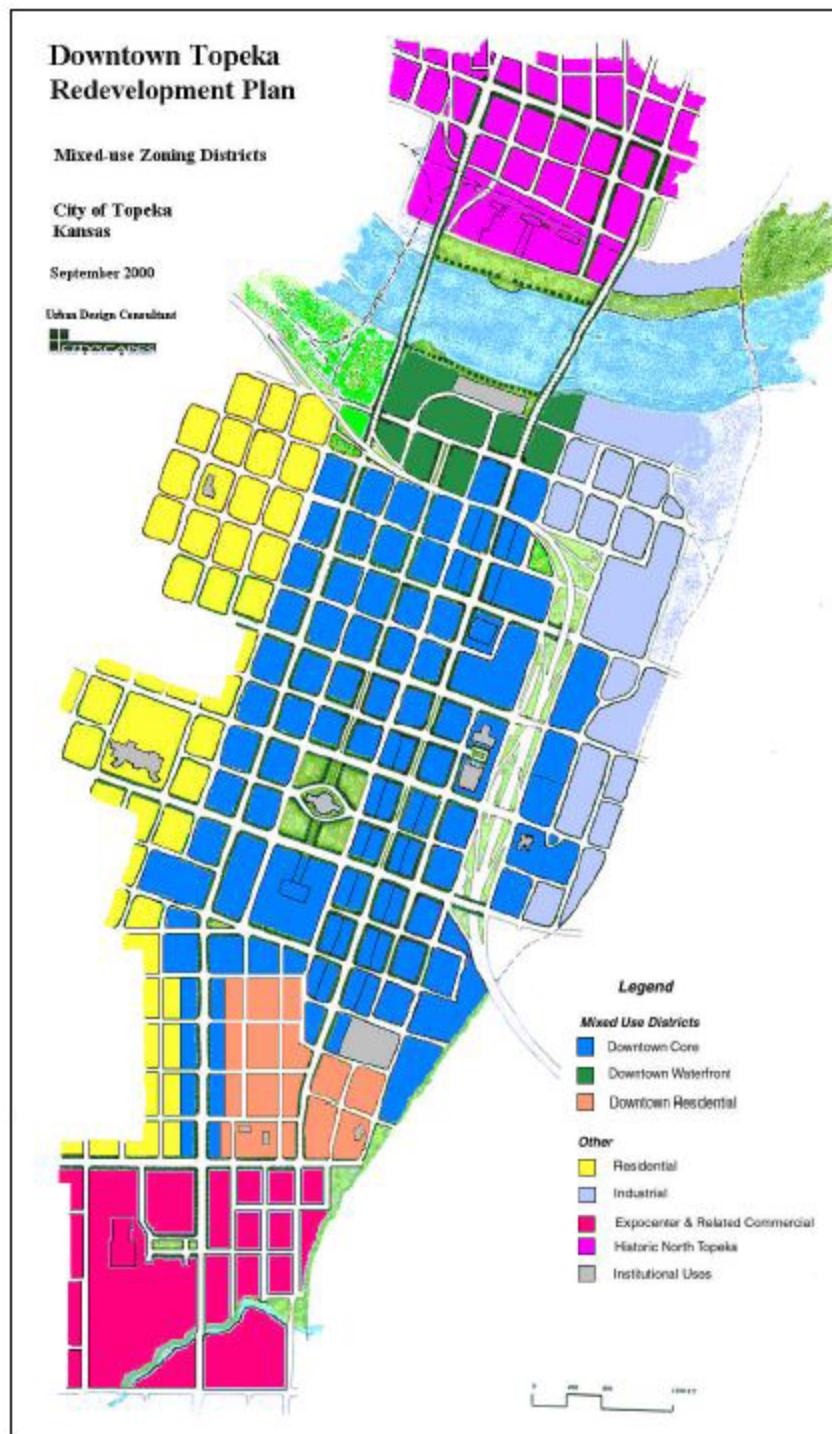


Figure 4.2.4.1 - Downtown Topeka
Redevelopment Plan (Topeka-Shawnee
County Metropolitan Planning
Department, 1999)

4.2.5 - Topeka Pedestrian Master Plan

The City of Topeka aims to improve its multi-modal transportation network. As part of the non-motorized transportation, the Topeka Pedestrian Master Plan seeks to refocus on the pedestrian network for the City of Topeka. Some benefits from improving the pedestrian network are improvement of the quality of life and sense of community experienced by Topekans and visitors. The plan states its vision for the city: “Topeka is a walkable city where people of all ages and abilities can safely and comfortably travel on foot.” Five goals accompany this vision: A Complete Pedestrian Network, Maintained Sidewalks, Safety and Comfort, a Culture of Walking, and Focus on Priority Projects.

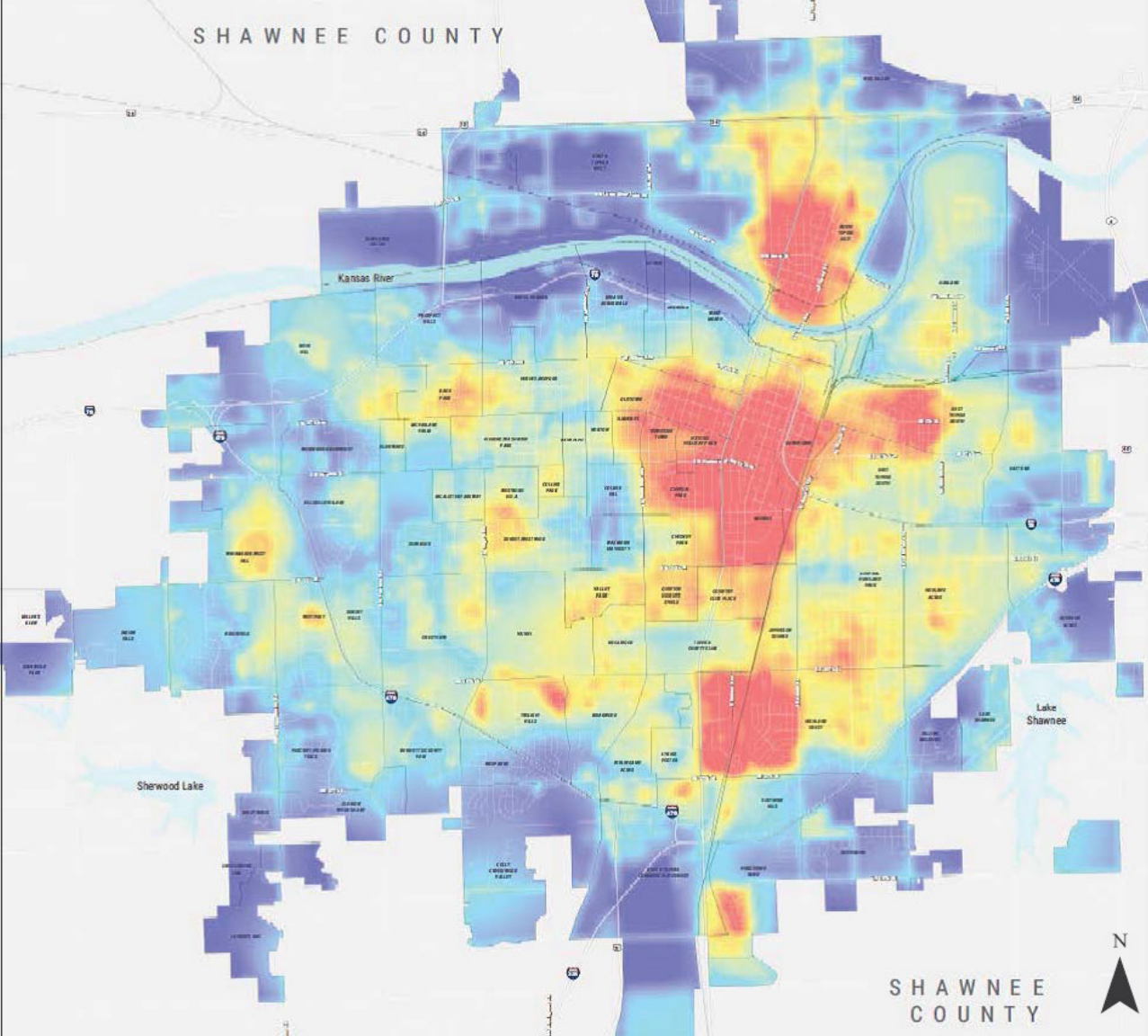
The community engagement meeting resulted in learning that the biggest problems on existing strolls were a lack of sidewalks, difficult street crossings, and bumpy sidewalks. As a result of

the community engagement meeting, a pedestrian demand heat map was formed to identify the areas of greatest demand based on the factors found in the meeting. Bus Routes, Neighborhoods (intensive care), Parks & Trails, Schools, Streets with no Sidewalks were all ranked high in the Pedestrian Demand Heat Map. Busy Streets, Commercial Parcels, Community Centers, High Density Residential Properties, Major Destinations, and Neighborhoods (at risk) were all ranked low in the map.

The Pedestrian demand heat map shows from the Pedestrian Master Plan that the two areas that this project is seeking to connect to form a more cohesive urban core are indicated as high demand (red/orange). In between these areas is the riverfront which is indicated as medium demand. So there exists a dilemma to improve the pedestrian walkability and

connect people throughout the urban core more than most other areas of the city.

In a survey documented in the plan, people were asked “what type of place they would like to walk to?” Stores, Businesses, and Restaurants were the top choice followed by Park, Recreational, and Fitness Facilities. These destinations should be considered in the program of the riverfront design.



Topeka Pedestrian Demand Heat Map

- Areas with Highest Demand for Walking
- Areas with Highest Demand for Walking
- Areas with Highest Demand for Walking
- Areas with Highest Demand for Walking

Derived from Topeka's Pedestrian Plan, the Pedestrian Demand Heat Map was formed upon community workshops, surveys, and stakeholder meetings. The key features measured in the heat map were weighted as high or low priority. The high priority features consist of bus routes, neighborhoods (intensive care), parks & trails, schools, and streets with no sidewalks. The low priority features include busy streets, commercial parcels, community centers, high density residential properties, major destinations, and neighborhoods (at risk).

Key for Pedestrian Priority Areas

Feature	Weight	How it is Represented
Bus Routes	High	1/2 mile buffer
Neighborhoods (Intensive Care)	High	within polygons only
Parks & Trails	High	1/2 mile buffer
Schools (Elementary and Middle, Public and Private)	High	1/2 mile radius
Streets with no Sidewalks	High	500' buffer
Busy Streets (i.e. Arterials and Collectors)	Low	1/2 mile buffer
Commercial Parcels	Low	within polygons only
Community Centers (including Senior Centers)	Low	1/2 mile radius
High Density Residential Properties (4+ units)	Low	within polygons only
Major Destinations	Low	1/2 mile radius
Neighborhoods (At Risk)	Low	within polygons only

Figure 4.2.5.1 - Pedestrian Demand Heat Map
(City of Topeka & MTPo Planning Team, 2015)

4.2.6 - Topeka Bikeways Master Plan

As a second part of the non-motorized transportation for the City of Topeka, The Topeka Bikeways Master Plan focuses on the improvement of the cycling network. Cycling presents a healthy alternative for traveling long distances throughout Topeka. The Topeka Bikeways Master Plan seeks to establish the routes for traveling to destinations throughout the city via cycling.

A few of the goals that the plan seeks to achieve are improving bicycle access to key community destinations, improving access to the city's pathway system by providing connecting links from neighborhoods to trails, increasing safety on the road for motorists, bicyclists, and pedestrians, and capitalizing on the economic development benefits of a destination-based bicycle transportation system. These goals along with a Topeka Bikeways Survey that was conducted by

RDG Planning & Design and Cook, Flatt & Strobel. The survey concluded that cyclists preferred to cycle along settings giving a degree of separation of cyclist and motorist. Trails, bicycle tracks, and buffered bike lanes were preferred over the presence of none on a street. Streets that were two-lane were also preferred over multi-lane arterial streets as well.

The Bikeways Plan shows the routes of the proposed bike ways. Looking to the riverfront, there are five routes of importance to be considered when designing: North Topeka Bikeway, Oakland-Potwin Bikeway, Lyman/Lower Silver Lake Bikeway, North Levee Trail, and South Bank Trail. The North Topeka Bikeway is of particular importance, in that, it is the only bikeway route that connects north-south over the Kansas River. The North Topeka Bikeway crosses the Kansas River via the Kansas Avenue

Bridge.

The linkage opportunity that the Topeka Riverfront and the Kansas Avenue Bridge offers is tremendous and can connect the both banks of the river through prioritizing the cyclist and the pedestrian.

Central Topeka Bikeway System

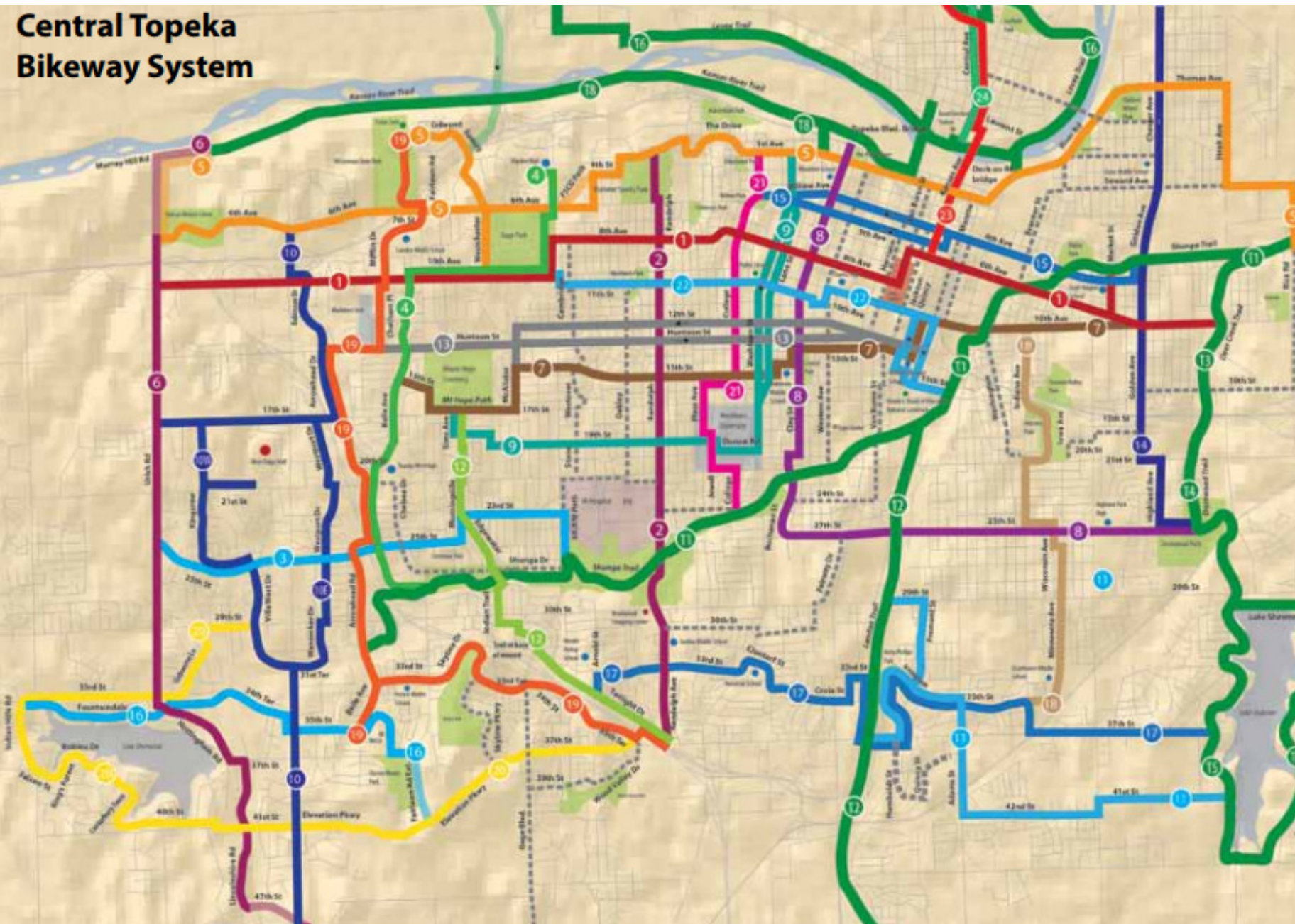


Figure 4.2.6.1 - Central Topeka Bikeway System Routes (RDG Planning & Design and Cook, Flatt & Strobel, 2016)

4.2.7 - Summary of Archival Research

All of the documents seek to reconnect the City of Topeka to the Kansas River once again. The city goals and initiatives point to establishing Topeka as the regional destination to attract people to the city.

The goals, initiatives, and strategies help to inform the city's desires and how a waterfront/riverfront can support those goals. However, even when goals or initiatives are stated, they are not always pursued as originally purposed. For example, in the North Topeka plans, many of the major points of the 1999 Revitalization plan were addressed but the work intended for developing the riverfront park had little to no progress. Although North Topeka expresses the desire to revitalize the riverfront for public recreation and educational use on the history of Topeka. There have been a few designs made for the design of the riverfront such the National Park

Service's designs for the Pappan's Ferry Charette, which resulted with two design alternatives. Nothing has come of those designs either.

Looking to the south side of the river, the Downtown Redevelopment 2000 Plan shows desire for a waterfront district on the northern edge of the downtown core. This waterfront district would work in conjunction with the north waterfront in North Topeka. The zoning in North Topeka has shown that zoning would accommodate with a mixed-use riverfront district, however the zoning on the south side remains mostly industrial and does not accommodate to riverfront uses or zoning for office, commercial, residential, or other zoning focused on mixed use. Zoning changes may need to occur on this side of the river to favor new development aimed toward attracting people to use the riverfront.

Additionally, the city understands that there is a high demand for increased walkability in the downtown area, in North Topeka, and the riverfront. The Pedestrian Plan shows that there needs a greater focus on the riverfront since there is not as much pedestrian-friendly infrastructure present near the riverfront.

Finally, looking at the Bikeways Master Plan, the riverfront has a few major bikeway routes that traverse through the site that should be prioritized in a riverfront design as it can help with wayfinding and safety for cyclists and pedestrians throughout the urban core.

4.3 - Site Inventory & Analysis

The inventory and analysis of the site will gather and examine local factors for consideration that will inform the projective design.

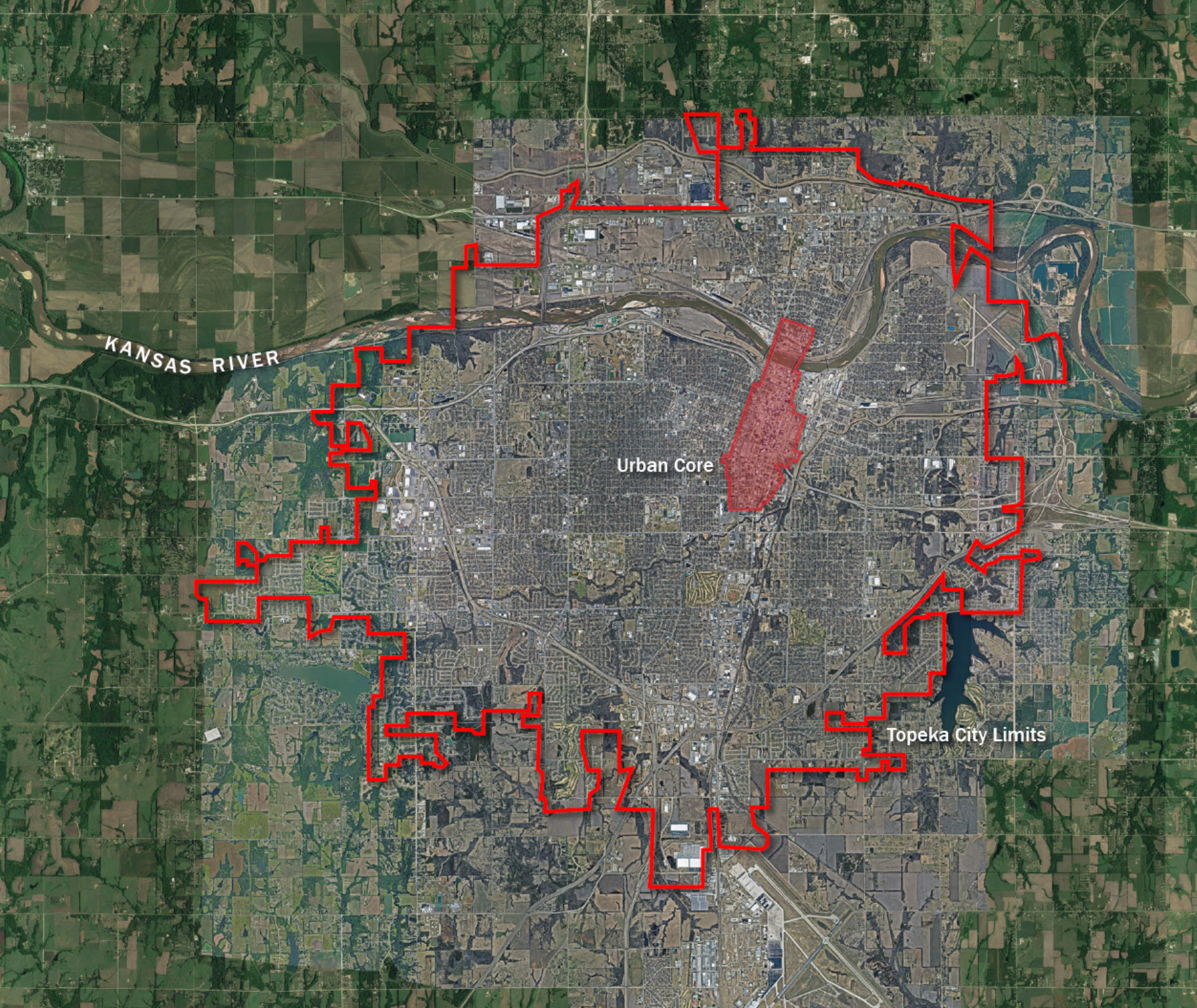
An inventory of the main features of the site and a site analysis of opportunities and dilemmas presented on-site will be necessary to begin the design of the riverfront. The site inventory and analysis will create a program for the site, which will help inform the site design.

The site inventory will record features that, once analyzed, will help to understand, program, and design a strategy for the site design. Photographs will be taken of existing features of the site when visiting the site.

In addition to the inventory, a site analysis has been developed to guide the analysis. The analysis will inform the design of the site by identifying opportunities and dilemmas that be used to create a design strategy

for the site. From the program, the analysis will be categorized into three categories: linkage & connection, riverfront amenities, and identity & destination.

*(Opposite) Figure 4.3.1 - Topeka City Limits Map
(Johnson, 2019)*



KANSAS RIVER

Urban Core

Topeka City Limits



4.4 - Existing Conditions Maps



*Figure 4.4.0.1 - View west along the north levee
(Johnson, 2018)*

4.4.1 - Site Definition Map

Site Boundary

Study Area

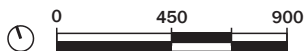


The study area is defined by the similar constraints present in the precedents. Features that define the study area are railroads, streets, bridges, property boundaries, and stream channels. Other major features present in the study area are Topeka Boulevard, North and South Kansas Avenues, 1st Avenue, Crane Street, Curtis Street, the Topeka Blvd. Bridge, Kansas Avenue Bridge, and Great Overland Station.

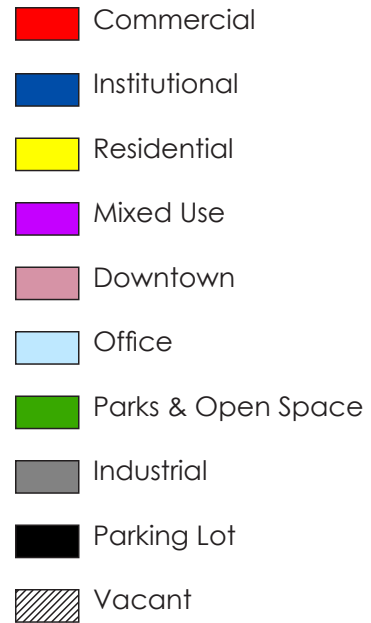
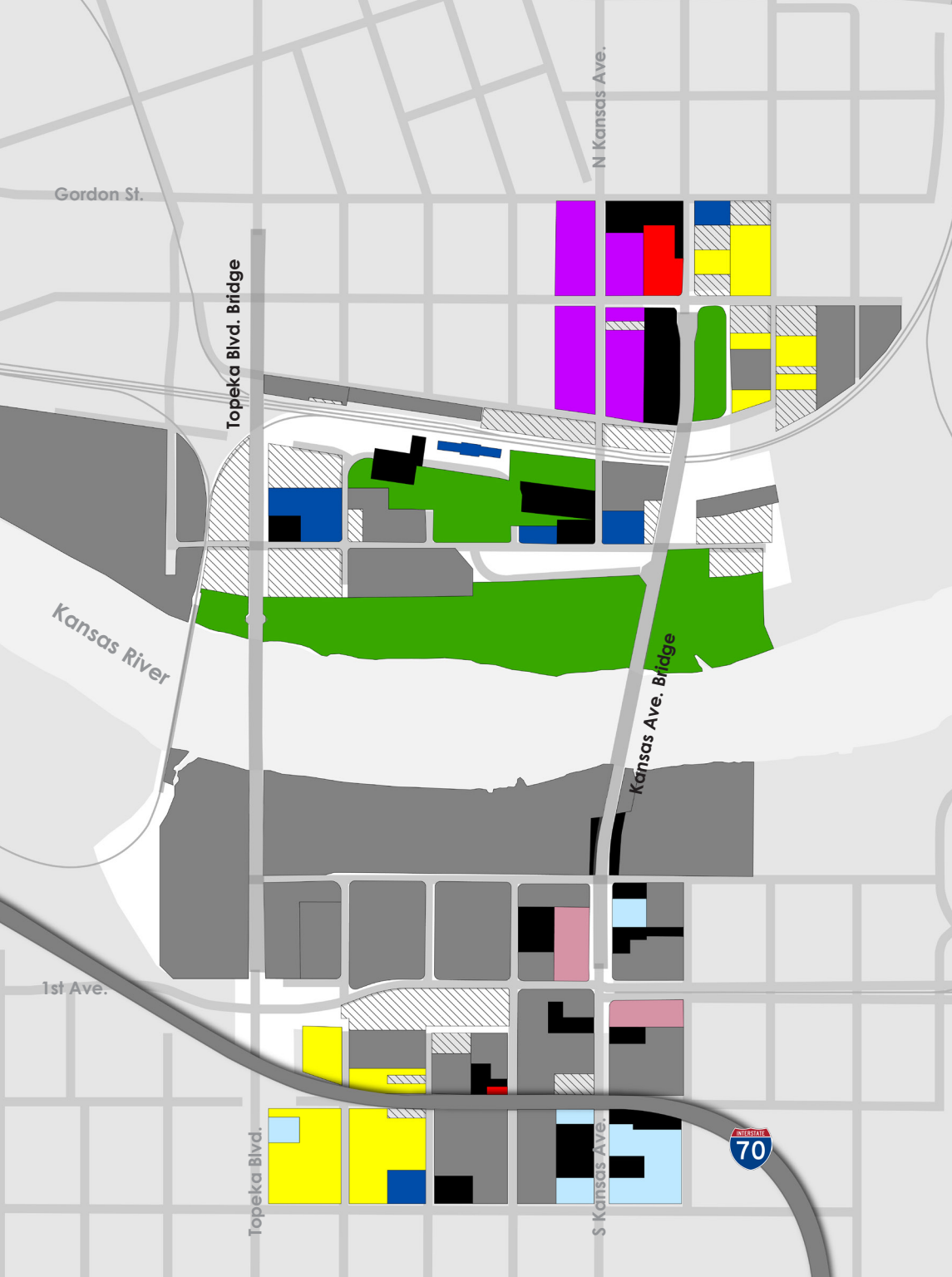
4.4.2 - Site Topography Map

- - - Site Boundary
- 2' Contours

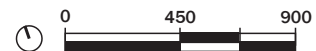
The existing northern topography is primarily flat due to the north bank being the old Kansas River floodplain. The range of topography on the northern part of the study area is 880'-884'. The Kansas River is flanked on both sides by levees, whose highest points are 894'-892'. The river's level is generally ~852'. The floodplain elevations are generally 852'-874'. The southern topography begins flat then slopes up ward toward the Capitol Building. The range of topography om the southern part of the study area is 880'-900'.



