BURLINGTON CORRIDOR COMPLETE STREET PLAN

CONFLUENCE

NORTH KANSAS CITY
Virtually Urban. Supremely Suburban.

APRIL 27, 2016

FOREWORD

The Burlington Corridor has faithfully served the City of North Kansas City and the Northland area as an important vehicular transportation connection over the Missouri River into Downtown Kansas City. The range of land uses adjacent to and served by this corridor are beginning to transform from primarily industrial to include a mixture of commercial, office, industrial, and service-related businesses that are adapting to meet the evolving needs of the surrounding community. This project offers the City of North Kansas City, Missouri an exciting opportunity to establish a strong and unifying vision for transforming the Burlington/Route 9 corridor into a vibrant and sustainable "complete street" served by all modes of transportation. With proper care and attention, this corridor can provide a welcoming gateway for North Kansas City to continue attracting high-quality redevelopment and revitalization opportunities.

This plan builds on prior recommendations of the Burlington Corridor Study, the Burlington Corridor Overlay District, and recent infrastructure improvements by the Missouri Department of Transportation (MoDOT). The recommendations contained herein are based on a foundation of community engagement efforts – focused on involving local business/property owners and citizens in shaping the future vision for this corridor.

This project was supported through a grant from the Mid-America Regional Council's (MARC) Planning Sustainable Places Initiative - a regional program funded by the state-allocated Surface Transportation Program (Livable Communities Pilot) and intended to assist communities to explore transportation network improvements that enhance the quality of life and support long-term community growth.

ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

CHAPTER ONE: **INTRODUCTION**

"The Secret of Getting Ahead is Getting Started"
-Mark Twain

PROJECT OVERVIEW

This project reflects a significant opportunity to transform the visual appearance and functional characteristics of the existing Burlington Corridor in North Kansas City. It is intended to establish a strong and unifying vision to guide its revitalization. The approximately 2-mile long study area includes the existing right-of-way width for this corridor, which is also part of MoDOT's 9 Highway corridor connecting with other Northland destinations.

This corridor connects Downtown Kansas City over the Heart of America Bridge and through the City of North Kansas City. At the southern end, the Heart of America Bridge contains the only dedicated bicycle/pedestrian crossing over the Missouri River – which represents a significant opportunity to extend and strengthen these connections further into Kansas City's Northland area. This corridor also provides direct access to Downtown North Kansas City, located along Armour Road just east of its intersection with Burlington Street.

At the northern end, Burlington splits into two different corridors as it nears the Children's Fountain – which is located just south of 32nd Avenue. To the west is a continuation of the 9 Highway corridor connecting to the Cities of Riverside and Parkville and to more northern portions of Kansas City, Missouri. To the east the corridor transitions into North Oak Trafficway and extends further north connecting to other northern portions of Kansas City, Missouri and the City of Gladstone.

HISTORY

In the early 1900's, and prior to being developed into what we now refer to as North Kansas City, this area of approximately 3,500 acres was only accessible by ferry or by traveling over the Hannibal Bridge from the City of Kansas City, Missouri located just south of the Missouri River. Earlier attempts to develop this land were unsuccessful, including those of Willard Winner – a visionary speculator who began one of the largest real estate development expansion in Clay County.

Winner attempted to construct a new bridge over the Missouri River in 1887 as an attempt to develop the area into a large scale industrial district that could also benefit from improved railroad access that offered a quicker route through the area without travelling over numerous vehicular streets. He was able to raise funds to construct nine piers for this bridge in 1889-1890, but was not able to complete the project. His property and interests were obtained in 1902 by the Armour Swift Burlington (ASB) syndicate, which was forged between the Armour and Swift meat packing industries and the Burlington Railway. All but two of these piers eventually formed the foundation for the ASB Bridge, constructed in 1911 by the North Kansas City Development Company to carry both trains and vehicular traffic over the river. This same company was also responsible for working with the Army Corps of Engineers to construct a levee on the north side of the Missouri River to protect this land for future development.

Once the ASB Bridge was completed, the Kansas City, Clay County, and St. Joseph Interurban Railway was extended in 1913 along what is now known as the Burlington Corridor – connecting this area all the way north to St. Joseph, Missouri. This corridor was originally utilized only for rail travel, and included stops in North Kansas City at Liberty Road (what is today known as Armour Road) and other locations to the north. The corridor continued to expand to include vehicular traffic to serve the needs of this growing community, and eventually the Interurban Railway was discontinued.

HIGHWAY BRIDGE CONNECTION

The Heart of America Bridge is now one of three primary vehicular connections into Downtown Kansas City from the Northland. As a part of this existing network of highways, providing efficient and effective vehicular traffic flow needs to be carefully considered as part of any adjustments to the ultimate configuration of the corridor. Any adjustments can create varying degrees of impact on the effectiveness of each of these three bridge crossings to adequately handle anticipated travel demand.

MoDOT and the City of Kansas City, Missouri, in conjunction with other municipalities and agencies, are preparing to embark on a much broader study concerning the adjacent 169 Highway corridor to the west that includes options for repairing / replacing the Broadway Bridge and potentially reconfiguring the North Loop in Downtown Kansas City, Missouri. This upcoming study effort may also influence the ultimate traffic flow needs for each of these three Missouri River bridge crossings, and should also take into consideration the results of this study effort and the community's vision for enhancing and revitalizing the Burlington Corridor as part of this overall network.

FIGURE 1.1 HISTORIC PHOTO OF BURILNGTON CORRIDOR

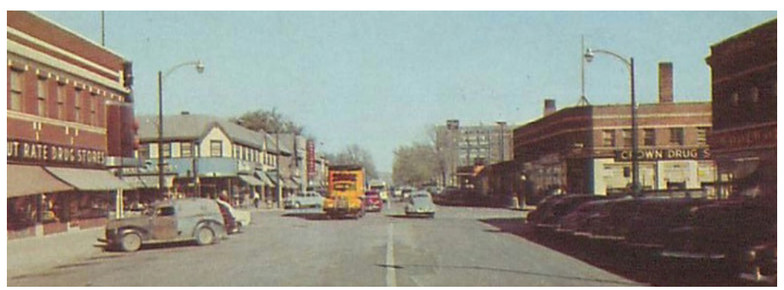


FIGURE 1.2 HISTORIC PHOTO OF ARMOUR ROAD