4.4.3 - Existing Land Uses In & Around Study Area



The existing land uses show that there has been action taken to revitalize the North Topeka Arts District (NOTO). The land uses located on the south bank of the Kansas River, on the other hand, show that land uses remain industrial. In order to meet the city's past goal for creating a riverfront district, the land uses need to accommodate for riverfront land uses such as mixed use, commercial, official, and park/open space.



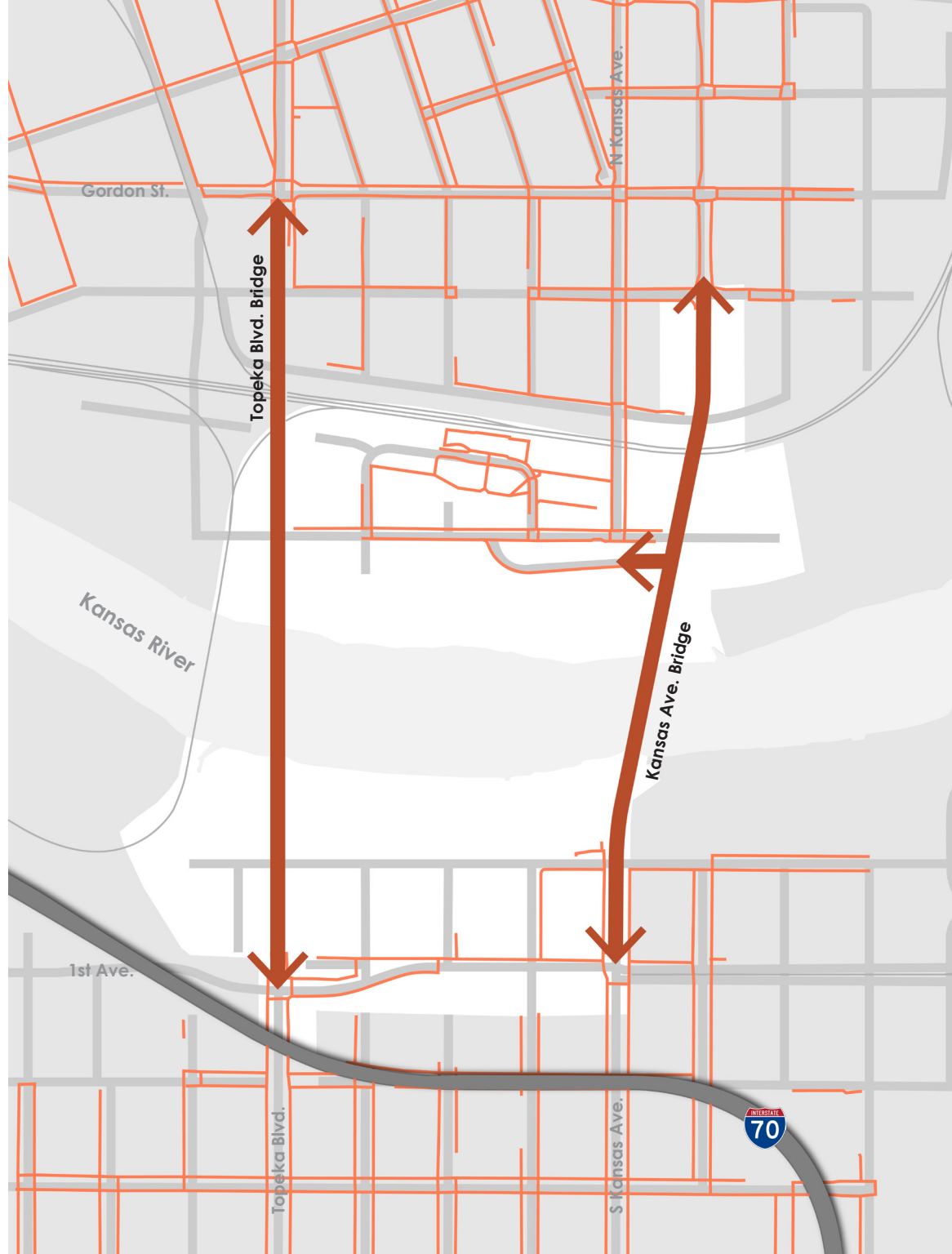
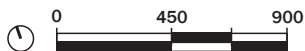
4.4.4 - Existing Sidewalks & bridge Connections Allowing Pedestrians to Navigate City

Existing Sidewalks

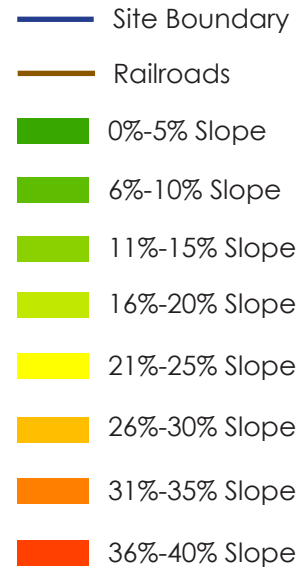
Bridge Connections



The existing pedestrian infrastructure shows there is access to the study area via sidewalks. There are two methods for pedestrians to cross the Kansas River: the Topeka Blvd. Bridge and the Kansas Avenue Bridge. As shown in the Pedestrian Demand Heat Map, this area has a medium to high demand for pedestrian infrastructure.



4.4.5 - Existing Slope Percentages of the Study Area



The slopes of the study area are generally flat, however they are steep along the levees. The levee slope percentages show how the levees function as barriers to river access visually and physically.



4.4.6 - Existing Levees Separate Study Area from the Kansas River

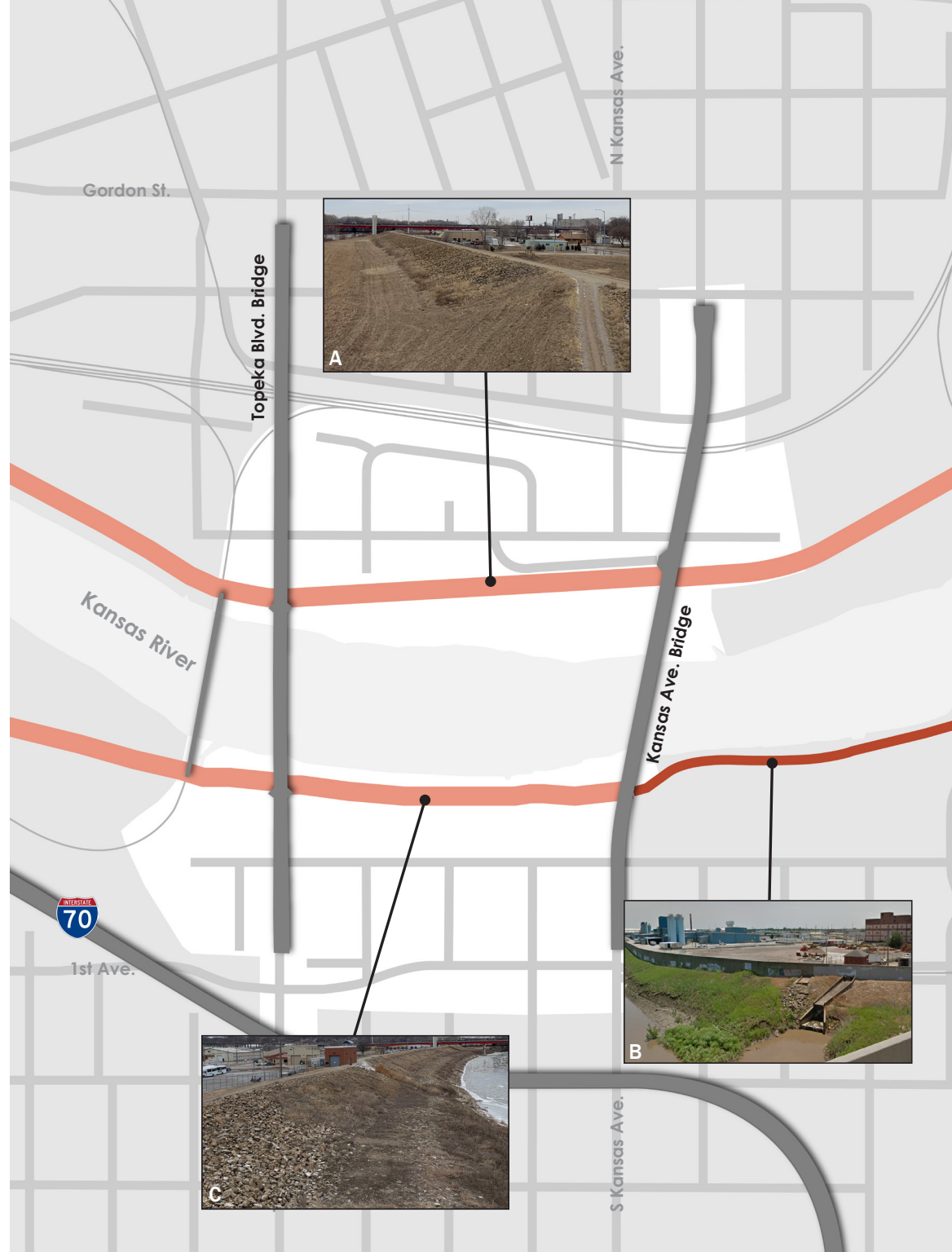
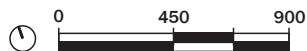
-  Floodplain Levee
-  Flood Wall

The levee system protecting the city's development from flooding presents a dilemma to connection between the Kansas River and the study area. The floodplain levees hinder physical access to the River due to the height difference from one side of the levees to the other. The levees present an opportunity to act as a trail route that provides views of the river from the top of the levees.

A. Figure 4.4.6.1 - View of north levee (Johnson, 2019)

B. Figure 4.4.6.2 - View of flood wall (Google Earth, 2019)

C. Figure 4.4.6.3 - View of south levee (Johnson, 2019)



4.4.7 - Visual Axis Presented by the Great Overland Station & the State Capitol Building Create Connection between North & South

-  Visual Axis
-  Major Visual Landmark

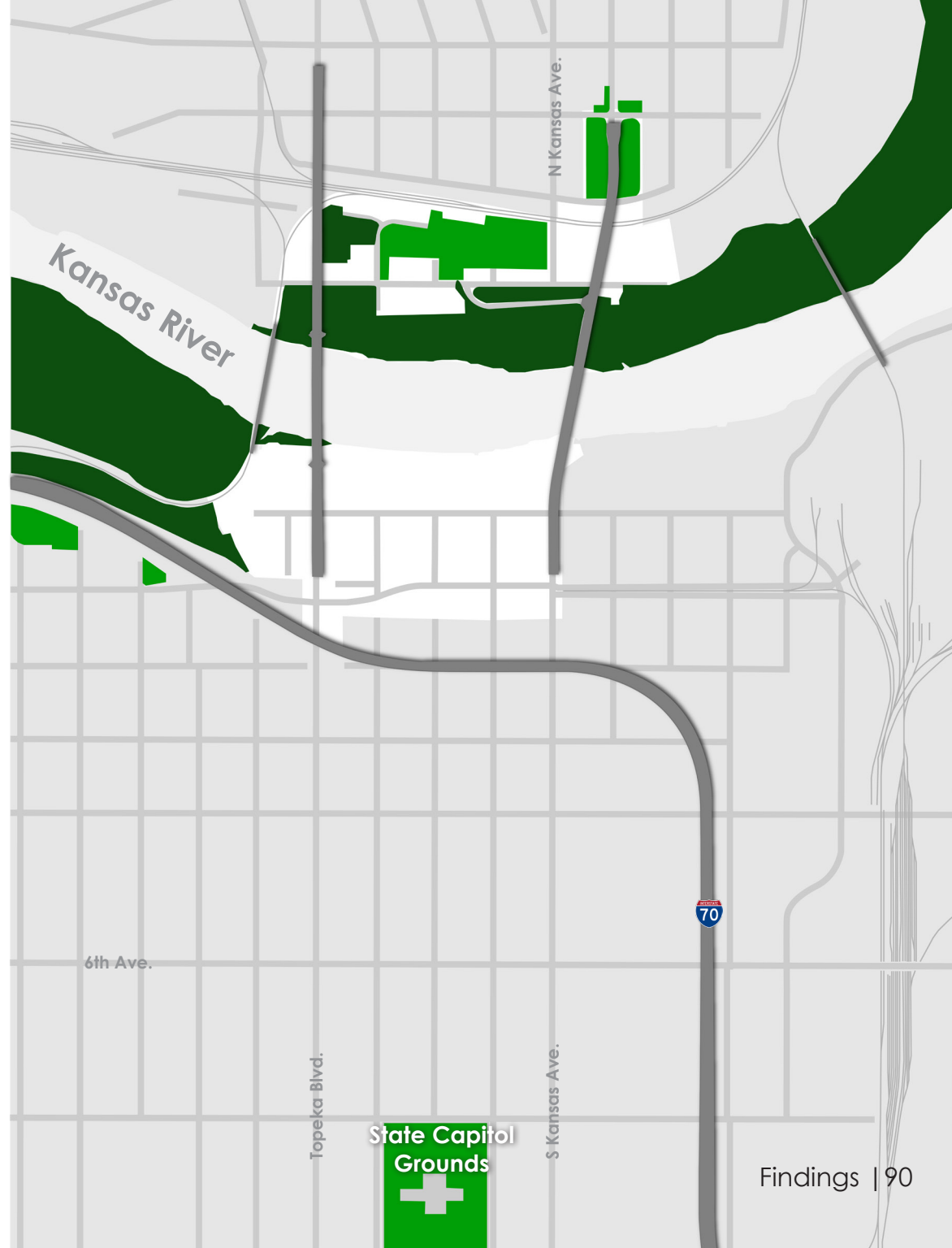
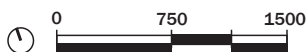


The major landmarks of the study area and the context are the Great Overland Station (study area) and the State Capitol Building (downtown). These landmarks are visible from a near aligned axis. The intersection point the axes is located in the Kansas River.

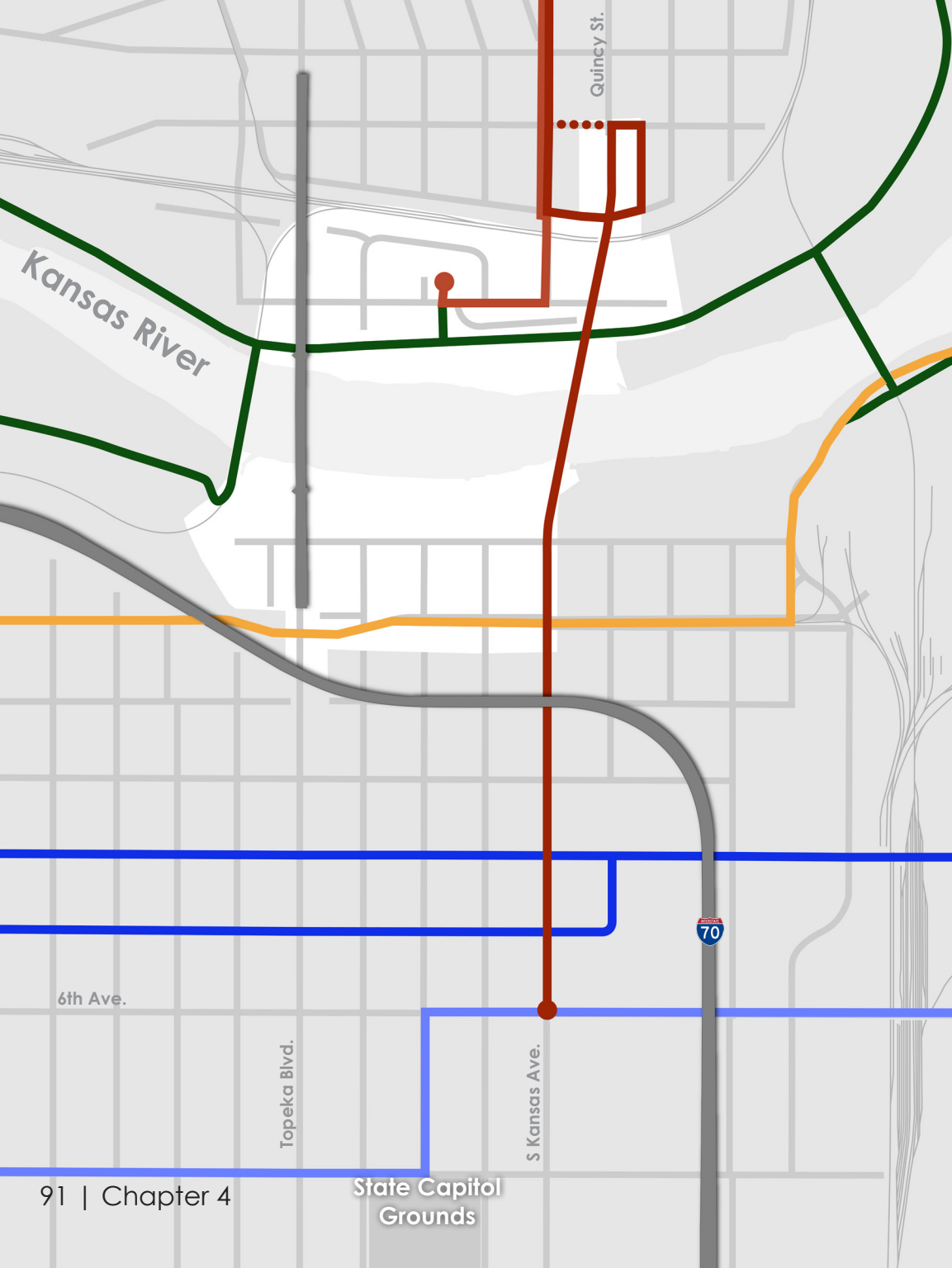
4.4.8 - Green Space in Topeka is Disconnected from Downtown to the Kansas River

-  Park Green Space
-  Natural Green Space

Existing green space in downtown Topeka is minimal and limited to the State Capitol Grounds. The grounds are separated from park green space or natural green space to the north. Green space offers comfortable walkable environments and other recreational activities that improve the quality of life of the city. There is a lack of comfortable walkable environments connecting the Capitol Grounds to the study area. A change is needed to improve the walkability of the urban core.

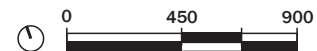


4.4.9 - Topeka Bikeways Masterplan Routes Show Vital Cyclist Routes & Connections



- North Topeka Bikeway
- Oakland-Potwin Bikeway
- Lyman/Lower Silver Lake Bikeway
- 4th Avenue Bikeway
- East-West Bikeway
- North Levee Trail
- Route End/Start Point
- Alternative Route

The Topeka Bikeways Masterplan plans the bicycle routes throughout the city. To connect the north and south sides of the Kansas River these routes should be considered in design. The routes show the priority streets, bridges, and trails that should focus on the cyclist (and pedestrian). Design along these routes should provide for cyclist and pedestrian safety and comfort.



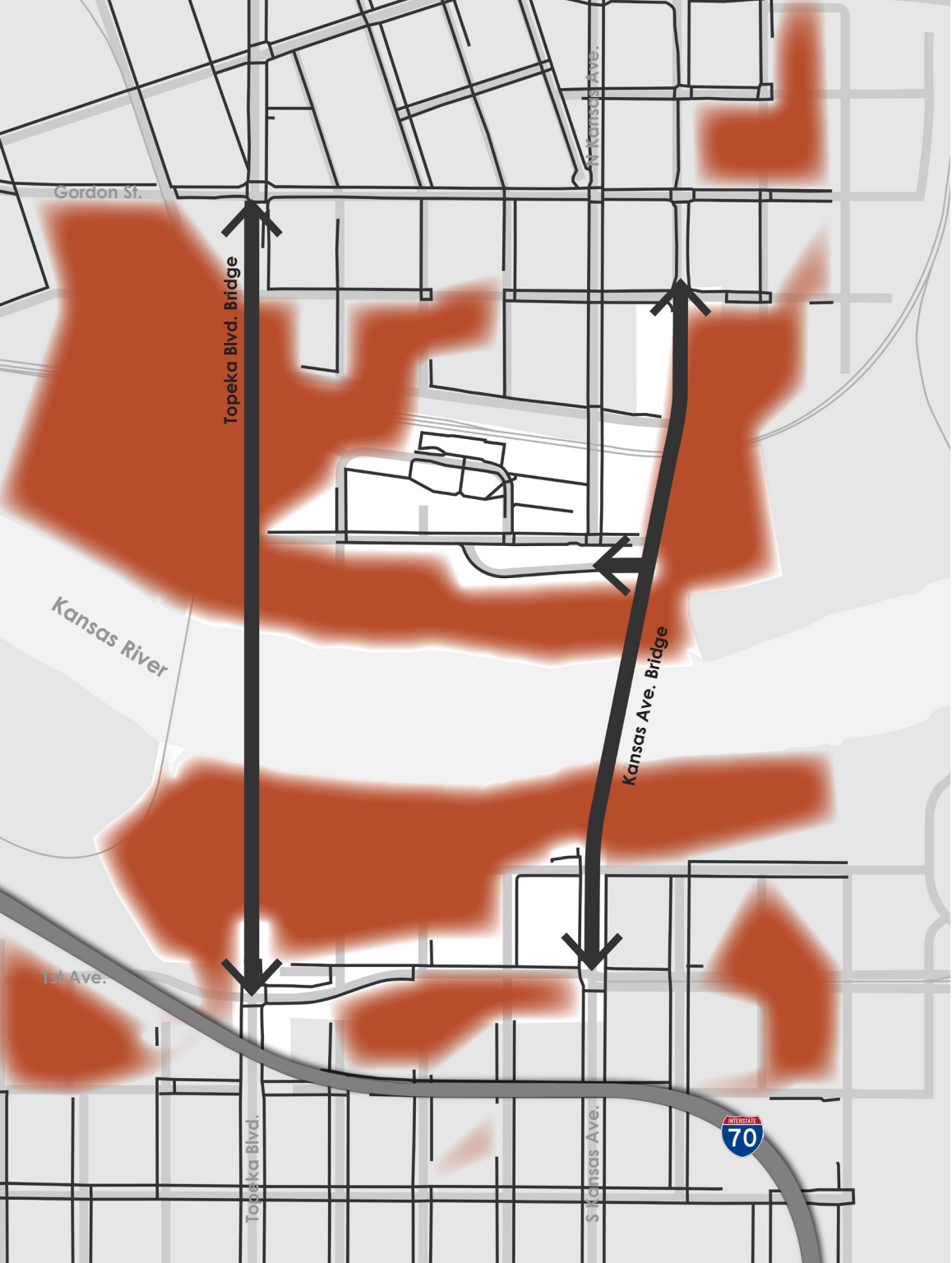


4.5 - Dilemma Maps



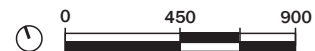
Figure 4.5.0.1 - View of train cars near the Great Overland Station (Johnson, 2018)

4.5.1 - Areas Lacking Sidewalks Preventing Pedestrian Access



- Areas Lacking Pedestrian Access
- Existing Sidewalks
- Bridge Connections

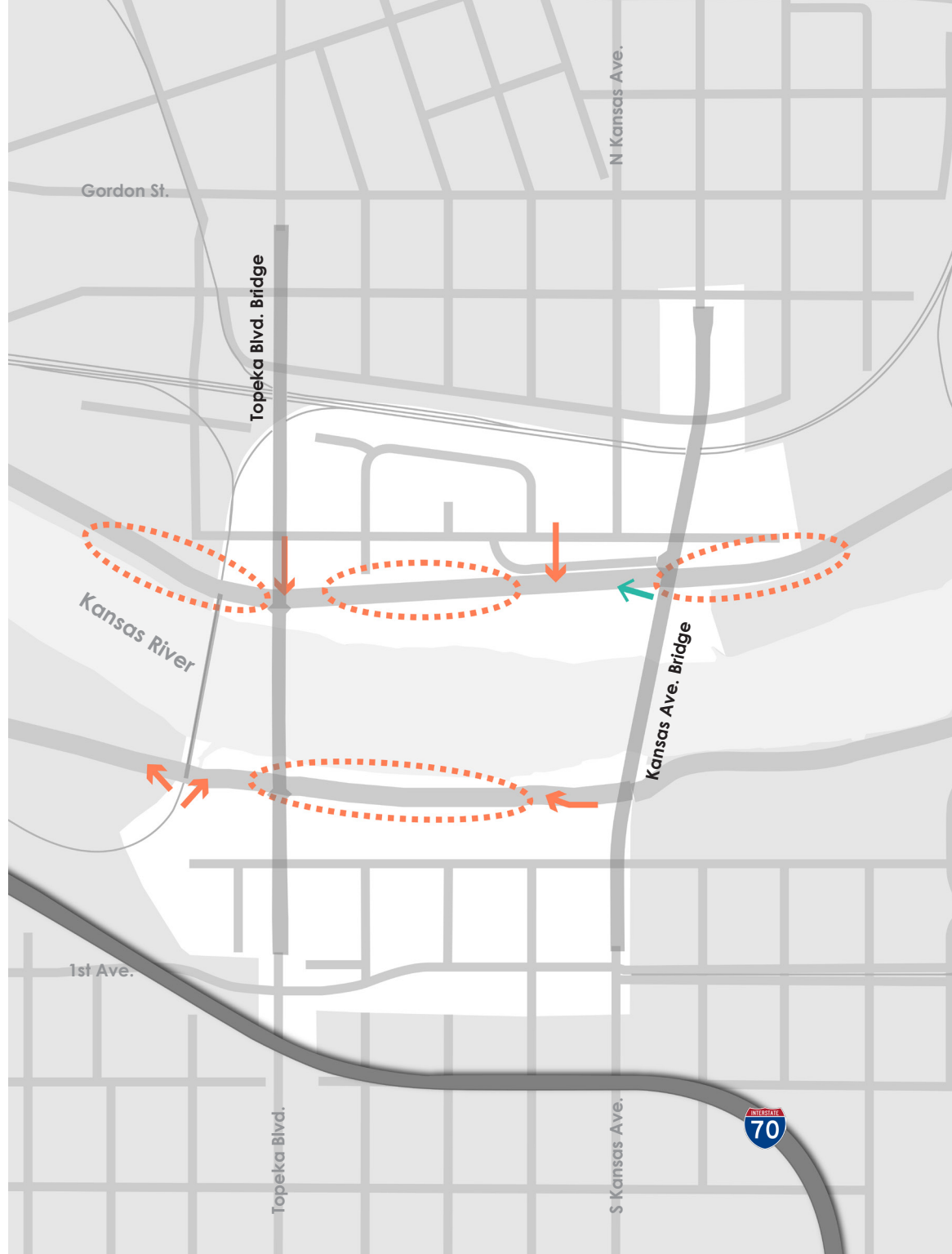
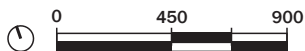
The existing pedestrian infrastructure shows there is access to the study area via sidewalks. There are two methods for pedestrians to cross the Kansas River: the Topeka Blvd. Bridge and the Kansas Avenue Bridge. There are large stretches that are inaccessible via sidewalks due to a lack of sidewalks. The areas lacking occur along the Kansas Riverfront, hindering any physical and visual access to the Kansas River.



4.5.2 - Levee Pedestrian Access Points are Sparse & Create Dilemmas of Limited Access to Levees

- ← Access from City-side of Levee
- ← Access from Floodplain-side of Levee
- ⋯ Areas of Limited Access

The existing entry points for pedestrians to access the levees are sparse and leave large areas where access is limited.



4.5.3 - Presence of Levees Hinders Direct Views between Major Landmarks & the Kansas River

-  Visual Axis
-  Major Visual Landmark
-  Levees



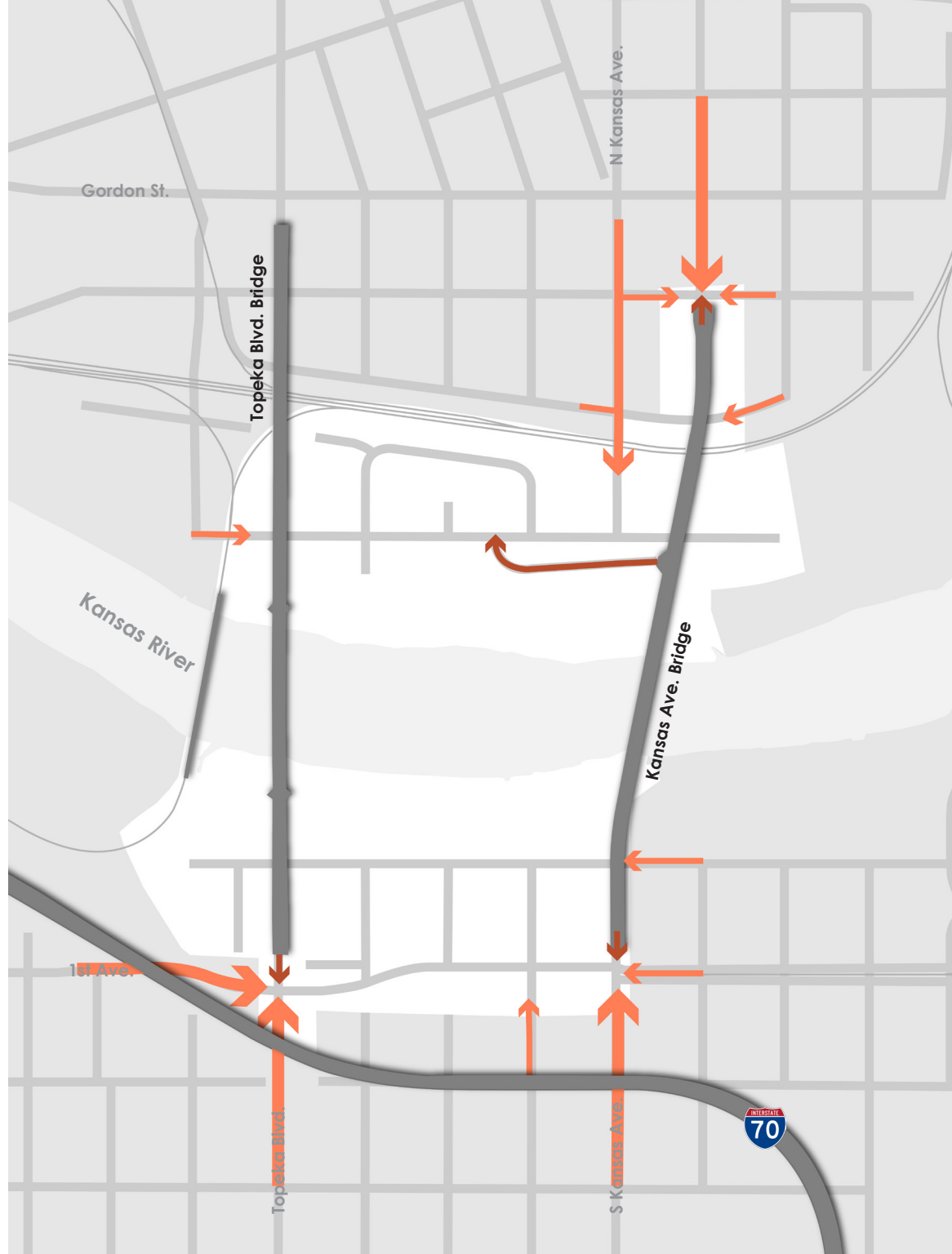
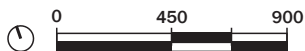
The levee presents a dilemma to the visual connection between the Great Overland Station and the State Capitol Building. The levee limits the view due to the levee elevation. The visual connection to the Kansas River and floodplain are blocked by the levees.



4.5.4 - Existing Vehicular Entry Points To Site Show Main Approaches To Be Considered in Design of Study Area

-  Minor Vehicular Entry
-  Major Vehicular Entry
-  Bridge Vehicular Entry

The study area presents an existing finite number of entry points into the study area, most of which are confined to streets, crossings, and bridges. These entry points influence the approaches experienced by people driving to the study area and should be considered during design to create effective circulation routes.



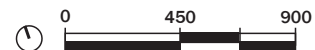
4.5.5 - Railroad Crossings Present Opportunity for Improved Pedestrian Connections

— Railroads

↔ At-Grade Crossing

↔ Grade-Separated Crossing

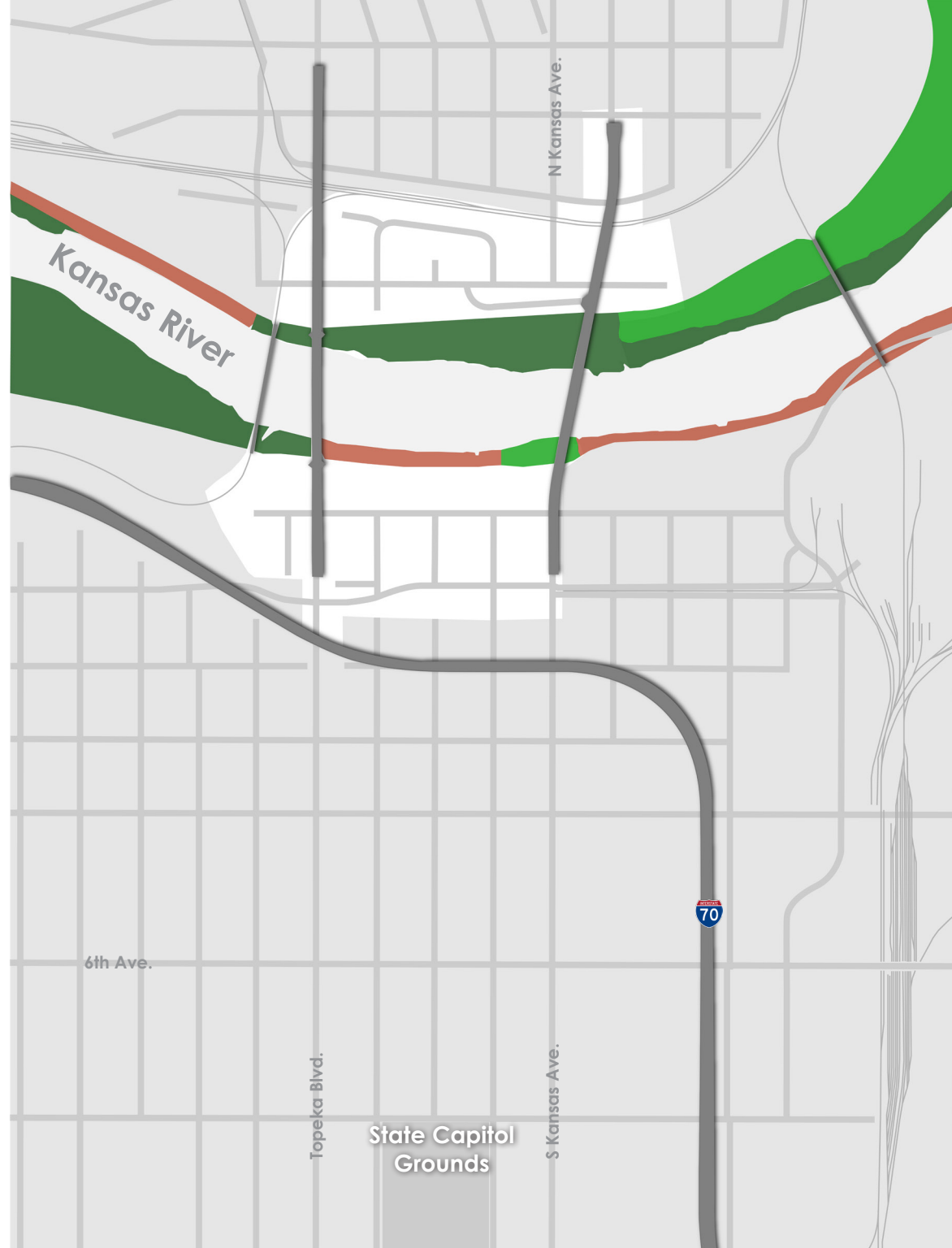
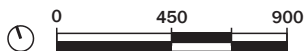
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4.5.6 - Kansas River Floodplain Types Can Affect Design Implications

- Open Manicured River Edge
- Natural Unmanicured River Edge
- Riprap Levee Edge

Floodplain types currently existing inform different types of design strategies. For natural unmanicured river edges, design should aim to create ecologically focused programs and elements like trails and wildlife areas. For open manicured river edges, programs and elements are more suitable as open park-like spaces aimed at creating views and being multi-use. For riprap levee edges, design should aim to retain flood-resistant infrastructure and/or create designed spaces that are resilient to flooding like hardscape promenades or terraced river edges.



4.5.7 - Limits & Constraints of the Topeka Riverfront at the Study Area



- ← Minor Vehicular Entry
- ← Major Vehicular Entry
- ← Bridge Vehicular Entry
- ← Limited Levee Access Points
- Limited Access Due to Fenced Areas
- Railroads Constrain Site Accessibility
- Levees Limit Visual & Physical Access to River





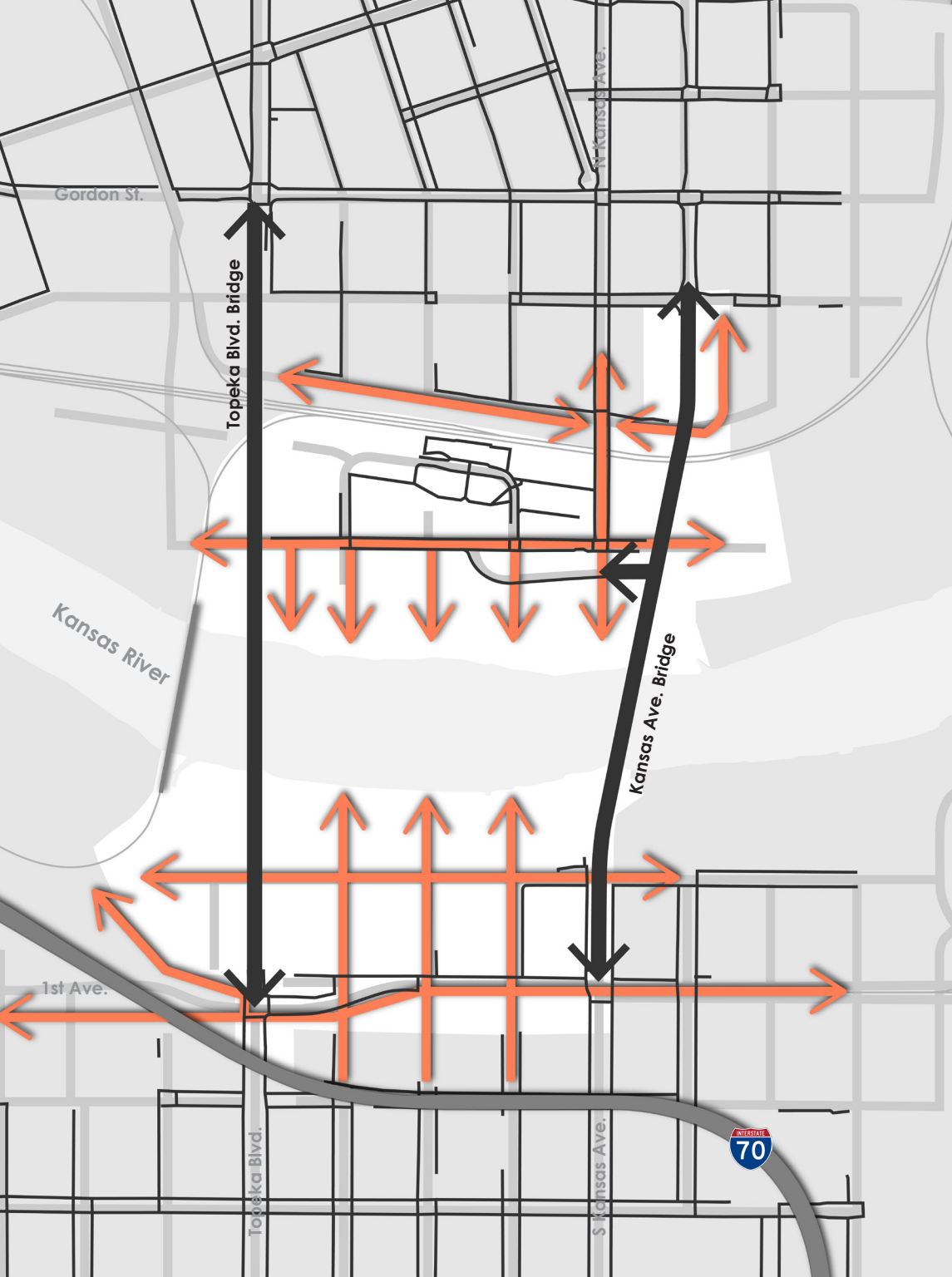
4.6 - Opportunity Maps



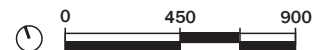
Figure 4.6.0.1 - View of the grain elevator from the NOTO Arts District (Johnson, 2018)

4.6.1 - Opportunity For New Sidewalks To Connect Areas & Improve Walkability along Riverfront

- ↔ New Sidewalks
- Existing Sidewalks
- ↔ Bridge Connections



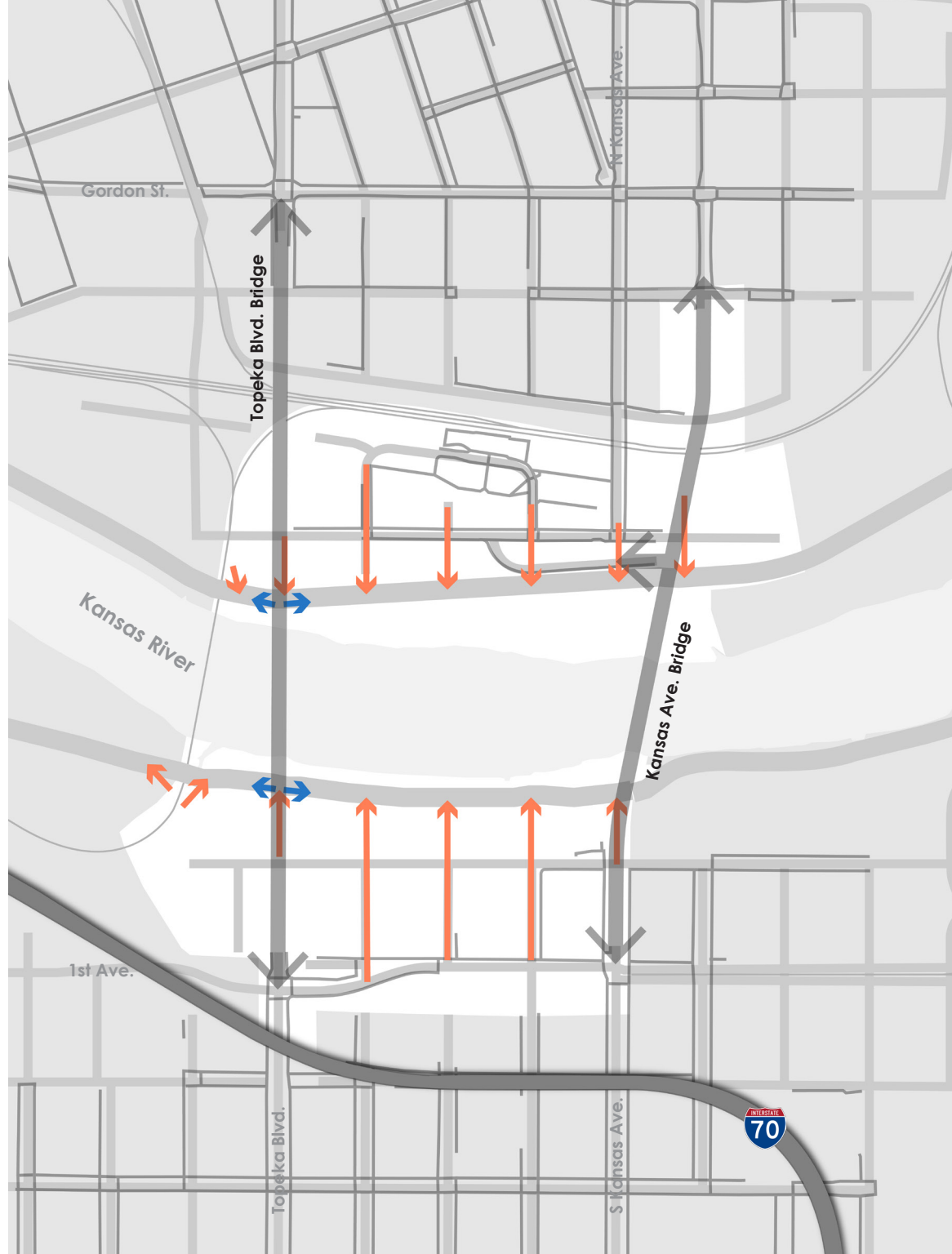
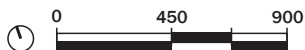
Following the city's grid system, the sidewalk network, if continued would better connect the areas lacking pedestrian infrastructure. Connecting these areas to the rest of the city would greatly improve the walkability of the study area and the surrounding neighborhoods.



4.6.2 - Creation of Multiple Access Points to Levee Increases Functions as Trail and Opportunity for Views of Kansas River

- ← New Levee Access Point
- ← Access Point from Bridge (Ramp or Stairs)
- Existing Sidewalks
- ↔ Existing Bridges

Opportunities for multiple new access points following the pedestrian network improve the connection to the levees. The improved pedestrian access to the levees would make the levees more usable than in their current state.



4.6.3 - Opportunity for New Lookout Points & A Visual Axis Connecting both Major Landmarks & Both Sides of the Kansas River

Visual Axis

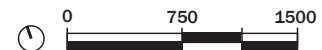
Major Visual Landmark

Levees

New Visual Axis Between Levees

Lookout Point on Levee

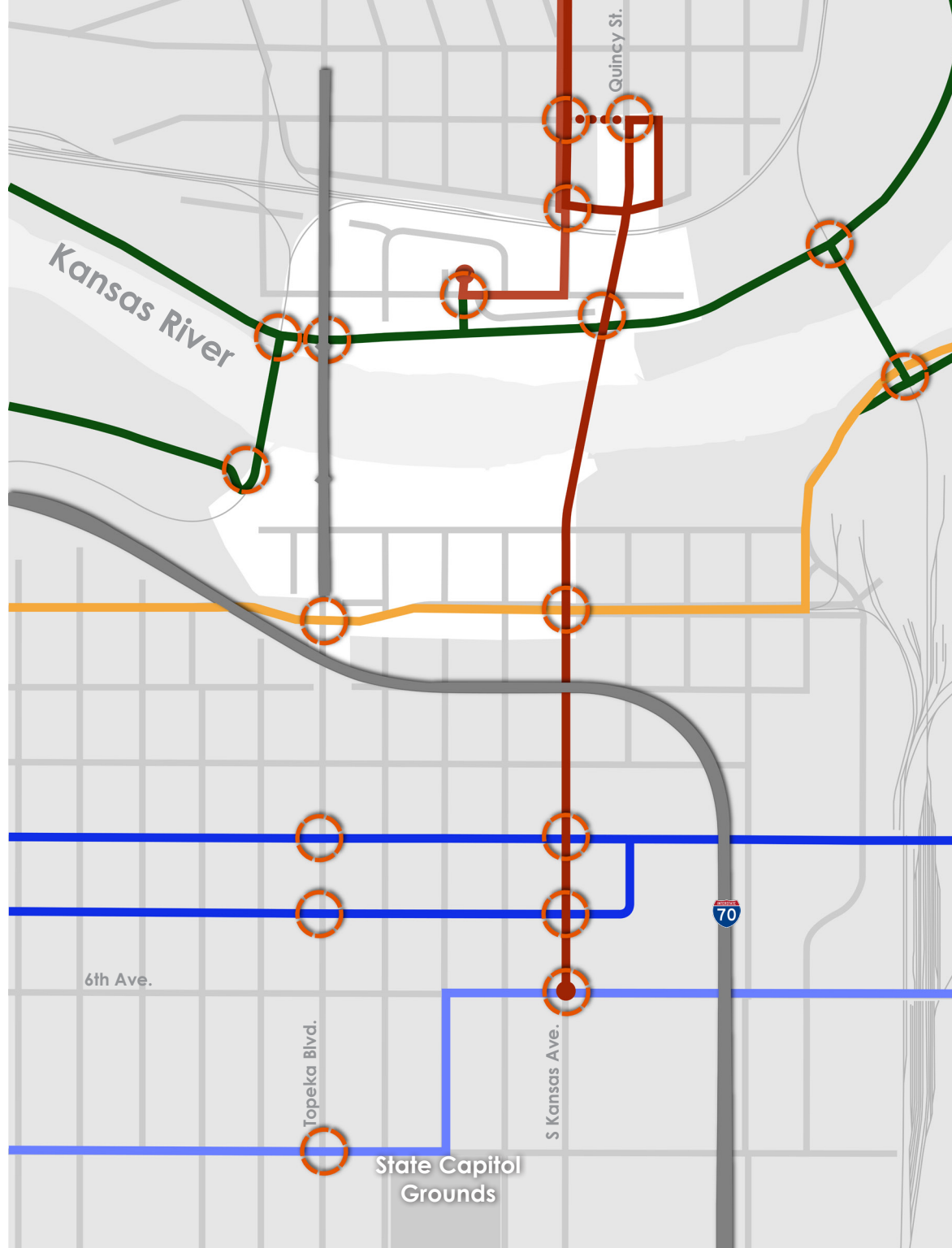
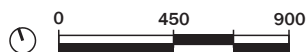
The dilemma of the levee blocking views to the Capitol and the Great Overland Station presents an opportunity. Due to the elevation of the levees, an opportunity for establishing key lookouts or viewpoints along the riverfront, which can be crucial in connecting both banks of the river. In particular, two key viewpoints established on the visual axes to the landmarks. The viewpoints would create an axis between the opposing viewpoint that would allow views of both landmarks.



4.6.4 - Intersections of Bikeway Routes Show Opportunity for Cyclist Wayfinding & Connections

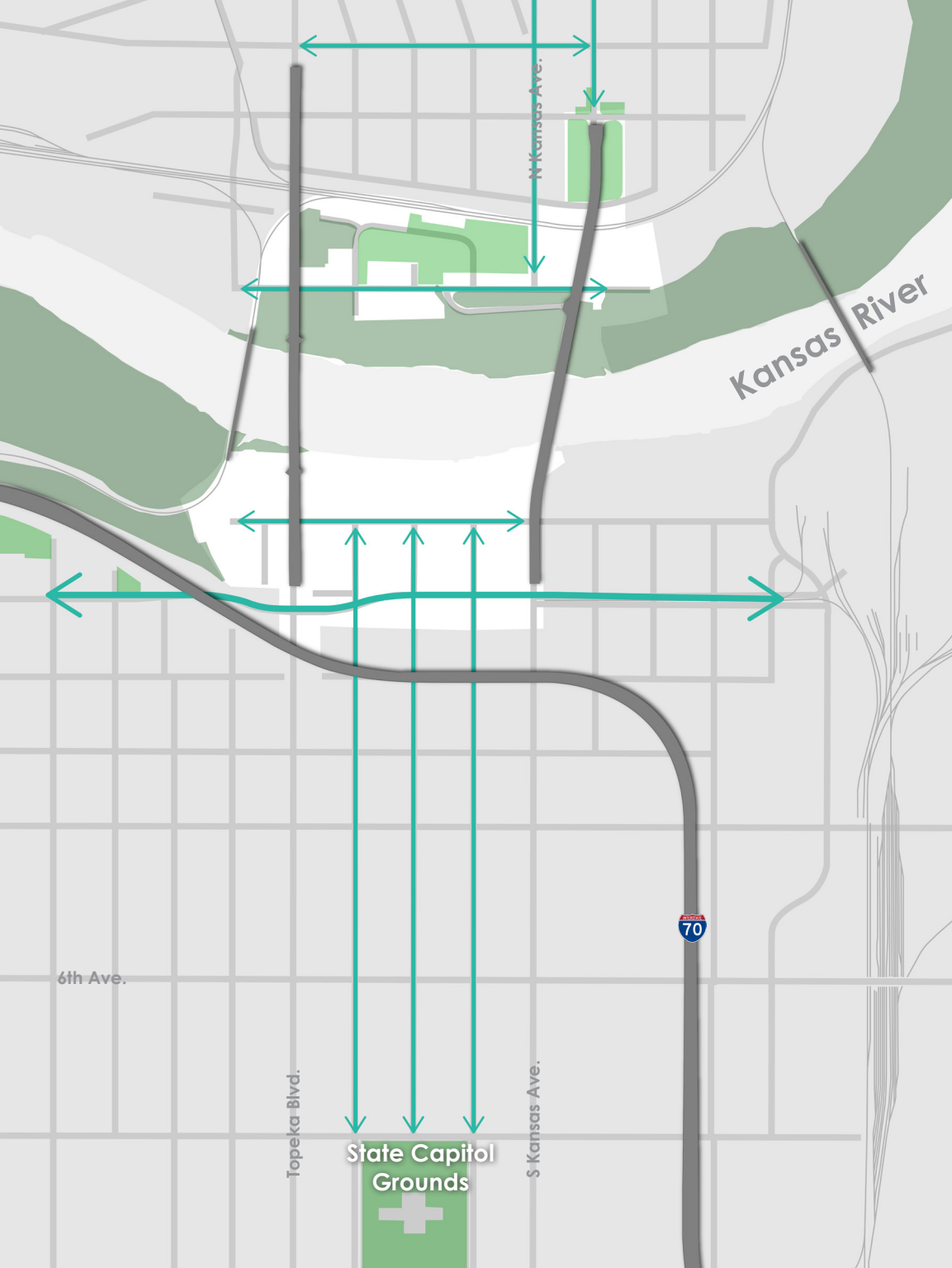
- North Topeka Bikeway
- Oakland-Potwin Bikeway
- Lyman/Lower Silver Lake Bikeway
- 4th Avenue Bikeway
- East-West Bikeway
- North Levee Trail
- Route End/Start Point
- Alternative Route
- Crucial Bikeway Intersection

The Bikeways Masterplan present route intersections with other bikeway routes, major city streets, and bridge landings. These intersections become crucial due to increased traffic of cyclists, pedestrians, and vehicles. The intersections should prioritize the safety of cyclists and pedestrians when at these intersections. They are crucial, secondly, because they can offer wayfinding functions that help cyclists and pedestrians navigate the bike routes to other destinations throughout the city. Some of the intersections at major street intersections can become gateways.



4.6.5 - Green Streets present the Opportunity to Connect Downtown Topeka Green Space to Green Space to the North

-  Green Space Bridge Connections
-  Park Green Space
-  Natural Green Space



Green streets offer an opportunity to create walkable environments that would connect the Capitol Grounds, neighborhoods, and bridge landings to the study area. Green streets would create comfortable and safe streets that focus on the pedestrian and open space more than conventional streetscapes. Green streets add to the aesthetic qualities of cities as well.



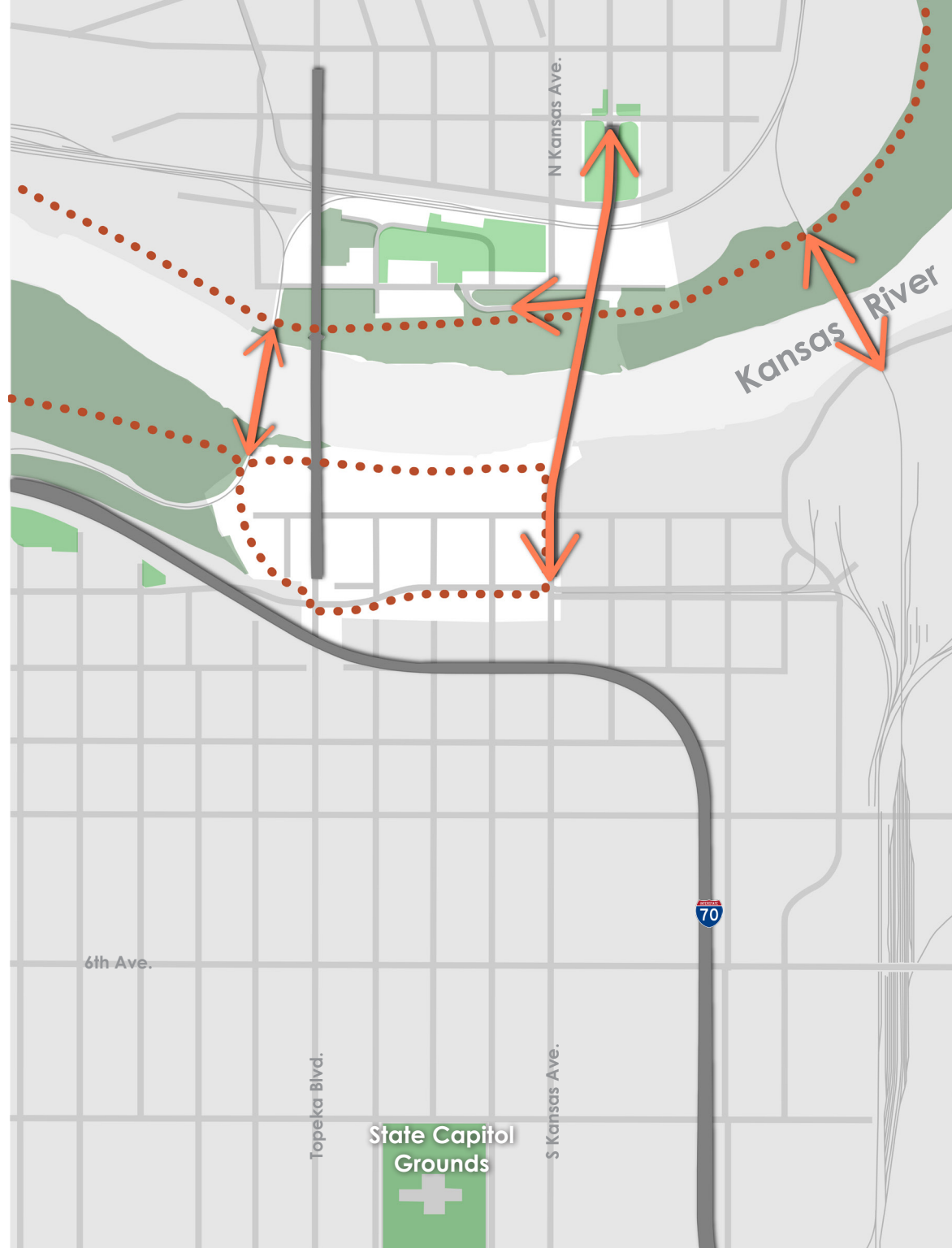
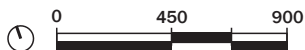
4.6.6 - Intersections of Bikeway Routes Show Opportunity for Cyclist Wayfinding & Connections

-  Green Space Bridge Connections
-  Trail Connections

 Park Green Space

 Natural Green Space

Trail systems are an additional method of linking green spaces together. Trails connect multiple locations of cities and are optimum along river corridors due to the open space provided by the river floodplain and typically natural green space. The levees present in the study area are ideal for a trail system due to their elevated nature offering views of the river. Kansas Avenue Bridge and the nearby railroad bridges present opportunity for creating comfortable links across the river and landing in the study area or landing on the levees.



A landscape photograph showing a wide river with a bridge in the distance. The bridge is a dark, multi-span structure. The left bank is covered in dense, bare trees. The sky is filled with soft, white clouds. The overall tone is muted and overcast.

4.7 - Comprehensive Analysis Maps



*Figure 4.7.0.1 - View east from the Kansas Avenue Bridge
(Johnson, 2019)*

4.7.1 - Comprehensive Analysis Map

-  Visual Axis
-  RR Crossing With Sidewalk (Ped. Connection)
-  RR Crossing Without Sidewalk (No Ped. Connection)
-  Bridge Landing Points
-  Drainage Areas
-  Fenced Areas
-  Railroads
-  Steep Slope
-  Parking Lot (Ground-Level)
-  Gas Station (Possible Brownfield Site)
-  Vacant Land
-  Radio Tower
-  Viewpoint
-  Attractive Facades
-  Unattractive Facades
-  Deteriorating Facades
-  General Facades
-  Aesthetic Landscape Views
-  Aesthetic Building Views
-  Water Interaction Area
-  Powerlines (Utility Hazard)

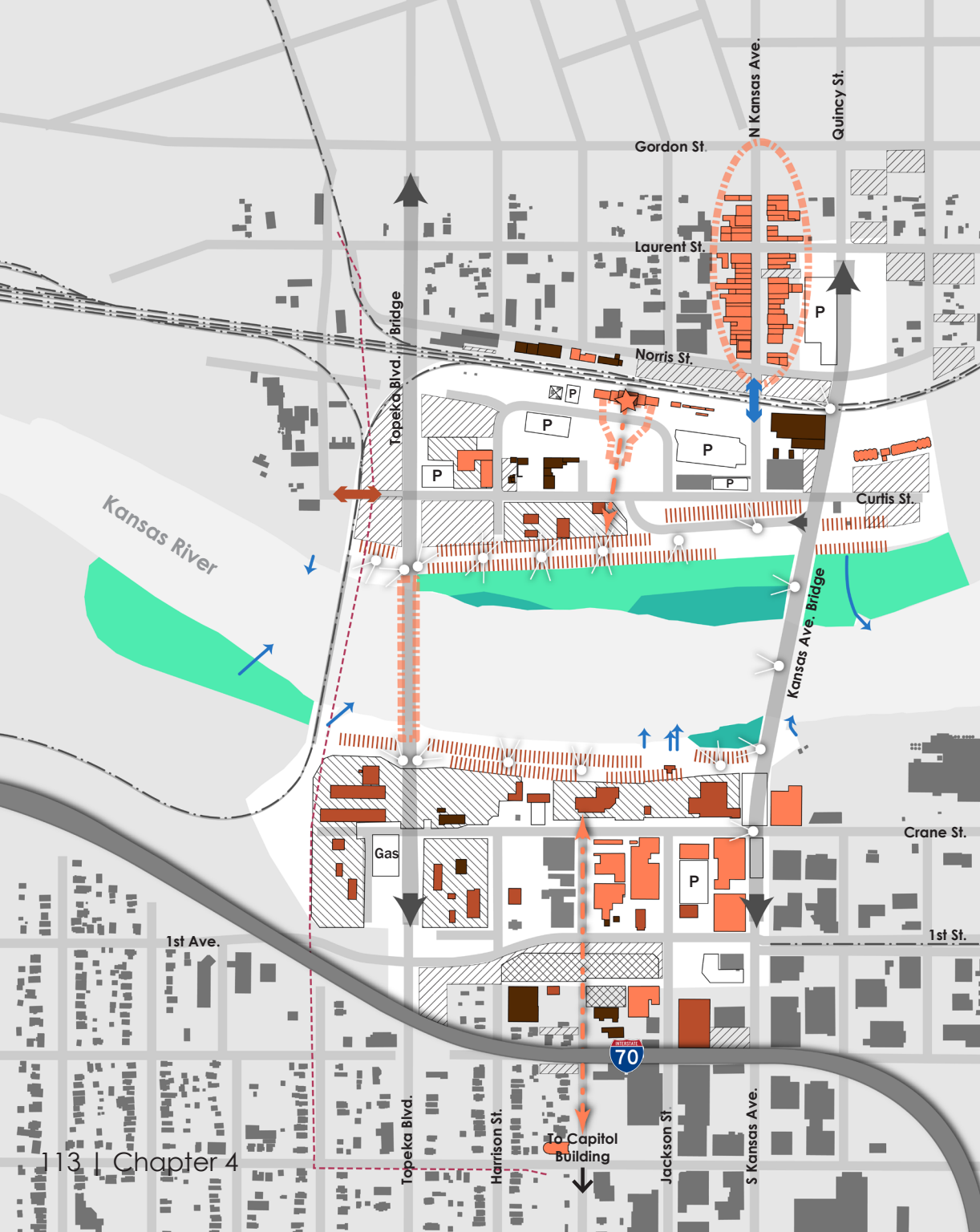
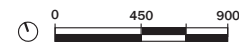




Figure 4.7.2 - Attractive Building Facade (Johnson, 2019)



Figure 4.7.3 - Unattractive Building Facade (Johnson, 2019)



Figure 4.7.4 - Deteriorating Building Facade (Johnson, 2019)

The comprehensive analysis map takes into account many site factors from visual axes to steep slopes and fenced areas.

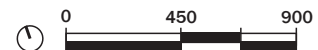
Evaluation of building facades aid in determining the maintenance and theme of a structure. Attractive or general facades have a character that is well-maintained and themed with a more historical aspect in design. These facades should mostly be retained or retrofitted to new uses in design. Unattractive facades tend to harbor uncomfortable visual experiences and do not entertain a unique theme for a riverfront district. If a building has an unattractive facade, it should be retrofitted or removed. A deteriorating facade signals an unkempt and poorly maintained building. Buildings with deteriorating facades should be removed, unless there is historical significance, in which case it should be retrofitted. When the buildings are classified as to be retained, retrofitted, or removed, it aids in forming the design.

4.7.5 - Linkage & Connection Strategy Map Using Green Streets, Trails, Gateways, and Access Points



- New Levee Access Point
- Access Point from Bridge (Ramp or Stairs)
- Pedestrian Elevated Parkway
- Pedestrian Rail Bridge
- Green Streets
- Trail System
- Major Gateway
- Pedestrian Gateway

Linking the South Bank and the North Crossings Area are vital to creation of a cohesive urban core. Currently, infrastructure that provides a method for connecting people across the river, levees, and railroads is the Kansas Avenue Bridge. Prioritizing the pedestrian more than vehicles can support city plans like the Bikeways plan and pedestrian plan. Circulation continues with green streets and gateways creating an attractive riverfront district. Access to the river and floodplain requires access through the levees, which are suitable for trail systems.





-  New Levee Access Point
-  Access Point from Bridge (Ramp or Stairs)
-  Pedestrian Elevated Parkway
-  Pedestrian Rail Bridge
-  Green Streets
-  Trail System
-  Major Gateway
-  Pedestrian Gateway

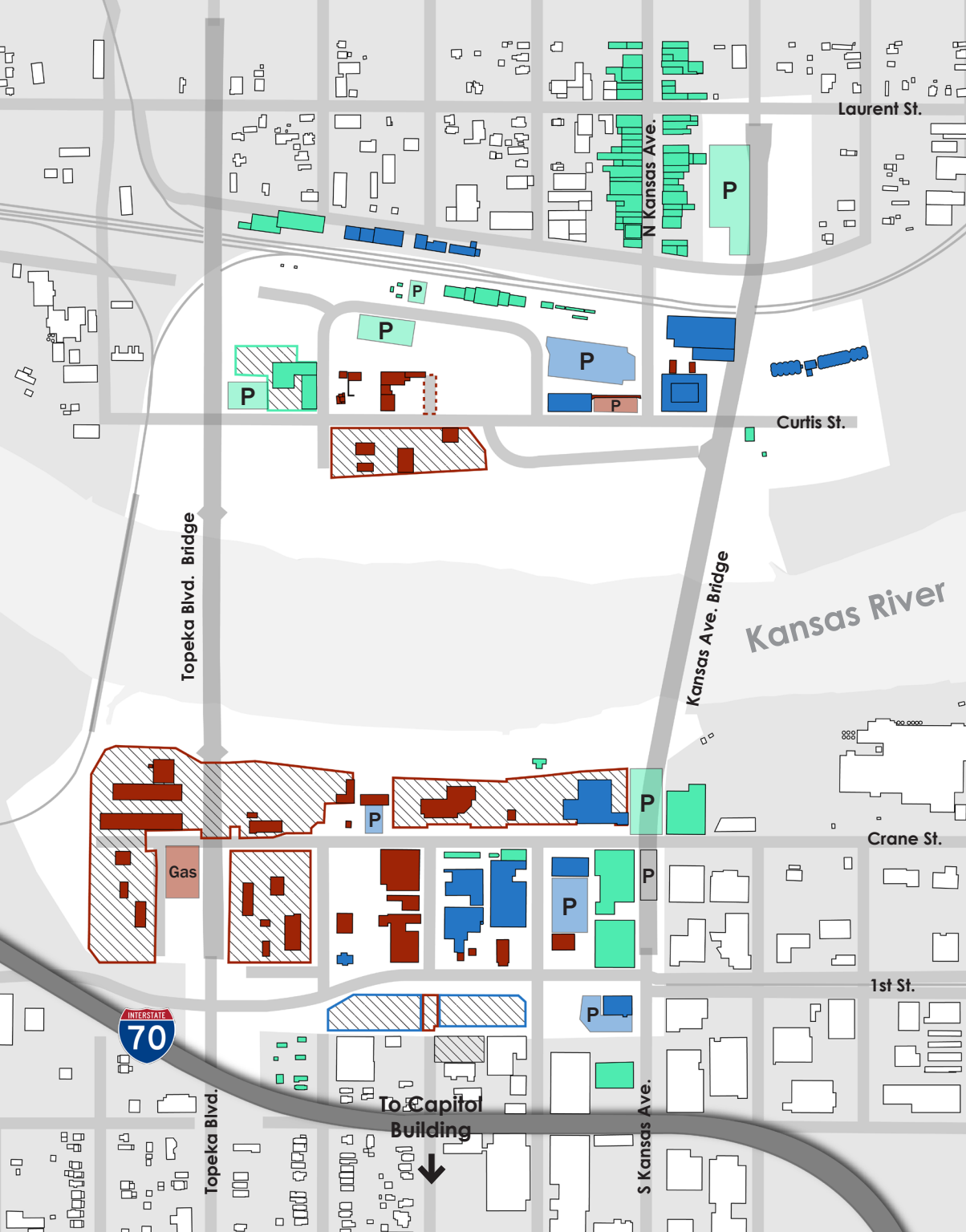


4.7.6 - Linkage & Connection Strategy Aerial Using Green Streets, Trails, Gateways, and Access Points

4.7.7 - Map of Buildings & Other Elements Retained, Removed, or Retrofitted

- Retained Buildings
- Retained Fenced Areas
- P Retained Parking Lots
- Removed Buildings
- Removed Fenced Areas
- P Removed Parking Lots
- Removed Street
- Gas Removed Gas Station
- Retrofitted Buildings
- Retrofitted Fenced Areas
- P Retrofitted Parking Lots

Assessment of multiple elements resulted from the comprehensive analysis of the site and immediate context. Elements included building, fenced areas, parking lots, streets, and a gas station. These elements were assessed as potential for retention in design, for removal, or for retrofit. Buildings were assessed based on the quality of their facades and their historical qualities. Most fenced areas were removed with the exceptions of the TRM's Children's Castle and the parcel just south of 1st Street. Most elements near Kansas Ave. were retained and retrofitted, while most elements near the Topeka Blvd. Bridge were removed.

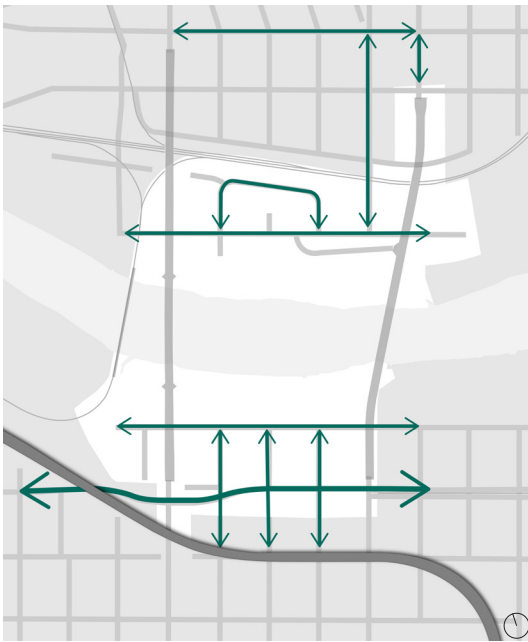




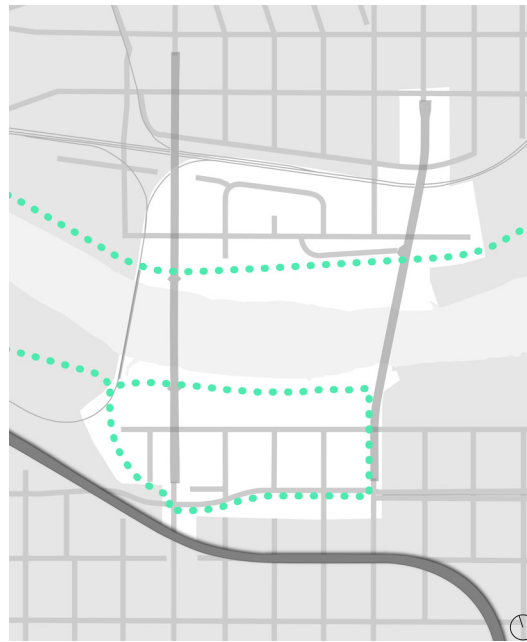
4.8 - Design Strategies



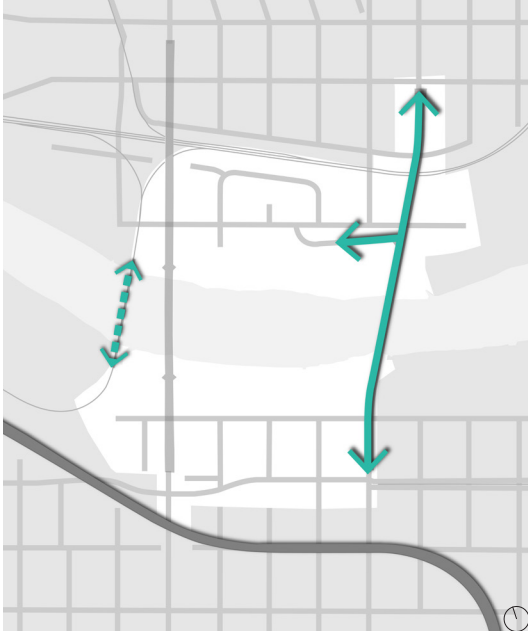
*Figure 4.8.0.1 - View northwest from the south levee
(Johnson, 2019)*



A. Green Streets



B. Trail System



C. Bridge Crossings



D. Key Viewpoints

Strategy 1: Create a Green Network Linking the Riverfront to the City

The Topeka Riverfront is separated from the rest of the city by multiple barriers. A primary barrier is the lack of pedestrian connection to the Kansas River from limited infrastructure or levees. One strategy to re-establish a connection between the Kansas River and the City of Topeka is to create a green network. This network allows for the physical and visual accessibility between the people and the river. Four design moves are considered in this network: the conversion of streets into green streets, the creation of a trail system, prioritization of pedestrians on bridge crossings, and establishment of key viewpoints along the levees and Kansas Avenue bridge. Combining these four design moves forms the green network of the Topeka Riverfront. The green network establishes and prioritizes pedestrian and cyclist connections and linkages to improve walkability to the Kansas River.

*(Top Left) Figure 4.8.1.1 - Green Streets Diagram
(Top Right) Figure 4.8.1.2 - Trail System Diagram
(Bottom Left) Figure 4.8.1.3 - Bridge Crossings Diagram
(Bottom Right) Figure 4.8.1.4 - Key Viewpoints Diagram*

Legend

Green Street



Trail System



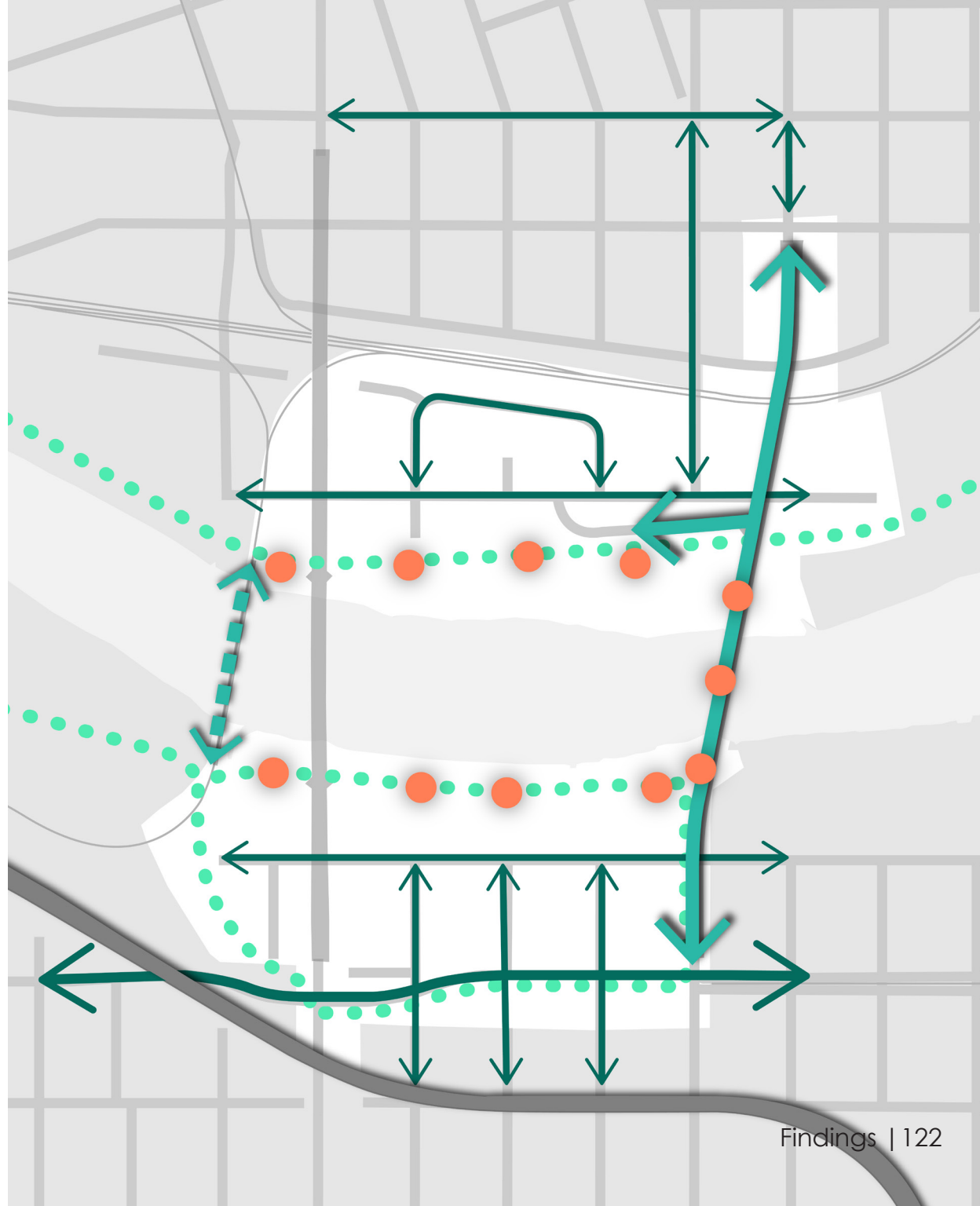
Street Bridge Crossing



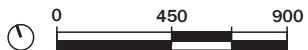
Railroad Bridge Crossing



Key Viewpoints



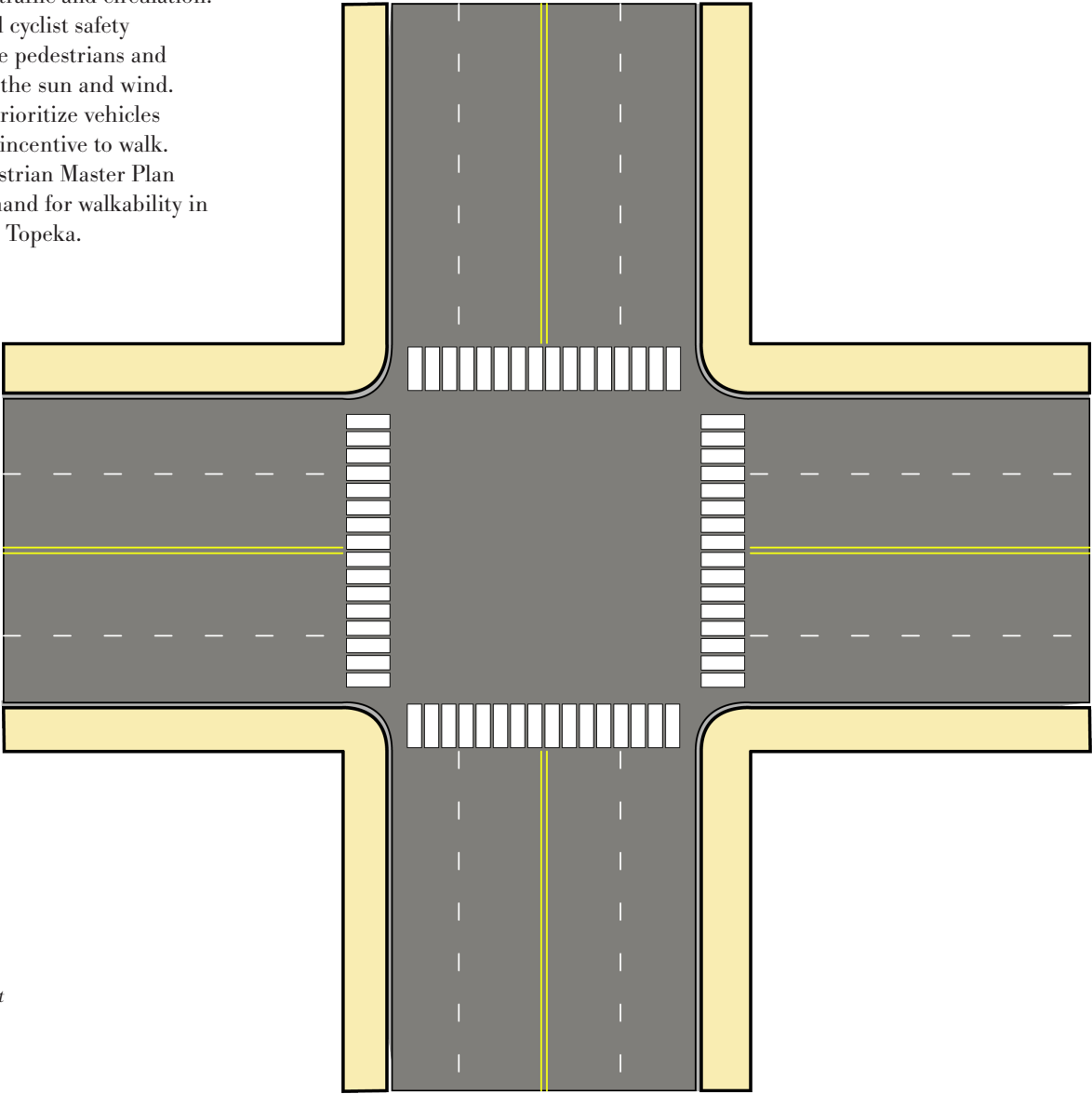
(Right) Figure 4.8.1.5 - Compiled Green Network Strategy Map



Strategy 2:

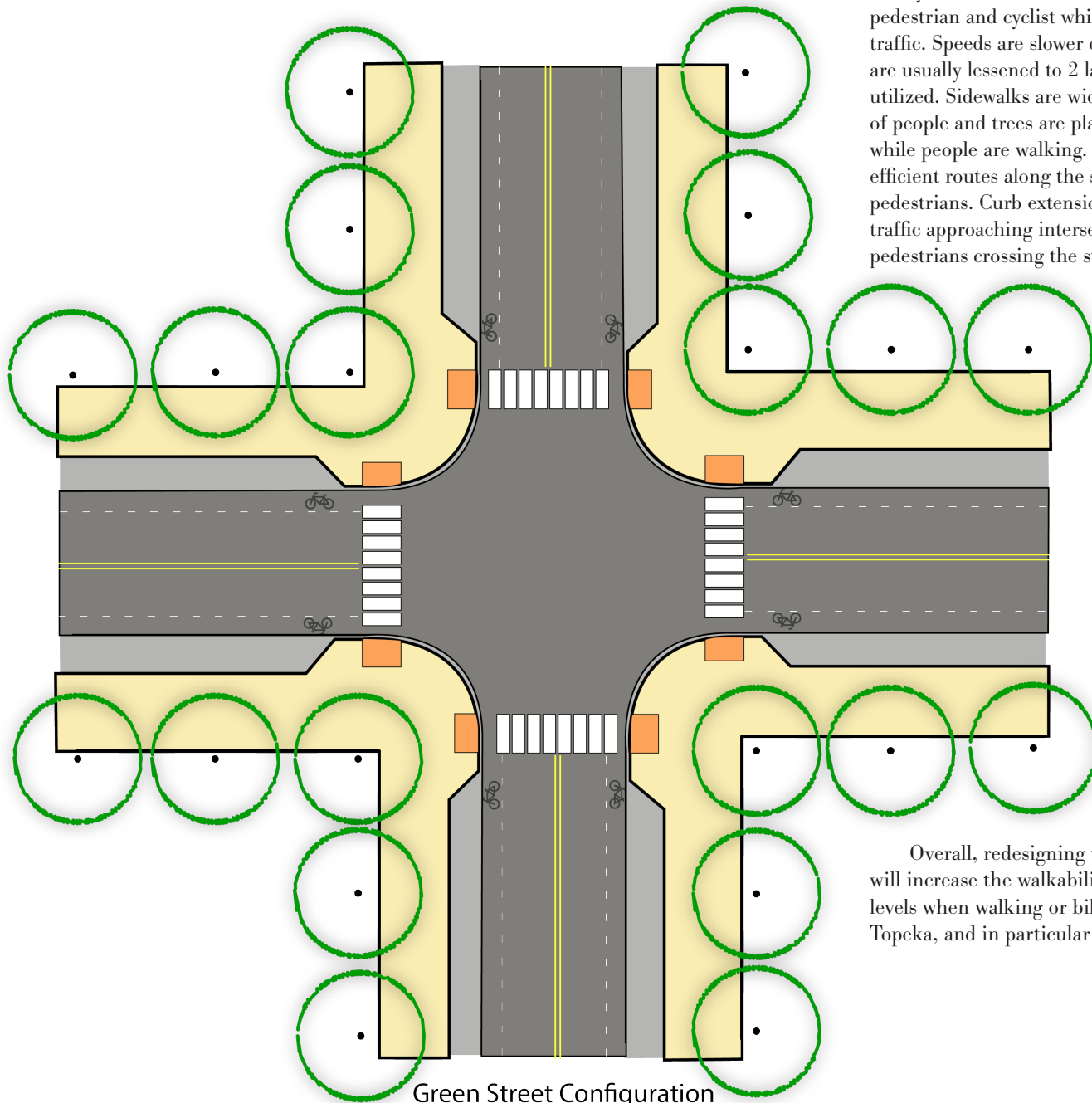
Convert Streets into Green Streets

The existing street structure near the Topeka Riverfront prioritize vehicular traffic and circulation. There is limited pedestrian and cyclist safety infrastructure. The streets leave pedestrians and cyclists feeling very exposed to the sun and wind. Since many streets in Topeka prioritize vehicles over pedestrians, there is little incentive to walk. However, as shown in the Pedestrian Master Plan for Topeka, there is a high demand for walkability in and near Downtown and North Topeka.



(Right) Figure 4.8.2.1 - Normal Street Configuration
(Opposite) Figure 4.8.2.2 - Green Street Configuration

Green streets seek to change this. Green Streets, in the context of this project, prioritize pedestrians and cyclists over vehicular traffic. They prioritize the pedestrian and cyclist while providing for vehicular traffic. Speeds are slower on these streets and lanes are usually lessened to 2 lanes. On-street parking is utilized. Sidewalks are widened for greater number of people and trees are planted to provide shade while people are walking. Bike lanes offer cyclists efficient routes along the streets without hindering pedestrians. Curb extensions additionally slow traffic approaching intersections to further protect pedestrians crossing the street.



Green Street Configuration

Overall, redesigning the street configuration will increase the walkability of the city and comfort levels when walking or biking for Downtown, North Topeka, and in particular Topeka's riverfront.

Strategy 3:

Prioritize Pedestrians & Cyclists on Kansas Avenue Bridge

The existing infrastructure of the Kansas Avenue Bridge provides safe passage for pedestrians and cyclists crossing the Kansas River. Pedestrians are confined to an 8' wide Sidewalk protected by a concrete barrier. Pedestrians walking on the sidewalk are uneasy when crossing due to vehicles traveling by at 35-40 mph. The

speed is too fast for cyclists to adequately share the road with vehicles.

A shift in the design of the bridge will provide a safe corridor separated from the higher speeds of traffic. This strategy will provide pedestrians and cyclists a more comfortable passage across the Kansas River. This passage would better link

the NOTO District with the Downtown than currently provided by the existing infrastructure of the bridge.

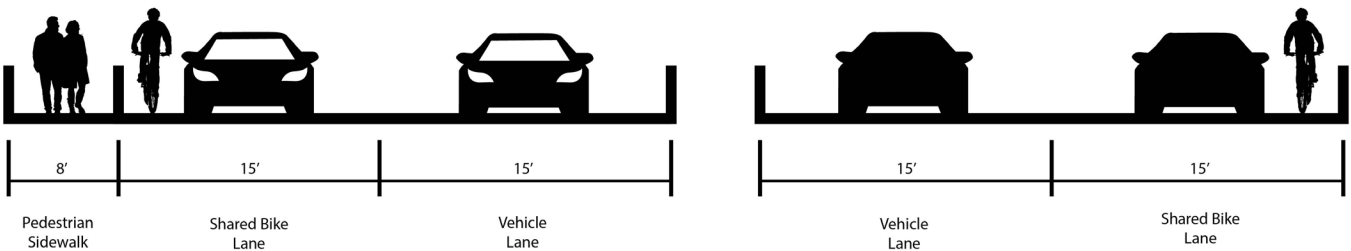


Figure 4.8.3.1 - Existing Bridge Configuration

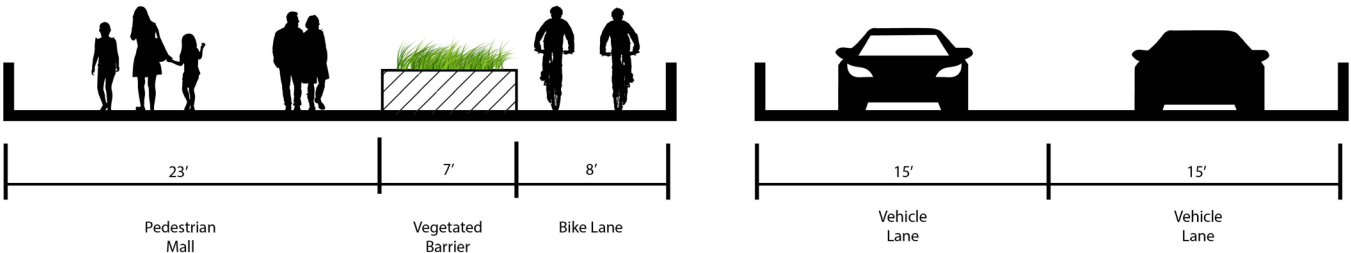


Figure 4.8.3.2 - Two Full-Lane Redesign Option, Potential for One-Lane Pedestrian & Three-Lane Vehicular Option

Traffic Counts (24-hr)

Kansas Avenue Bridge: 8545

Topeka Boulevard Bridge: ~13200 - 17325

(KDOT 2017)

- Current Bridge traffic capacity is underutilized; eliminating two lanes for pedestrian use would require further traffic analysis.
- Another option may be reduce pedestrian to one-lane and have a 2+1 bi-directional roadway.



Figure 4.8.3.3 - Existing Kansas Ave. Bridge
Picture (Johnson, 2019)

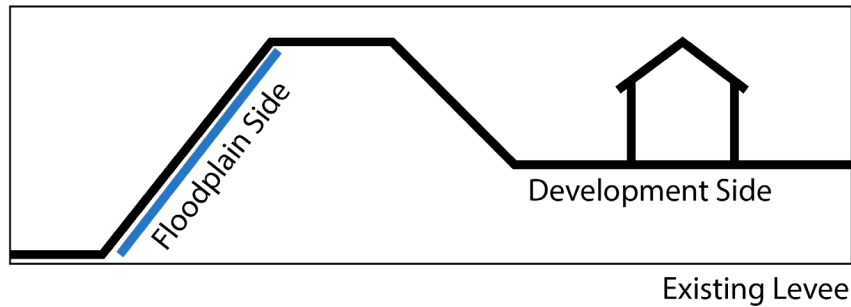


Figure 4.8.3.4 - Proposed Redesign of Kansas
Ave. Bridge (Johnson, 2019)

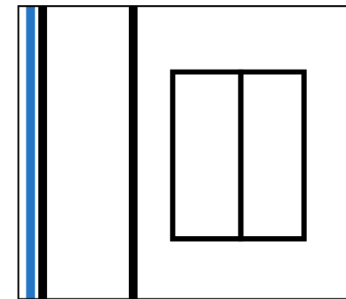
Strategy 4: Access to Levees

Three methods can be used to grant physical access to the top of both levees. The creation of a dike park uses lots of fill to create a gradual slope up to the top of the levee. This creates a sloped park space. The gradient slope strategy allows for more flat land up to the levee while maintaining an accessible slope. The terraced slope strategy uses stairs or multiple platforms to access the top of the levee.

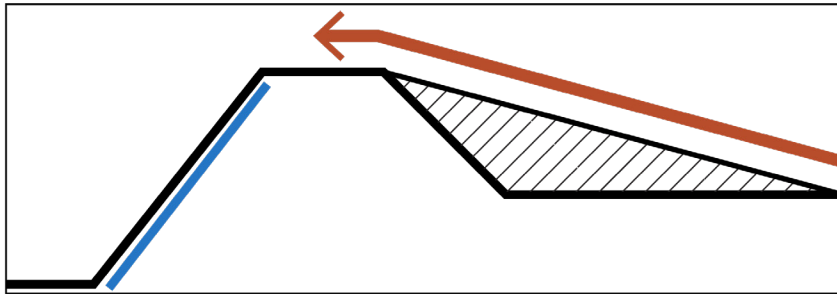
Cross-Section View



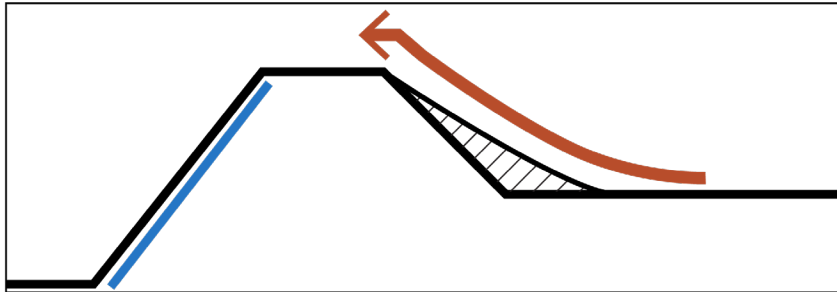
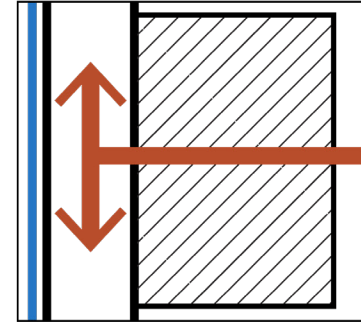
Plan View



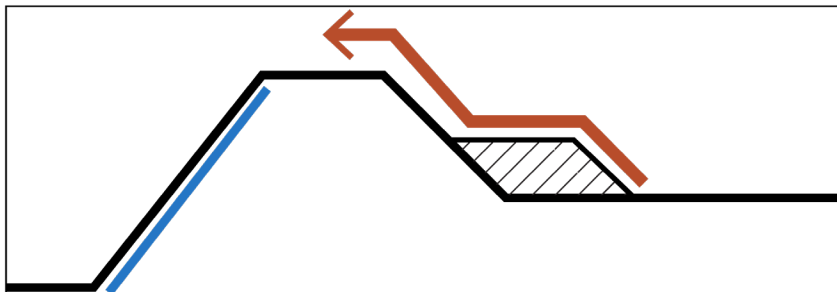
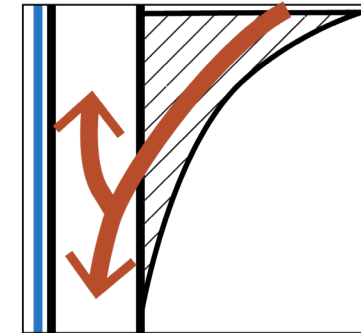
(Above) Figure 4.8.4.1 - Existing Levee Diagram
(Opposite Top) Figure 4.8.4.2 - Dike Park Strategy Diagram
(Opposite Middle) Figure 4.8.4.3 - Gradient Slope Strategy
(Opposite Bottom) Figure 4.8.4.4 - Terraced Slope Strategy



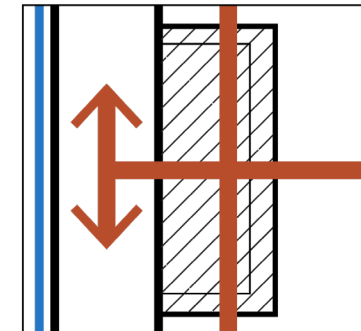
A. Dike Park Strategy



B. Gradient Slope Strategy



C. Terraced Slope Strategy



Strategy 5:

Levee Access from the Topeka Blvd. Bridge

The Topeka Boulevard Bridge presents another method for connection to the levee trail system. Due to the small elevation change (~15'-~20') between the top of the bridge and the top of the levees, a series of ramps or stairs can provide direct access from the sidewalks on the bridge

to the levees. The stairs would add more entry points to the riverfront for greater connectivity and walkability along the Topeka Boulevard Bridge.



Existing Levee & Bridge

The existing levee and trail on the north bank of the Kansas River sits below the Topeka Boulevard Bridge only ~15'. This presents an opportunity to connect people to the levee other than only one bridge.

Bridge Connection to Trail

The bridge presents the opportunity to connect to the levee trail so that there is a multiplicity of accessible routes to the riverfront instead of only connecting to the Kansas Avenue Bridge.

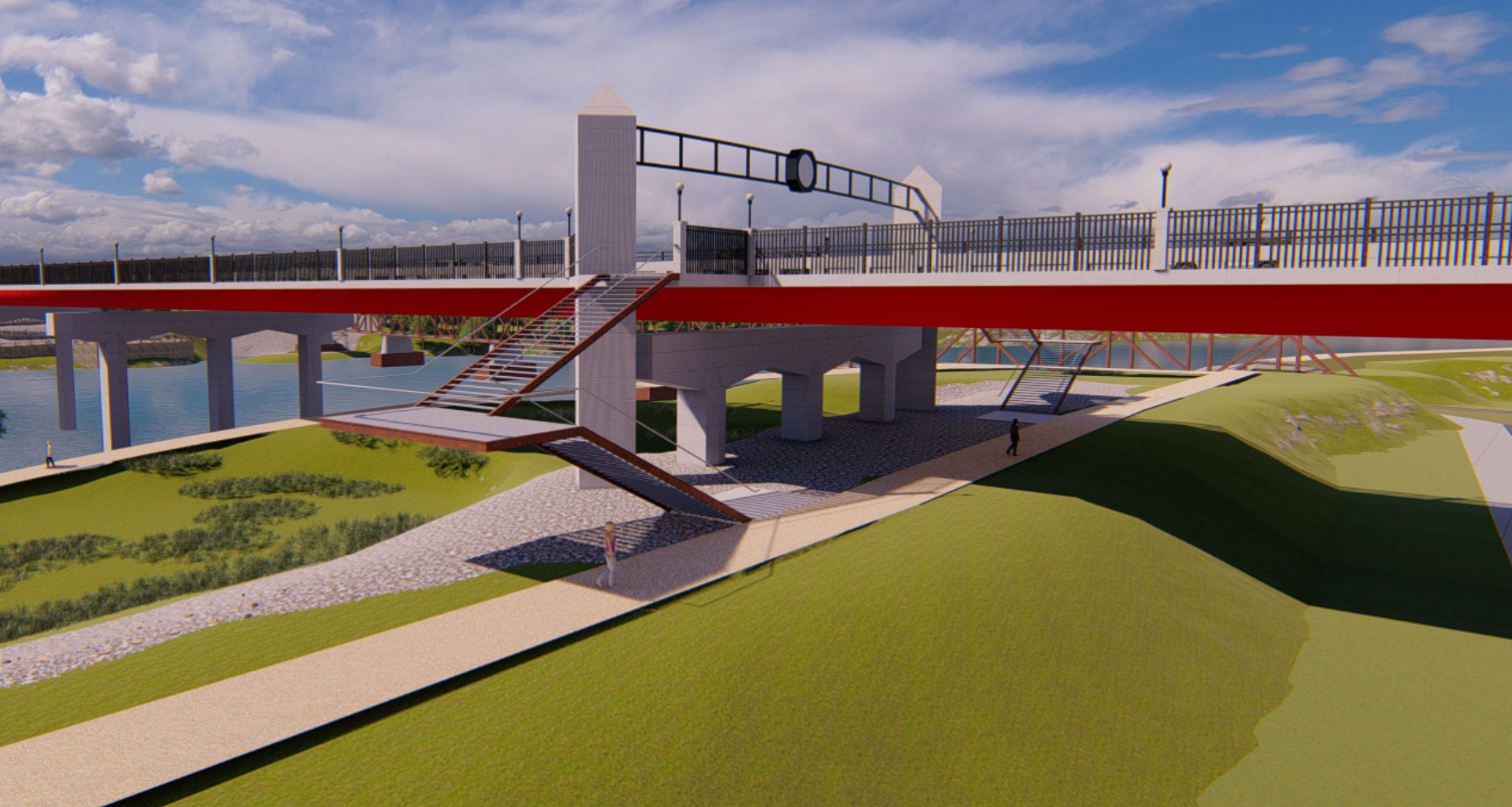
Legend

Ramp/Stair Connection



Trail System





Proposed Stair Connection

The staircases would provide easier access points for people walking from nearby neighborhoods along Topeka Blvd. Routes between the north and south banks of the Kansas River would increase in the walkability of the area in coordination with the redesign of the Kansas Avenue Bridge.

(Opposite Top) Figure 4.8.5.1 - Existing Levee & Bridge Picture (Johnson, 2018)

(Opposite Bottom) Figure 4.8.5.2 - Potential Bridge Connection to Levee Trail (Johnson, 2019)

(Above) Figure 4.8.5.3 - Proposed Stair Connection to the Topeka Blvd. Bridge (Johnson, 2019)

Strategy 6: Establish Key Viewpoints along the Levees

As shown in the dilemma maps, the existing levee system hinder the visual connection between the river and the city. The levees are necessary for the flood protection of the city. The levees, although they hinder views, offer opportunity to serve as excellent vantage points both for the river as well as the city. In combination with a trail system, the levees can become an enjoyable and effective element in the

riverfront design.

Key viewpoints built upon larger flat areas on top of the levees allow for the placement of furniture and the movement of people. The viewing points acting as outlooks for the surrounding area can aid in creating a strong new image for the city. These outlooks allow for multifunctionality of space atop the levees such as informal gatherings, relaxing, river viewing, and

trail running. Along with all these uses, the outlooks act as transitional spaces for navigating between both sides of the levees, being equipped with stairs or ramps to the street on the city-side or to the floodplain on the river-side of the levees.

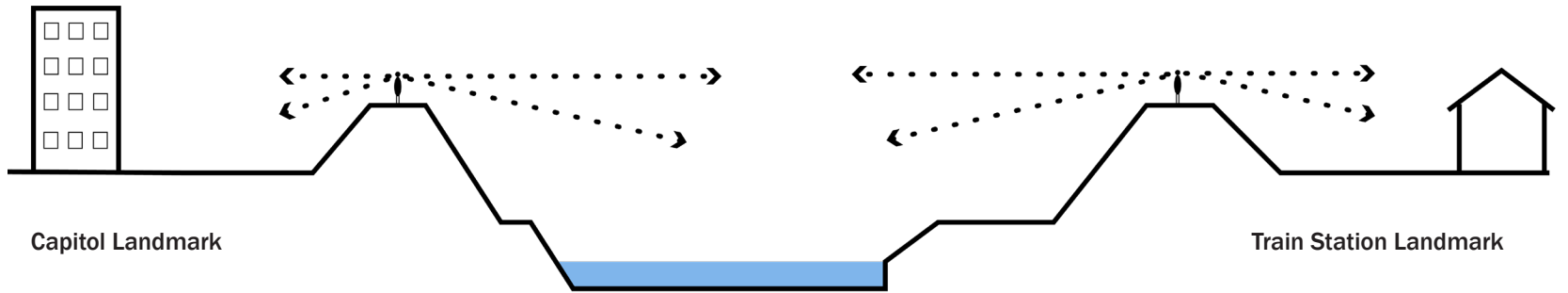


Figure 4.8.6.1 - General Levee Views

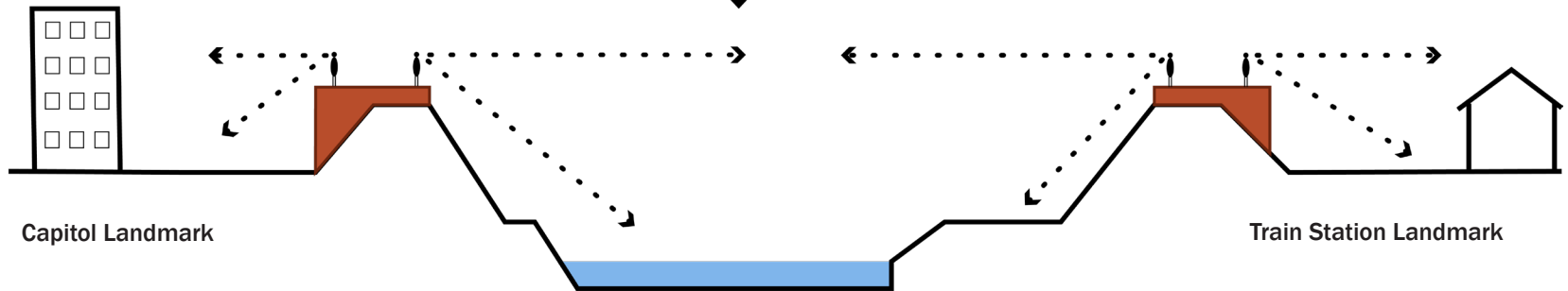


Figure 4.8.6.2 - Axial Landmark Views

Existing Levee Trail

The existing levee and trail on the north bank of the Kansas River shows that one can view to the opposite levee top when standing on the top of the levee. Views are directed primarily along levee rather than to the river or opposing bank.



*Figure 4.8.6.3 - Existing Levee Picture
(Johnson, 2018)*

North Crossing Outlook

The proposed North Outlook on the north bank of the Kansas River focuses movement and flow of people and views between the Great Overland Station and the river. The views from the North Outlook are directed primarily toward the river and opposing bank.



*Figure 4.8.6.4 - North Outlook Axial View to Great Overland Station
(Johnson, 2019)*

South Crossing Outlook

The proposed South Outlook on the south bank of the Kansas River emphasizes the visual axis to the Capitol along Van Buren. The Outlook provides seating areas to enjoy and relax at this vantage point. Stairs connect the South Outlook to the floodplain for better connection between spaces along the levee.



*Figure 4.8.6.5 - South Outlook Axial View to Capitol Building
(Johnson, 2019)*

Strategy 7:

Access to Floodplain & Water Interaction

Access to the floodplain and interaction with the water can be achieved in a few different ways. The first way requires that a floodplain is reasonably wide enough for vegetation like trees. This allows for a more natural trail system in the floodplain and allows for views and access to the water. The promenade strategy creates a flat hardscape walk along the shoreline of the river. Being very formal in nature, this strategy can allow for the direct access to the river via steps or ramps for water recreation like kayaking or fishing. The terraced strategy allows for direct water access and views of the river. As the river floods, this strategy grants use if floods are not very high. The pier strategy constructs a platform jutting out into the river to improve views, access, and recreational water activities. If no direct river access is attainable, the levee top provides two other alternatives. The levee promenade strategy functions much like the promenade strategy but allows only for visual access to the river from the levee. The outlook strategy creates a flat balcony that functions as a viewpoint. This outlook would only allow visual access to the river.

(Diagram A) Figure 4.8.7.1 - Floodplain Strategy

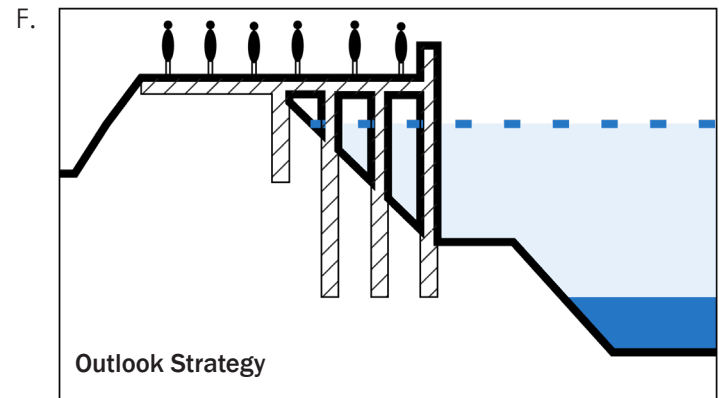
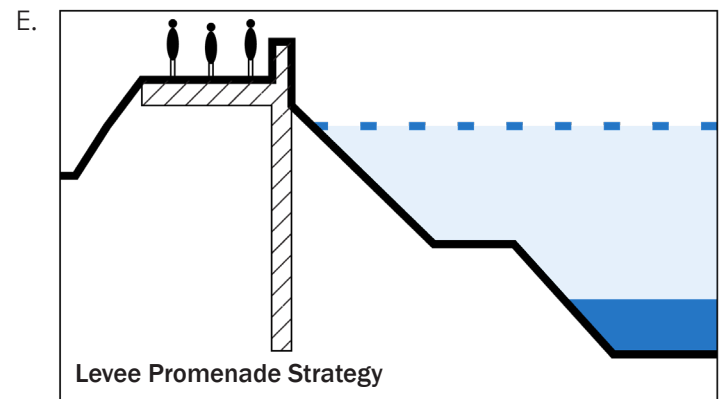
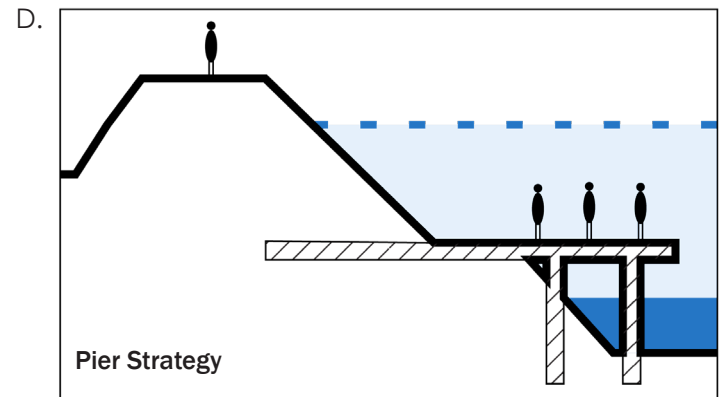
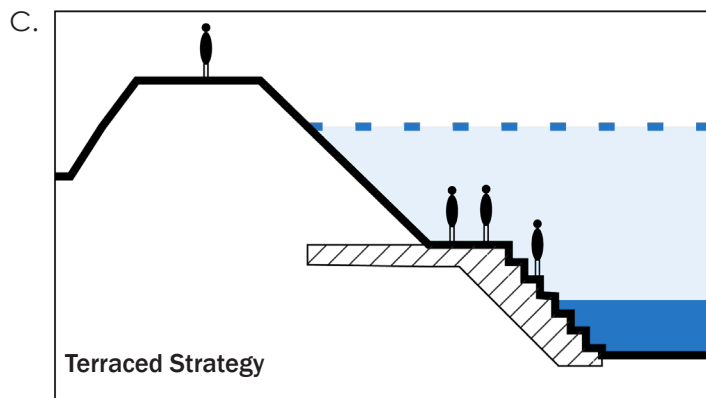
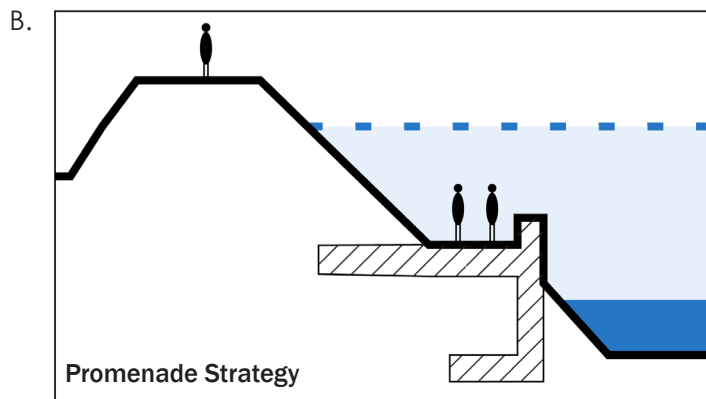
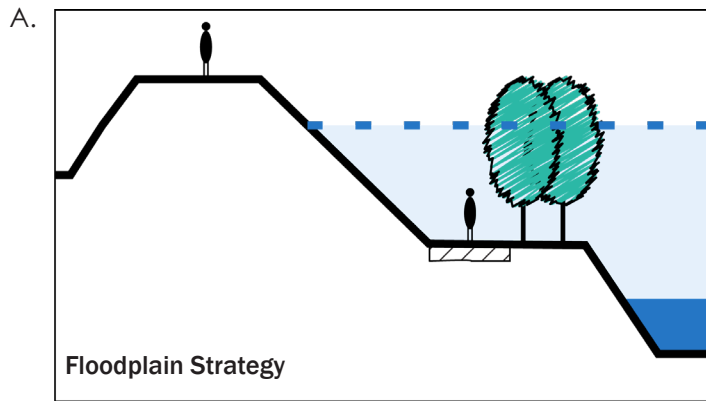
(Diagram B) Figure 4.8.7.2 - Promenade Strategy

(Diagram C) Figure 4.8.7.3 - Terraced Strategy

(Diagram D) Figure 4.8.7.4 - Pier Strategy

(Diagram E) Figure 4.8.7.5 - Levee Promenade Strategy

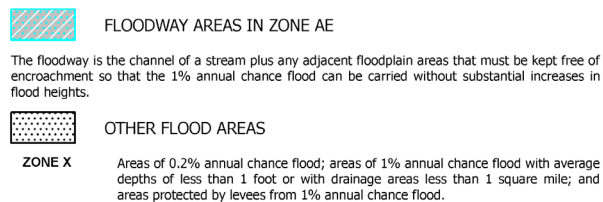
(Diagram F) Figure 4.8.7.6 - Outlook Strategy

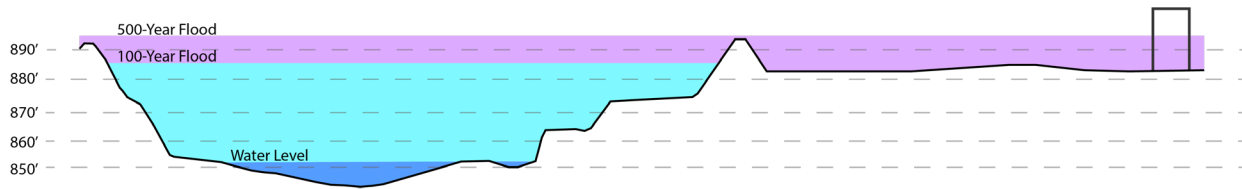


Raise Levee Height to Improve Flood Protection

A projective design should accommodate effective flood protection to ensure the success and continuation of a riverfront district. As part of the design of the levees, the height of the levees should be raised to contain a 500-year flood to better protect development in the city.

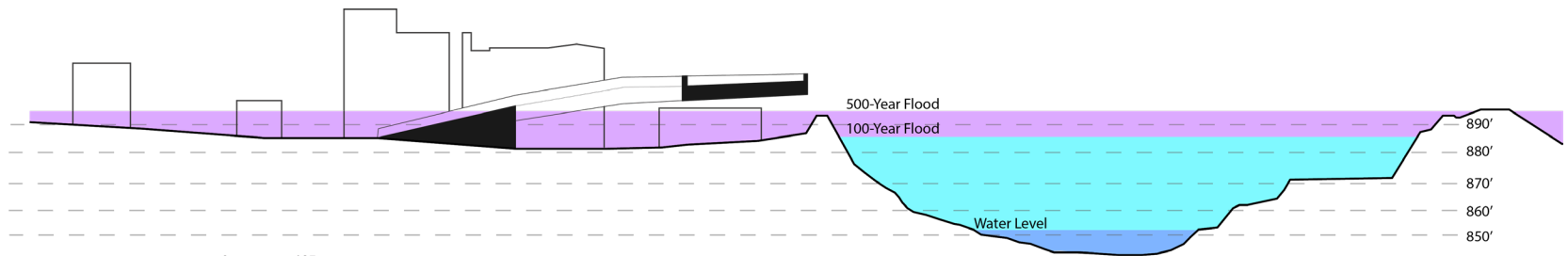
This aerial map shows the proposed alignment for the W. 1st St. Bridge in Portland, Oregon. The bridge alignment is highlighted with a red hatched pattern, and the bridge deck is shown with a blue hatched pattern. The map includes street names such as W. 1st St., W. 2nd St., W. 3rd St., W. 4th St., W. 5th St., W. 6th St., W. 7th St., W. 8th St., W. 9th St., W. 10th St., W. 11th St., W. 12th St., W. 13th St., W. 14th St., W. 15th St., W. 16th St., W. 17th St., W. 18th St., W. 19th St., W. 20th St., W. 21st St., W. 22nd St., W. 23rd St., W. 24th St., W. 25th St., W. 26th St., W. 27th St., W. 28th St., W. 29th St., W. 30th St., W. 31st St., W. 32nd St., W. 33rd St., W. 34th St., W. 35th St., W. 36th St., W. 37th St., W. 38th St., W. 39th St., W. 40th St., W. 41st St., W. 42nd St., W. 43rd St., W. 44th St., W. 45th St., W. 46th St., W. 47th St., W. 48th St., W. 49th St., W. 50th St., W. 51st St., W. 52nd St., W. 53rd St., W. 54th St., W. 55th St., W. 56th St., W. 57th St., W. 58th St., W. 59th St., W. 60th St., W. 61st St., W. 62nd St., W. 63rd St., W. 64th St., W. 65th St., W. 66th St., W. 67th St., W. 68th St., W. 69th St., W. 70th St., W. 71st St., W. 72nd St., W. 73rd St., W. 74th St., W. 75th St., W. 76th St., W. 77th St., W. 78th St., W. 79th St., W. 80th St., W. 81st St., W. 82nd St., W. 83rd St., W. 84th St., W. 85th St., W. 86th St., W. 87th St., W. 88th St., W. 89th St., W. 90th St., W. 91st St., W. 92nd St., W. 93rd St., W. 94th St., W. 95th St., W. 96th St., W. 97th St., W. 98th St., W. 99th St., W. 100th St. A north arrow is located in the bottom right corner.





Section A-A

Figure 4.8.8.2 - Section A-A



Section B-B

Figure 4.8.8.3 - Section B-B

Figure 4.8.8.4 - Flood Levels with Existing Levee

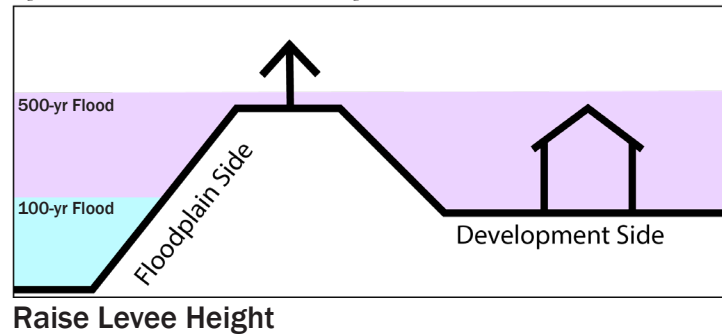
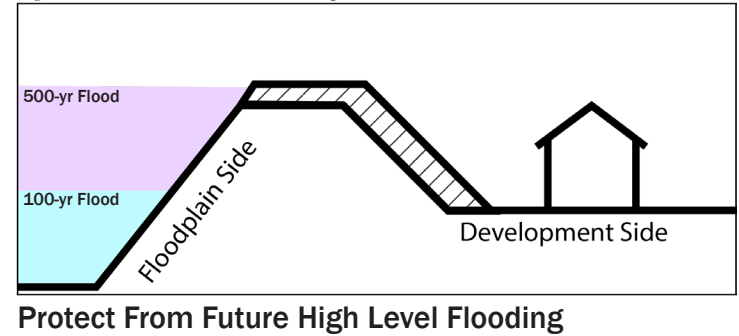


Figure 4.8.8.5 - Flood Levels with Proposed Raised Levee



Strategy 9:

Connect Green Streets to Levees through Plaza Spaces

The green network creates connection throughout the study area, but there is a lack of connection between the key viewpoints and trail system with the green streets. To integrate the green network, plaza spaces introduce a viable method for connecting the elements. In addition, they provide a gathering place for visitors to the site and are multifunctional in nature. The presence of a green street creates an opportunity for a plaza space near the intersection of the green streets. In the case of only a visual axis, the axis directs the plaza space closer to the key viewpoint. The plaza provides connection between the trail system and the green streets in both cases.

Legend

Green Street



Trail System



Key Viewpoints



Visual Axis



Plaza Space

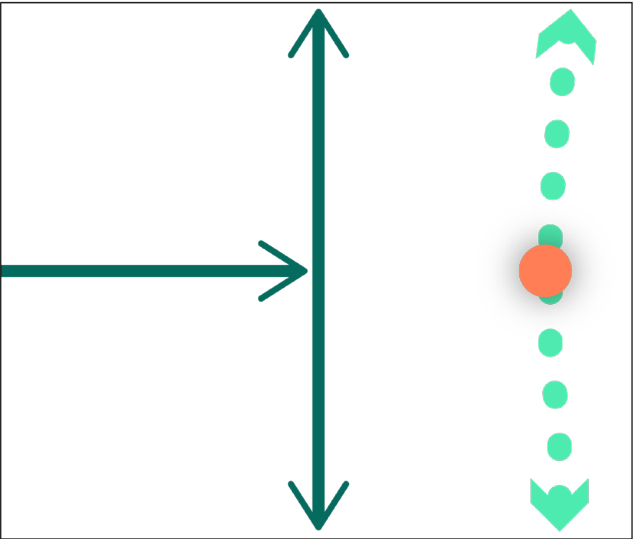


Figure 4.8.9.1 - Green Network Strategy

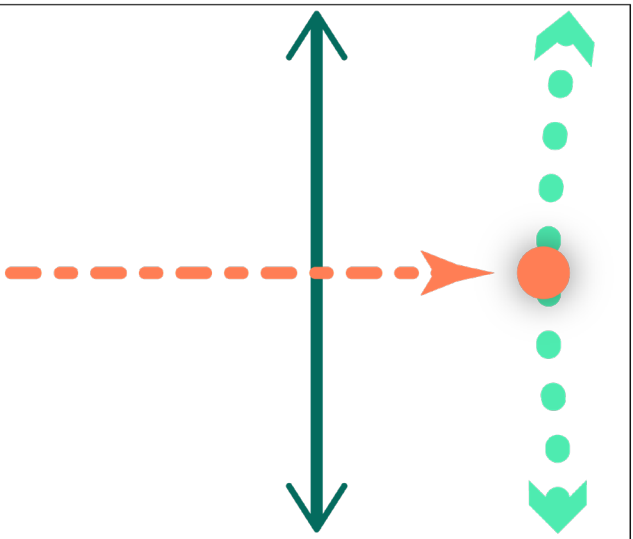


Figure 4.8.9.4 - Green Network Strategy with Visual Axis

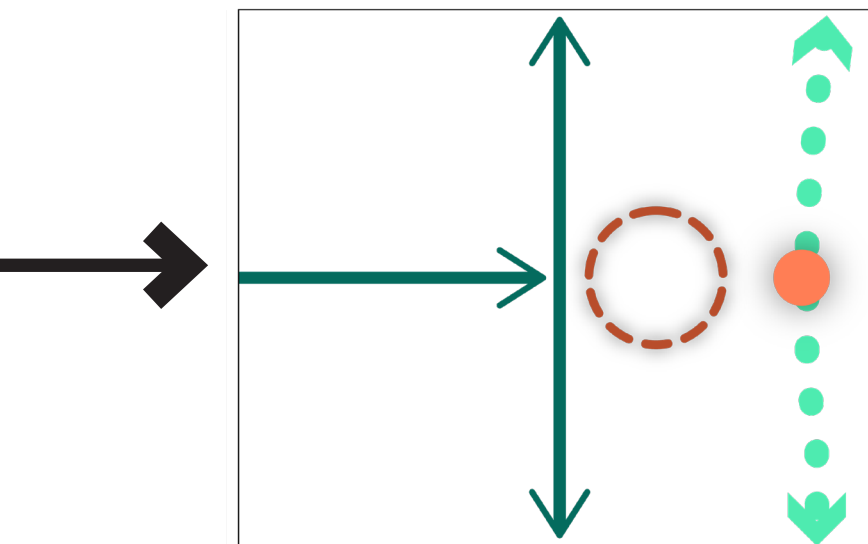


Figure 4.8.9.2 - Introduction of Plaza Space

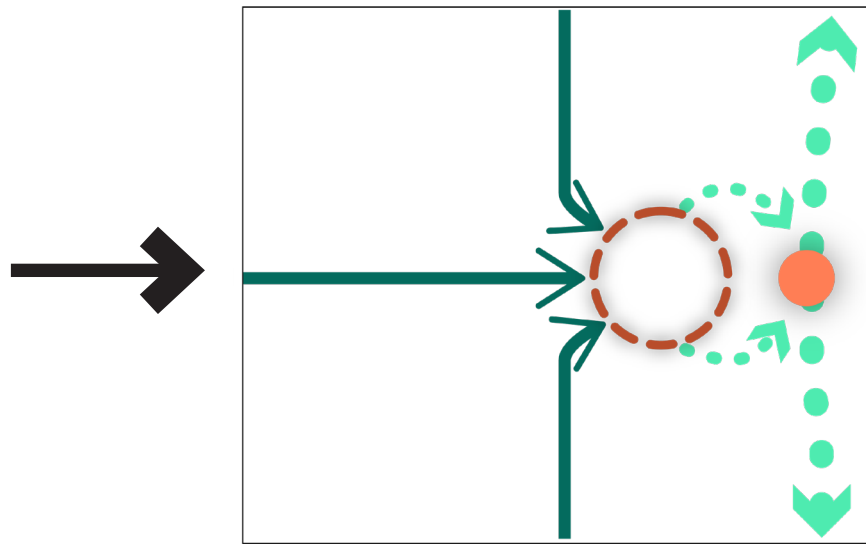


Figure 4.8.9.3 - Plaza Space Linking Green Network

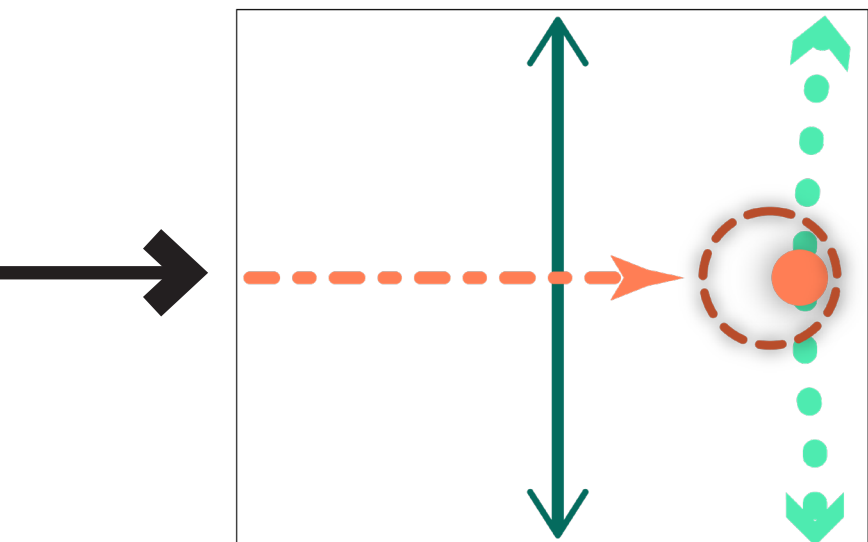


Figure 4.8.9.5 - Introduction of Plaza Space on Trail & Key Viewpoint

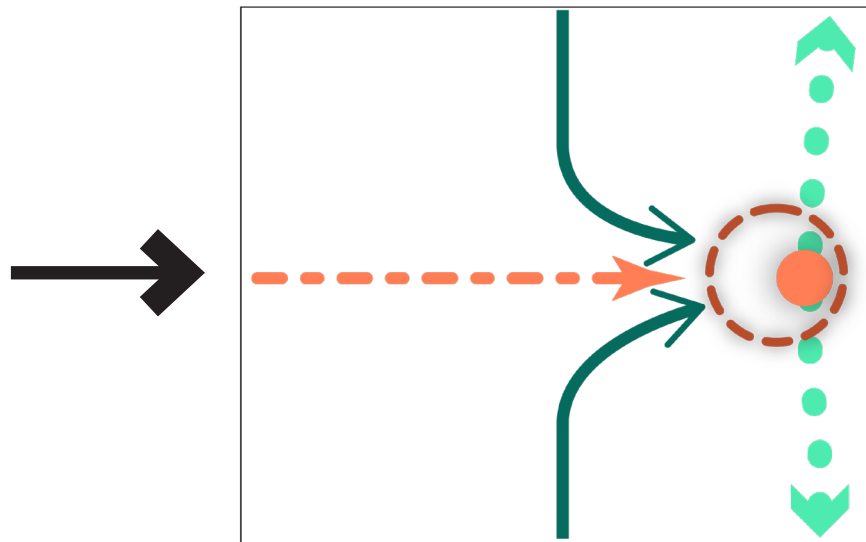


Figure 4.8.9.6 - Plaza Space Linking Green Network on Trail & Key Viewpoint

Strategy 10:

Create Attractions at the End of Street Networks

For a riverfront to be successful, there needs to be functions that bring people into the site. Much like grocery stores, attractions need to be located toward the furthest portions of a site to create an overall actively used site. Otherwise, a site will be only used near the attractions other than the river itself. So if the main attraction is located near the front of a site, most of the time, the site will be mostly used around the attraction.

On the north side of the river, the Great Overland Station is an already established landmark and attraction, being a museum and home to the Kansas Hall of Fame. It is located near the middle and back portion of the North Crossings area. On the south side of the river, new attractions should be created to utilize the whole site to create more development interest in the area. Attractions are usually museums, aquariums, sports facilities and stadiums, and breweries/restaurants.

Legend

New Attraction



Existing Attraction



Key Entrances into Site



Routes to Attractions

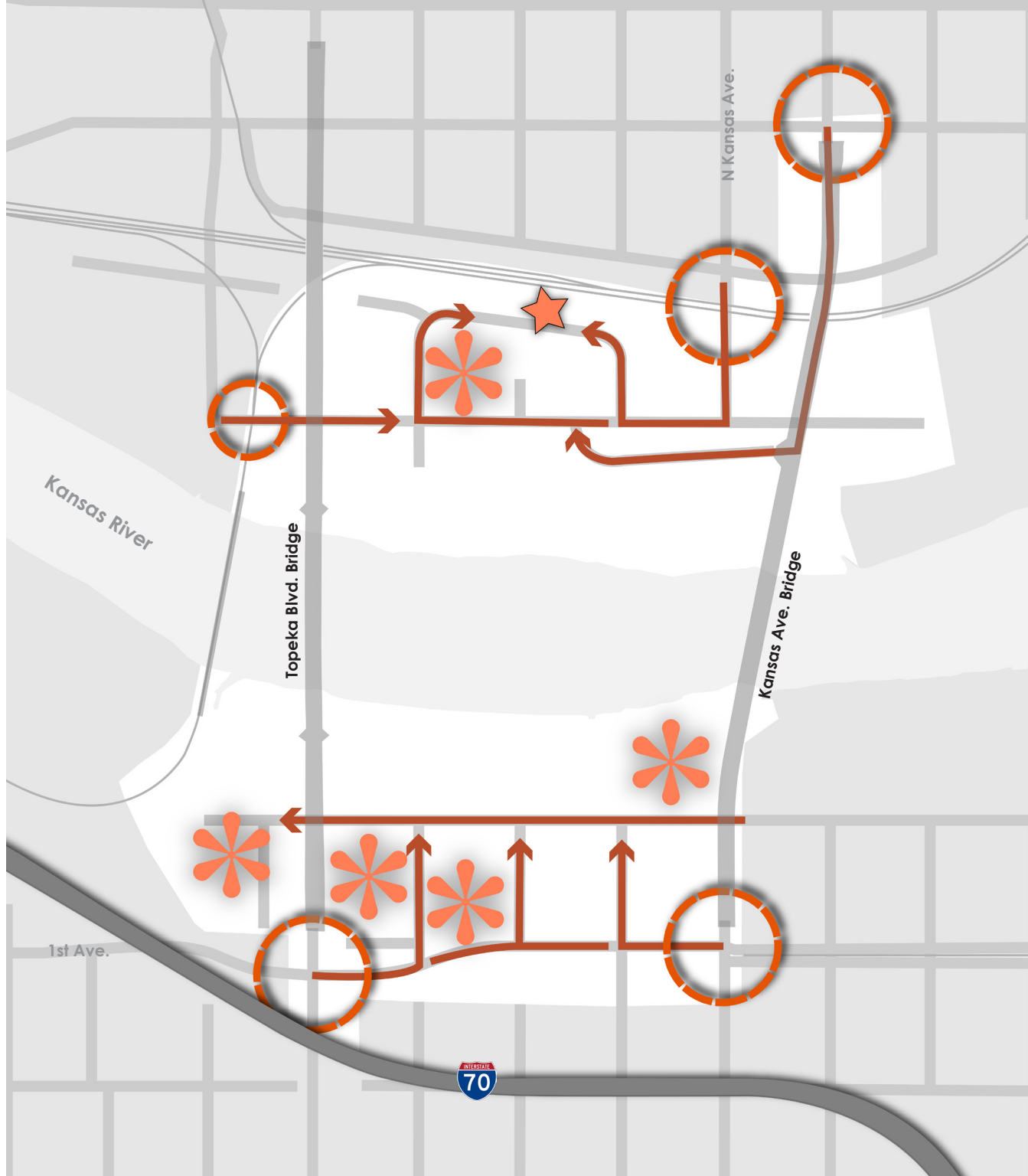
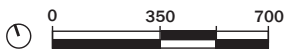


Figure 4.8.10.1 - Attractions & Routes to Attractions Map





The Crossings District encompasses the north and south banks of the Kansas River in Topeka, Kansas between the Topeka Boulevard Bridge and the Kansas Avenue Bridge. The Crossings District links Downtown Topeka in the south to the North Topeka Arts District on the opposite

bank of the river. By increasing the walkability and pedestrian connections to and across the river, the Crossings District would create an attractive regional destination for Topeka.

In the view above looking south-southwest, the Crossings District would provide the city additionally with improved physical and visual access to the Kansas River and instill a greater identity in the area.

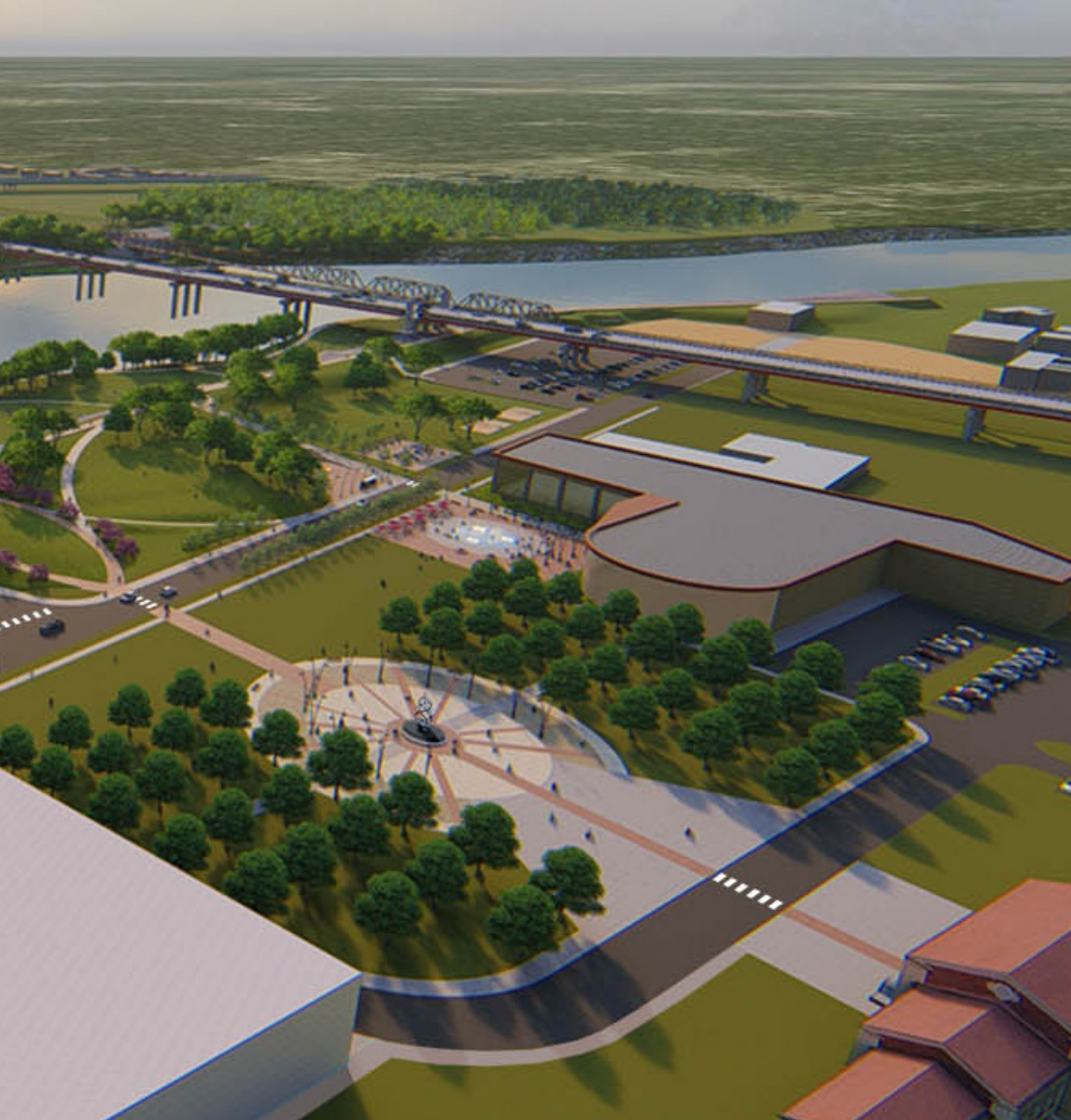


Figure 5.0.1 - Aerial view looking southwest over the Crossings District (Johnson, 2019)

5

Projective Design

This section delves into the projective design resulting from the findings. The design process is continued through exploration of the design concept. The final design refines the concept into an overall site plan, zoomed-in site plans of the differing parts of the design, sections, and perspectives from within the design.

5.1 - Projective Design Concept

The design guidelines derived from the precedent study findings, goals & initiatives from the archival research, inventory & analysis of the riverfront site, and the design strategies devised in the previous section (Chapter 4) all aided in constructing a design concept for the Topeka Riverfront.

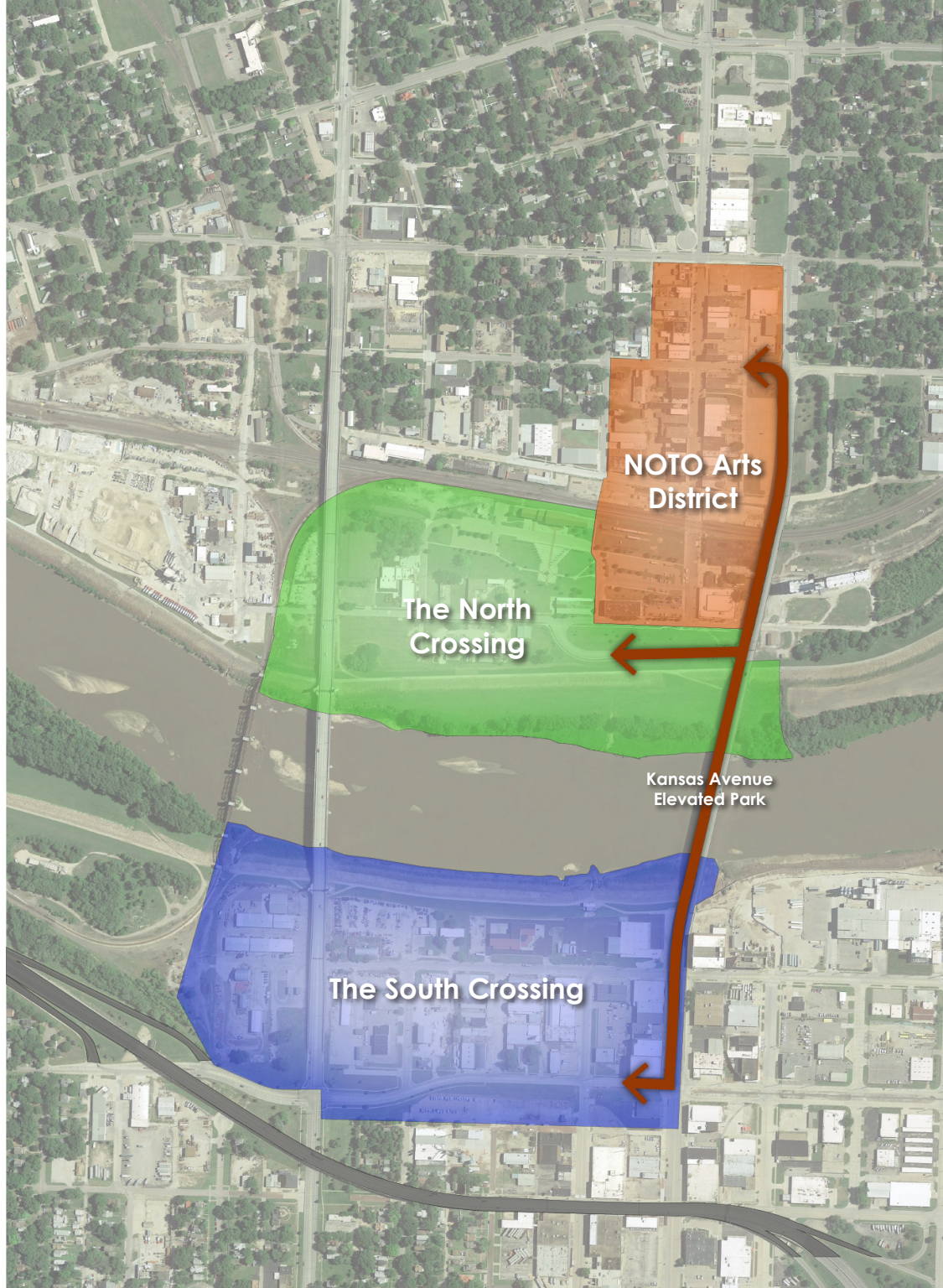
The City of Topeka designates a different waterfront district from the Topeka Downtown Core and the Historic North Topeka Districts. The concept for the Topeka Riverfront proceeds from the idea of creating a waterfront or riverfront district.

This site throughout its recent history has been the site of crossing the Kansas River. This has been done through ferries, railroads, and bridges. Being a host for transportation and trade, it is important to retain this identity of the site while improving the site to more current

functions that can improve the health, quality of life, and attraction of the City of Topeka. With this identity and purpose in mind, the city has desired for development of a waterfront or riverfront district that draws the city back to the river. This projective design will be called “The Crossings District.” The branding of such a district calls back to the riverfront’s history and identity that helped to found and develop the City of Topeka as a whole.

The concept contains three primary areas of focus: the North Crossing, the South Crossing, and the Kansas Avenue Elevated Park. The North Crossing Area functions as a family-oriented historical riverfront. The South Crossing Area acts as a civic entertainment district for the city. The Kansas Avenue Elevated Park connects and links both banks of the river as well as links the North & South Crossings and the NOTO Arts District.

Figure 5.1.1 - The Crossings District Concept Plan (Johnson, 2019)

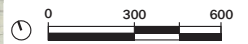


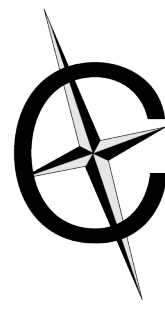
NOTO Arts
District

The North
Crossing

Kansas Avenue
Elevated Park

The South Crossing





THE CROSSINGS DISTRICT

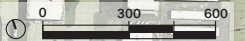
5.2 - Projective Design: The Crossings District

The North Crossing pertains to the north bank of the Kansas River stretching north to the Great Overland Station and are encompassed by the railroad tracks to under the Kansas Avenue Bridge. This area is ideal for use as a family-oriented and historical riverfront park. Along with a riverfront park, the parcels along N Kansas Avenue would become an extension of the NOTO Arts District.

The second area of focus, the South Crossing, is located on the south bank of the Kansas River and is closest to Downtown. 1st Avenue and Kansas Avenue define the bounds of this area. The South Crossing area focus on civic entertainment uses such as mixed-uses, eateries, urban residential, event or festival usage, recreational activities, community-building functions, and interaction with the river. The visual and physical accessibility to the Kansas River is emphasized.

The third area of focus is the Kansas Avenue Elevated Park. This elevated park is an expanded pedestrian and cyclist realm on the Kansas Avenue Bridge. The western half of the bridge is retrofitted to an elevated park while the eastern half of the bridge is retained for vehicular traffic across the bridge. This change for the bridge allows for a safer and more comfortable connection across the river and the railroad for pedestrians and cyclists. This elevated park allows for restful viewing of the Kansas River as well as acting as a transportation corridor for cyclists and pedestrians.

*Figure 5.2.0.1 - The Crossings District Site Plan
(Johnson, 2019)*





Topeka Blvd. Bridge

Laurent St.

N Kansas Ave.

NOTO Arts District

Norris St.

Grain Elevator

Kansas Avenue Bridge

Curtis St.

Curtis Street Flyoff

8

2

14

1

9

13

13

5

4

7

15

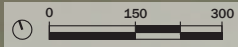
6

11

10

16

12



The North Crossing Site Plan Legend

- | | | |
|--------------------------|--------------------------------|----------------------|
| ① Great Overland Station | ⑦ Playground & Sand Volleyball | ⑬ Mixed Use Infill |
| ② Nature/History Center | ⑧ Topeka Blvd. Stair Access | ⑭ The Bosques |
| ③ Memorial Plaza | ⑨ Event Lawn | ⑮ Parking Lot |
| ④ Splash Pad | ⑩ North Landing | ⑯ Levee Trail System |
| ⑤ Amphitheater | ⑪ The Meadow Trails | |
| ⑥ North Outlook | ⑫ The Grove | |

5.2.1 - The North Crossing

The North Crossing area, located on the north bank of the Kansas River, is defined by the river on the south, by the railroad on the west and north, and by the Kansas Avenue Bridge on the east. This area creates an educational and family-oriented riverfront park space that looks back to the transportation and natural history of the place. These themes include the Pappan's Ferry, the railroad history, the Kanza Indians' settlement, and the natural landscape of Kaw Valley and the Kansas River.

The North Crossing area creates a connection to the history of this site but also by physically and visually connecting it to the rest of the city through visuals, physical connections, or functions that draw visitors to the site. This site focuses on the recreation, education, and enjoyment of the landscape of Kaw Valley. Most of the North Crossing area is devoted

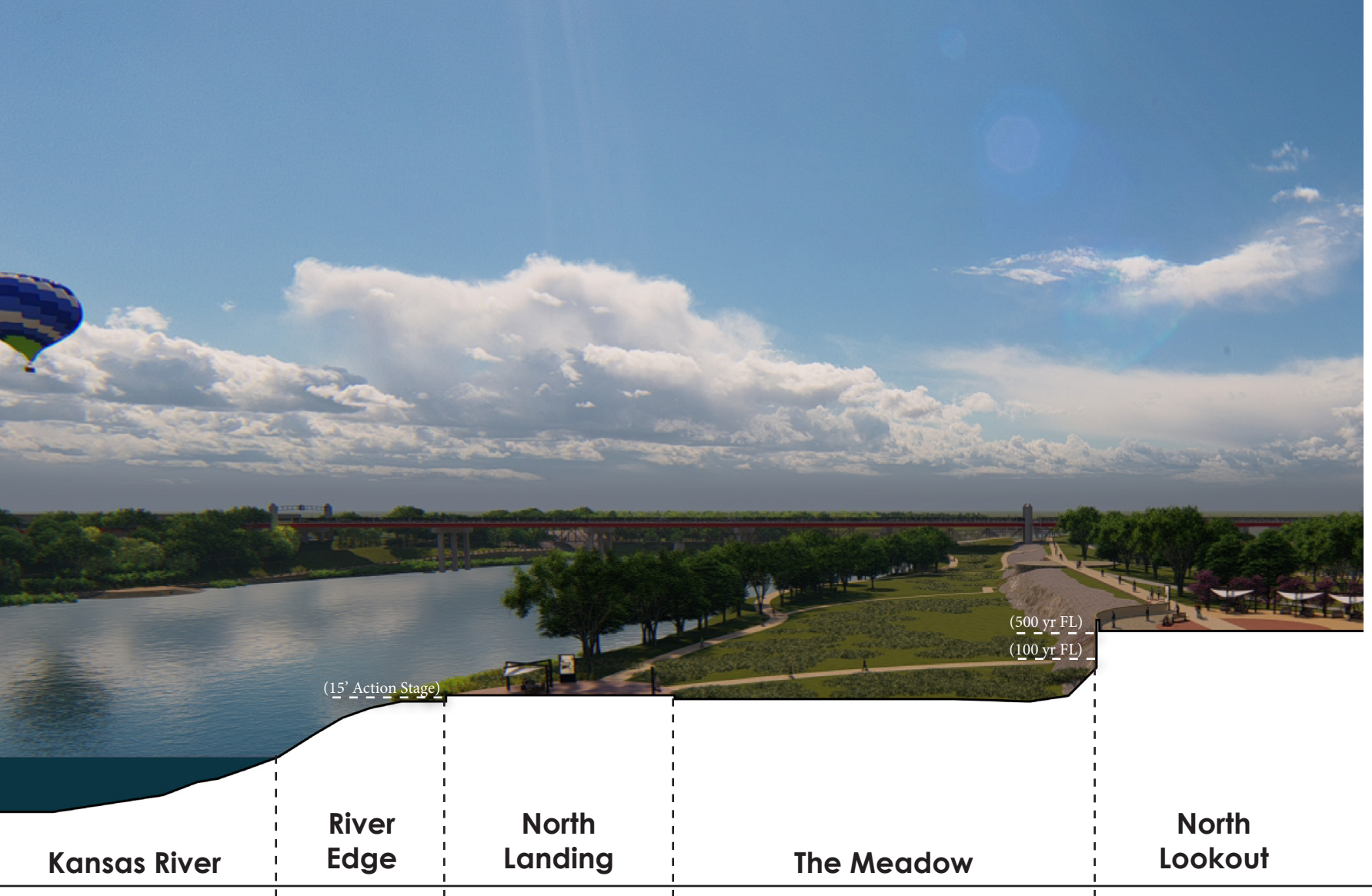
to green or park space. The area just south of the Great Overland Station is ordered to direct movement and people to the river. The WWII Memorial of Memorial Plaza accents the view toward the river and the Capitol. The History/Nature Center is essential to directing circulation toward the levee and the river. This center educates the public on the importance of the Crossings District and its importance to the City of Topeka and the State of Kansas. It also educates people on the native Kansan landscape and the processes of the Kansas River.

Outside the History/Nature Center, a plaza acts as a gathering point for people that is situated at the end of the Event Lawn. This plaza contains a splash pad that attracts families to enjoy cool water on a hot summer day. Nearby are the amphitheater, playground, volleyball courts, and open recreation space. Moving

toward the river, the north levee offers several vantage points to view the Topekan skyline. The North Outlook is opportune for this as it is located on the visual axis between the Great Overland Station and the Capitol. In the floodplain below the North Outlook, the Meadow offers a trail system that meanders through the tallgrass and river edge giving people a feel for the native landscape of Kaw Valley.

To the east of the Great Overland Station, the NOTO Arts District extends to the end of N Kansas Avenue to provide multiple activities to the south side of the railroad.

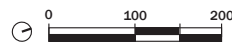
(Opposite) Figure 5.2.1.1 - The North Crossing Site Plan (Johnson, 2019)





Dike Park

Curtis Street



North Crossing Section

Moving south from Curtis Street, the north levee utilizes a Dike Park strategy, which transitions an elevation change over a long distance so that the grade change is gradual. Once atop the levee, the North Lookout presents a view of both sides of the levee opening up to the Kansas River, Capitol, and North Topeka. Below the North Lookout, a series of trails wind through the Meadow and culminate at the North Landing. Inspired by the multiple ferries existing on this riverfront in the past, the North Landing offers views of the entire South Crossing's bank, connecting the north side of the river to the south.

(Left) Figure 5.2.1.2 - North Crossing Section (Johnson, 2019)

(Above) Figure 5.2.1.3 - North Crossing Plan Section Context Map (Johnson, 2019)



Figure 5.2.1.4 - The North Landing View
(Johnson, 2019)

The North Landing

The North Landing functions as the focal point at the edge of the Meadow. The landing allows for close connection with the river while providing comfortable viewing areas to remind visitors of the history of the site by visually connecting both sides of the river as many waiting to cross the river would have had to do in the past.



Figure 5.2.1.5 - Amphitheater , Playground, & Recreational Space View (Johnson, 2019)

Amphitheater & Playground

The amphitheater seeks to gather people together to learn and build community around a fire as it is so important to the Kansas landscape. The playground, volleyball courts, and open recreation space grant the people needed active space to enjoy the riverfront and park space.



Figure 5.2.1.6 - View of Splash Pad & Nature/History Center (Johnson, 2019)

The Splash Pad

The splash pad grants the public an enjoyable place where people can gather and cool off in the hot summer sun. Being situated next to the History/ Nature Center, the splash pad adds the recreational and relaxing element of flowing water to the educational experience presented inside the building.

Event Lawn & Memorial Plaza

The Great Overland Station, Memorial Plaza, Event Lawn, and History/Nature Center creates the perfect setting for hosting large city events, festivals, and farmers' markets. In coordination with the South Crossing area, events could be hosted over the whole Crossings District.



Figure 5.2.1.7 - Aerial View of Event Lawn, Memorial Plaza, & Great Overland Station (Johnson, 2019)

Memorial Plaza

Memorial Plaza commemorates the WWII Memorial, creates a focal point, and unifies the space to the rest of the North Crossing area. The memorial offers a large open multifunctional area for events or gatherings and allows for greater visibility of the memorial.



Figure 5.2.1.8 - View of Memorial Plaza from Great Overland Station (Johnson, 2019)

The North Outlook

The North Outlook's vantage point allows views of the Meadow, Kansas River, South Crossing's bank, the Capitol, Great Overland Station, and North Topeka.



Figure 5.2.1.9 - View from North Outlook Toward Downtown (Johnson, 2019)



Kansas Avenue Bridge

Crane St.

1st St.

Topeka Blvd.

Harrison St.

Van Buren St.

Jackson St.

S Kansas Ave.

70

1st Ave.



The South Crossing Site Plan Legend

- | | | |
|-------------------------------|----------------------------|-----------------------------|
| ① Ad Astra Per Aspera Plaza | ⑦ The Terrace & Promenade | ⑬ Topeka Blvd. Stair Access |
| ② Event Plaza | ⑧ Open Green Space | ⑭ South Outlook |
| ③ Event Lawn & Redbud Bosques | ⑨ Parking Lots | ⑮ Pedestrian Mall |
| ④ Retrofitted Building | ⑩ Community Fitness Center | ⑯ Trail System |
| ⑤ The Deck | ⑪ Catalyst Building | ⑰ West Platform |
| ⑥ South Landing | ⑫ Mixed Use Infill | |

5.2.2 - The South Crossing

The South Crossing area is defined by the Kansas River on the north, Kansas Avenue & Kansas Avenue Bridge on the east, 1st Avenue on the south side, and the railroad & I-70 on-ramp on the west. This civic entertainment sub-district is a hub for events and festivals provided by the large open space of the event plaza and open green space moving toward the river. Such a center for large civic activities, this place preserves history previously forgotten about the riverfront while integrating with the ever-changing cityscape.

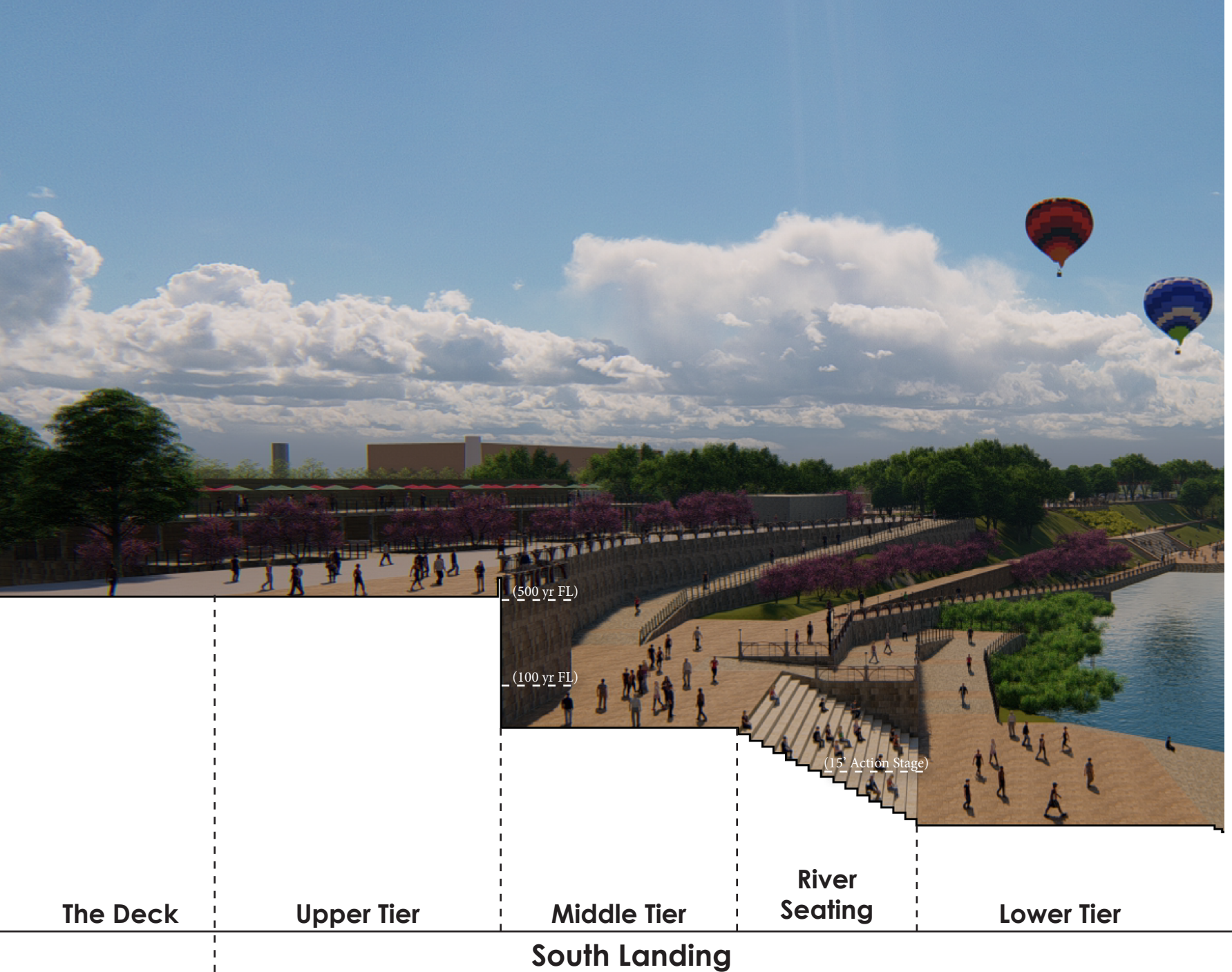
The South Crossing accents historical elements of the riverfront such as the Pappan's Ferry Landing, no longer existing City Park, and the Mill Block to name a few. The riverfront links visually to the Capitol along Harrison, Jackson, and most importantly Van Buren where it terminates at Ad Astra Per Aspera Plaza. This plaza points to the significance of the riverfront

helping to form Topeka as a city as well as a forming Topeka as the state capital. Connected to the plaza is the large event plaza and event lawn, perfect for hosting festivals or farmers' markets. The event plaza is surrounded by catalyst buildings attracting people to the site. To the east of the event lawn is a retrofitted building housing restaurants and cafes that opens to The Deck that offers an eating experience while seeing the Kansas River. The Deck sits atop the levee and looks over the South Landing, inspired by the Pappan's Ferry and a past Kansas Avenue Bridge design. The South Landing is a tiered design allowing for access to the river during different water levels. The same design strategy is present with the rest of the levee: An Upper Tier, Middle Tier, and Lower Tier. The Upper Tier is the trail atop the levee, which allows for views of both the river and the city. The Middle

Tier runs along mid-height of the levee and grants areas of shade and open turf for relaxing in the sun. The Lower Tier offers the most direct access to the water via the terraces stepping into the water. The Lower Tier also grants a walk along the river called the Promenade.

Additionally, a community fitness center is proposed on the west side of the South Crossing area for people to enjoy the site throughout the year and to create active recreation for the community.

(Opposite) Figure 5.2.2.1 - The South Crossing Site Plan (Johnson, 2019)





South Landing Section

Inspired by the Pappan's Ferry, the South Landing is a three-tiered system of terraces that accommodates the changing water levels of the Kansas River. This system allows for visual access to the river from all levels of the Landing while retaining its protection against flooding. The added effect of terracing the Landing allows for direct water access and river viewing areas for events or every day use. Additionally, other levee design alternatives using other materials like granite, gabion walls, etc. were explored. This strategy provides greater recreational space for people in a limited space along the river while retaining flood protection for fluctuating water levels. Native vegetation transitions between the artificial and the natural elements of the Kansas River, recalling the beauty of Kaw Valley that drew settlers to this area originally.

(Left) Figure 5.2.2.2 - South Landing Section (Johnson, 2019)

(Above) Figure 5.2.2.3 - South Crossing Plan Section Context Map (Johnson, 2019)





**Terraces &
Promenade**

Kansas River



South Crossing Section

Ad Astra Per Aspera Plaza raises five feet above street-level, and elevation continues to raise to the top of the levee to meet the South Outlook. The south levee has been raised to prevent the 500-year flood from flowing over into the development on the back of the levee. The top of the levee is flush with the South Outlook, which provides excellent views of the Capitol, the river, and the bank of the North Crossing. Approaching the river from the top of the levee, green slopes allow for informal access to the Middle and Lower Tiers (aka Promenade). Seating between the Middle and Lower Tiers offers closer views of the river and areas for events at the river's edge. The Terraces create opportunity for water interaction and activity such as fishing or kayaking.

(Left) Figure 5.2.2.4 - South Crossing Section (Johnson, 2019)

(Above) Figure 5.2.2.5 - South Crossing Plan Section Context Map (Johnson, 2019)



Figure 5.2.2.6 - View of South Crossing Riverfront Edge (Johnson, 2019)

South Riverfront Edge

The South Outlook, River Seating, Promenade, and Terraces provide excellent vantage points for visuals of the Kansas River as they act as a figurative staircase descending into the Kansas River.



Figure 5.2.2.7 - View of the Deck & the South Landing Looking North (Johnson, 2019)

The South Landing & Deck

The Deck and the South Landing meet atop the levee creating an open space for river viewing. Educational signage teaches visitors of the significance of the Crossings District as well as the processes rivers and their ecosystems undergo.

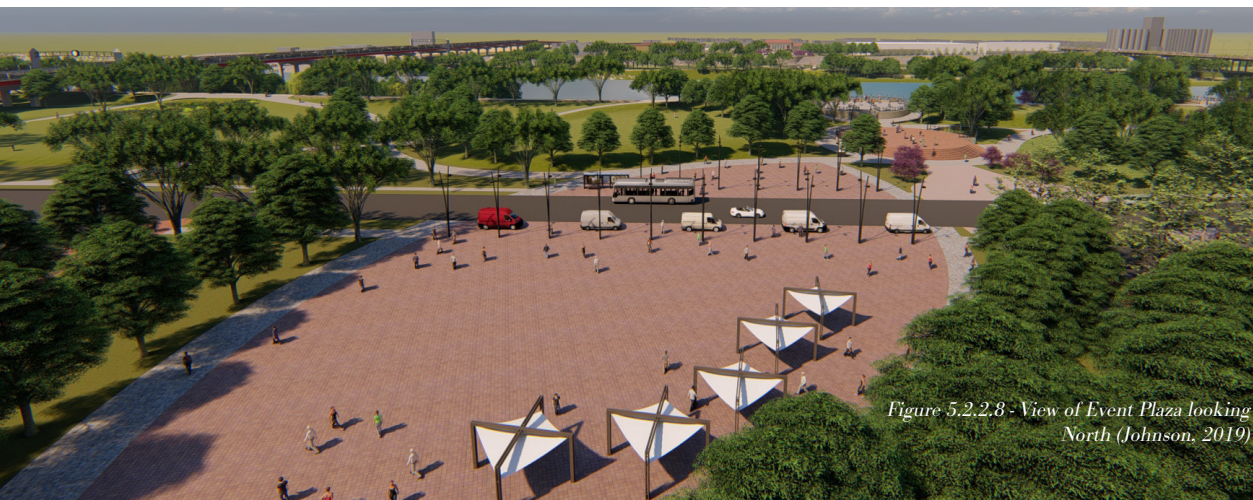


Figure 5.2.2.8 - View of Event Plaza looking North (Johnson, 2019)

The Event Plaza

The Event Plaza offers adequate open space adjacent to the riverfront. This space is ideal for festivals, events, and farmers' markets on special occasions; and for everyday use, it accommodates for food trucks, informal gatherings, and other forms of recreation.

Ad Astra Per Aspera Plaza

Ad Astra Per Aspera Plaza functions as the terminus for the view to the Capitol along Van Buren Street. The plaza acts as a gathering space that spills out to the event lawn flanked by cottonwoods and redbuds to the east. The plaza contains a ring of 33 stars surrounding a 34th star representing Kansas Statehood.



Figure 5.2.2.9 - View of Ad Astra Per Aspera Plaza looking East toward the Event Lawn & Redbud Bosques (Johnson, 2019)

View to Capitol & Event Plaza

The Event Plaza supports a more active street-life while being backed by the view to the Capitol and adjacent catalyst buildings. This further will support the plaza being central to major activities at the South Crossing.

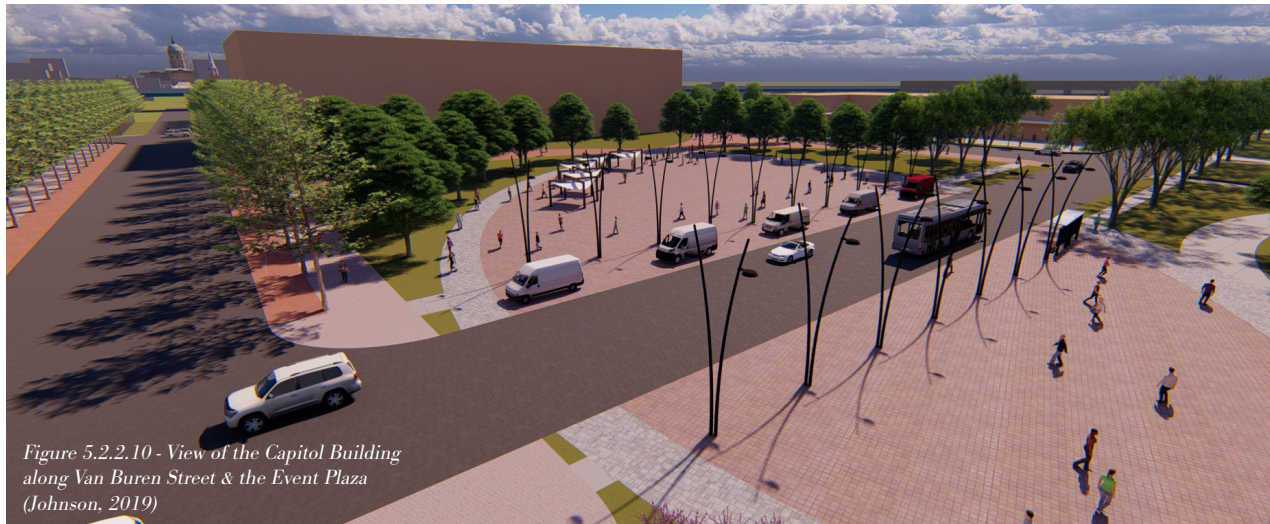


Figure 5.2.2.10 - View of the Capitol Building along Van Buren Street & the Event Plaza (Johnson, 2019)

West Platform View of River

Native vegetation is abundant, looking east from the western portion of the South Crossing Riverfront, which creates better habitat for wildlife. These wildlife habitats add to the attractiveness of the riverfront and help educate the public on river ecosystems.



Figure 5.2.2.11 - View from the West Platform looking Northeast to the North Crossing Riverfront (Johnson, 2019)



5.2.3 - Kansas Avenue Elevated Park

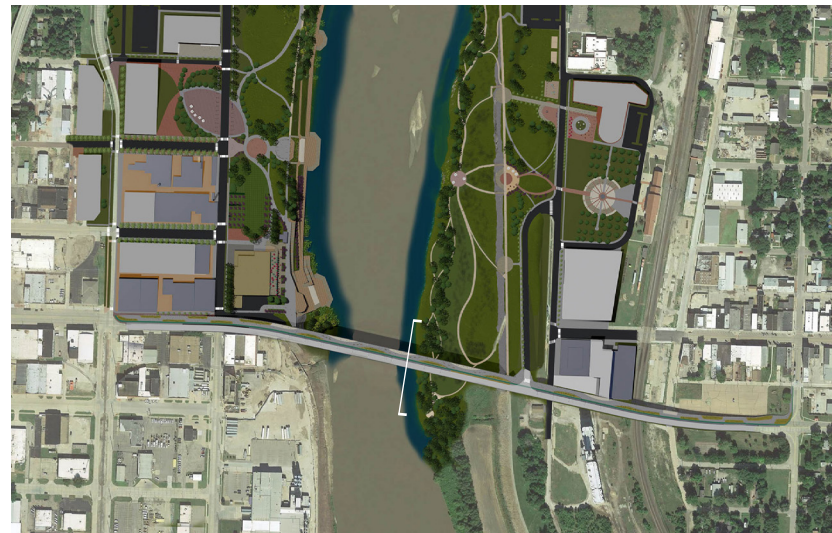
The Kansas Avenue Elevated Park reorganizes the Kansas Avenue Bridge to prioritize the pedestrian and cyclist equally to vehicular travel. It achieves this through conversion of the western half of the bridge to convey only pedestrians and cyclist traffic across the Kansas River. On the southern landing point of the bridge, the elevated park connects to a pedestrian mall linking between the levee and the front of Mill Block. As one moves up and north on the bridge, the design moves from a more orthogonal organization with planting elements to curvilinear elements. This design mimics the transition from the artificial cityscape to the natural flow

of the Kansas River. Along the middle section above the river, there are multiple seating areas and viewing platforms to add to the comfort of those traveling over the bridge. The elevated park intersects with the Curtis Street Flyoff, which provides a more convenient route between each riverfront. The elevated park continues along the northern half of the bridge and touches down at Laurent Street to arrive at the NOTO Arts District, allowing for a safe route to pass over the railroad than waiting for trains to pass at the crossing on N Kansas Avenue.

Figure 5.2.3.1 - Kansas Avenue Elevated Park Site Plan
(Johnson, 2019)







Kansas Avenue Elevated Park Section

The Elevated Park seeks to separate the pedestrian, cyclist, and vehicular traffics to provide for a safer and more comfortable link across the Kansas River. A meandering pedestrian mall provides a wide path for large groups of people crossing the bridge at once. Seating areas and viewing platforms direct attention to the river below while the east side of the pedestrian mall is buffered by planters. The planters act as vegetative buffers to define the bike lane across the bridge. This bike lane is ideal for the North Topeka Bikeway planned in the Topeka Bikeways Master Plan. The dual bridge nature of the Kansas Avenue Bridge creates a gap between both halves of the bridge. This gap including the barrier walls separate the vehicular traffic from the cyclist and pedestrian realms. Traffic is lowered to two-lane travel as the Topeka Boulevard Bridge conveys more traffic than the Kansas Avenue Bridge. This redesign of the bridge aids in connecting people between North Topeka and Downtown. This redesign also improves the walkability for both areas as desired in the Pedestrian Plan.

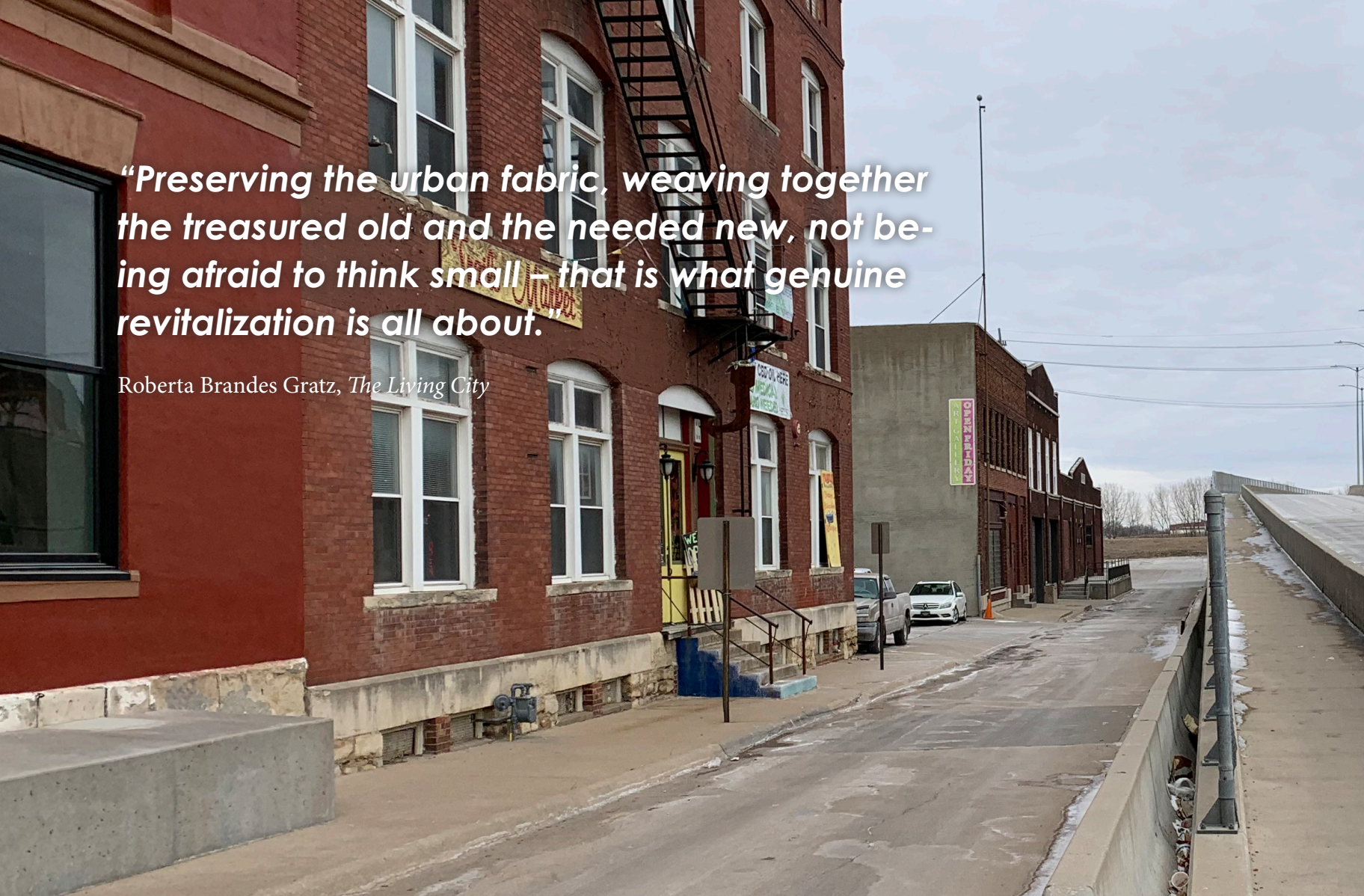
(Left) Figure 5.2.3.2 - Kansas Avenue Elevated Park Section (Johnson, 2019)

(Above) Figure 5.2.3.3 - Kansas Avenue Elevated Park Plan Section Context Map (Johnson, 2019)





Figure 5.2.3.4 - Panoramic View of the Crossings District from the Elevated Park (Johnson, 2019)



“Preserving the urban fabric, weaving together the treasured old and the needed new, not being afraid to think small – that is what genuine revitalization is all about.”

Roberta Brandes Gratz, *The Living City*

The south landing of the Kansas Avenue Bridge offers a great opportunity for improving linkage north and south along Kansas Avenue. It also links both the north and south banks of the Kansas River.

6

Conclusion

This section Summarizes the findings and results of the projective design of the Topeka Riverfront.



Figure 6.0.1 - View looking North at the Kansas Avenue Bridge South Landing (Johnson, 2019)

Project Conclusion & Significance

The Crossings District creates a long-desired urban asset for the City of Topeka by reconnecting the city with the Kansas River. With the development attention toward the Topeka Downtown and NOTO Arts District, the urban core is divided. The Crossings District presents a solution to the north-south division by linking Downtown Topeka and North Topeka through connection to the Kansas River. As a riverfront district, the Crossings District establishes a unique revolving around Topekan history, culture, and identity. The Crossings District would serve to increase the visual, physical, and psychological access to the Kansas River through the development of a civic entertainment district, a family-oriented riverfront park, extension of the NOTO Arts District, and redesign of the Kansas Avenue Bridge into an elevated park.

As mentioned earlier, riverfront

designs have proven to be effective methods of re-accessing rivers and embracing a city's identity. As May (2006) mentioned, riverfronts have the power of connecting urban dwellers to the natural processes, which are generally hidden in the urban context, to the history of the city, and to other city dwellers of different classes or backgrounds. As a landscape architecture student, it is part of the job to educate and help integrate design with the natural world to enjoy, cherish, and be good stewards of it. Landscape architecture and urban design can aid in creating successful places to reconnect cities with their rivers, build communities, and establish a place's identity.

The design of the Crossings District gives a new perspective on the Topeka Riverfront as an attractive regional destination that links the core of Topeka, not merely as a second thought, but as a

highlight of the city. The design looks to the river as the solution, not the problem, as connection to the river bridges both sides of the river together. Both sides of the river become, in a sense, one place that links Downtown Topeka with North Topeka. This research and projective design of the Crossings District argue that riverfronts strengthen city cohesiveness and connection through placemaking. Hopefully, this project can help realize the benefit that the development of a riverfront district could provide as an urban amenity for Topeka.

Project Limitations

One of the challenges that arose during the research and design of the project is the scale of the project in its complexity. In conjunction with time constraints, the scale and complexity encompassed the size of the site, the elements, river processes, flood control measures, barriers, types of connections, infrastructure, the amount of archival research, and amount of mapping needed to inform the riverfront design. Cities are dynamic in nature as are rivers, so when it comes to riverfronts, both dynamics are combined and the complexity of a site doubles. Additionally, the time devoted to designing the riverfront required more time than originally anticipated.

Another challenge that arose is availability of expertise when designing. The design touches into different fields of design such as urban design, hydrology, civil engineering, traffic

engineering, and structural engineering. So, a multidisciplinary team is necessary to efficiently and adequately design the riverfront.

A final limitation is the challenge of identifying and understanding all factors present on-site that can influence or affect the success of a riverfront design. As there is an aspect of human error when it comes to observing a site and understanding with one perspective, a landscape architect's perspective.

Future Research

The project answers the main question of “How can the Kansas Riverfront unite the NOTO District and Downtown Topeka to create a more connected and cohesive urban core?” However, the project should be able to address additional topics of the Topeka Riverfront unable to be addressed due to time constraints. One of the topics that should be addressed is the brownfields located on the riverfront. From its long history of industrial and warehouse usage, there are brownfields on both the north and south sides of the Kansas River. These brownfields can negatively affect people and the ecosystem, if left unaddressed.

Another factor to research in greater depth is the hydrologic aspects of the river and the structural resilience of flood control measures on-site. As a riverfront and the immediately surrounding development is at greater risk for flood damage, the longevity of a

riverfront design will depend heavily on this knowledge mitigating flooding. One concern is the railroad bridge to the west of the Topeka Boulevard Bridge. The railroad bridge, due to its position when constructed, cuts through the levee system and renders the levee at this elevation and up obsolete as it allows entry for flood waters ~6’ below the levee tops. There is also a concern for protection from the 500-year flood elevation as pointed out in the FEMA map.

A third topic for future research is connectivity. There is limited research on the effects or aspects of connectivity addressing the socio-economic qualities of design. Further research into this area can help improve interaction between different areas of riverfront design such as the concept of closeness of the methods for crossing large barriers in the urban environment.

One barrier that should also be addressed is the visual barrier located on the north side of I-70’s overpass through downtown Topeka. This barrier hinders the view, and thus the knowledge, of Topeka even having a riverfront area. Although there are some views of the river from I-70, more visibility would improve the attraction to the riverfront once developed.

One last barrier to address is a psychological one. The Topeka Rescue Mission’s location next to the N Kansas Avenue railroad crossing, hinders people’s desire to cross the railroad, as there is a negative connotation present. The main concern is safety. This is a very important dilemma that needs to be addressed, but, due to time constraints, was not addressed in this project.

Finally, more discussion between the planning department of Topeka, the surrounding community, local stakeholders

would benefit the design considerations for the Topeka Riverfront. Knowledge and cultural awareness held by them can instill an even deeper history, culture, and pride in the identity of the city through the personal considerations presented by the community and stakeholders. Local artists would aid in creating unique designs for the riverfront in the riverfront design itself or local art drawing the identity of Topeka. Along with this idea is using the grain elevator as a canvas for a mural or painting to attract the interest of people and create a local landmark near the riverfront.

“With awareness, you experience things; with perception, you understand them.”

Jim Burns, Connections: Ways to Discover and Realize Community Potentials



At the south end of the Crossings District site, the Capitol Building can clearly be seen along Van Buren Street. Situated along Van Buren are additional landmarks of Topeka like St. Joseph Catholic Church and the YMCA. These landmarks bring the community together and aid in

creating social connections among neighbors and citizens.



*Figure 7.0.1 - View looking south along Van Buren
Street toward the State Capitol Building
(Johnson, 2019)*

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This section lists the references and sources used to gather the research.

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Figure 5.2.3.3: Johnson, Jacob. (2019). *Kansas Avenue Elevated Park Plan Section Context Map*. Google Earth, Lumion, Adobe InDesign.

Figure 5.2.3.4: Johnson, Jacob. (2019). *Panoramic View of the Crossings District from the Elevated Park*. Lumion, Adobe Photoshop.

Figure 6.0.1: Johnson, Jacob. (2019). *View looking North at the Kansas Avenue Bridge South Landing*. Photo.

Figure 7.0.1: Johnson, Jacob. (2019). *View looking south along Van Buren Street toward the State Capitol Building*. Photo.

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Figure 8.0.1: Johnson, Jacob. (2019). *View looking west from the Kansas Avenue Bridge*. Photo.

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“Accessibility – the relative ease of movement to and from a site – is an important characteristic of any urban location.”

Douglas M. Wrenn, *Urban Waterfront Development*



The Kansas River is the heart of Kaw Valley. The river reacts to most natural phenomena like snow, rain, or shine, which in turn, changes the experience of the area. Design needs to consider this versatile atmosphere of the Kansas River to prove to be successful design.



Figure 8.0.1 - View looking west from the Kansas Avenue Bridge (Johnson, 2019)

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Appendix B: Image Library

This section lists the additional site photos and information gathered in the duration of this project.

Image Library

Site Pictures September



Site Pictures October - First Friday Art Walk



Site Pictures January (1/2)



Site Pictures January (2/2)



Site Pictures March (1/2)



Site Pictures March (2/2)





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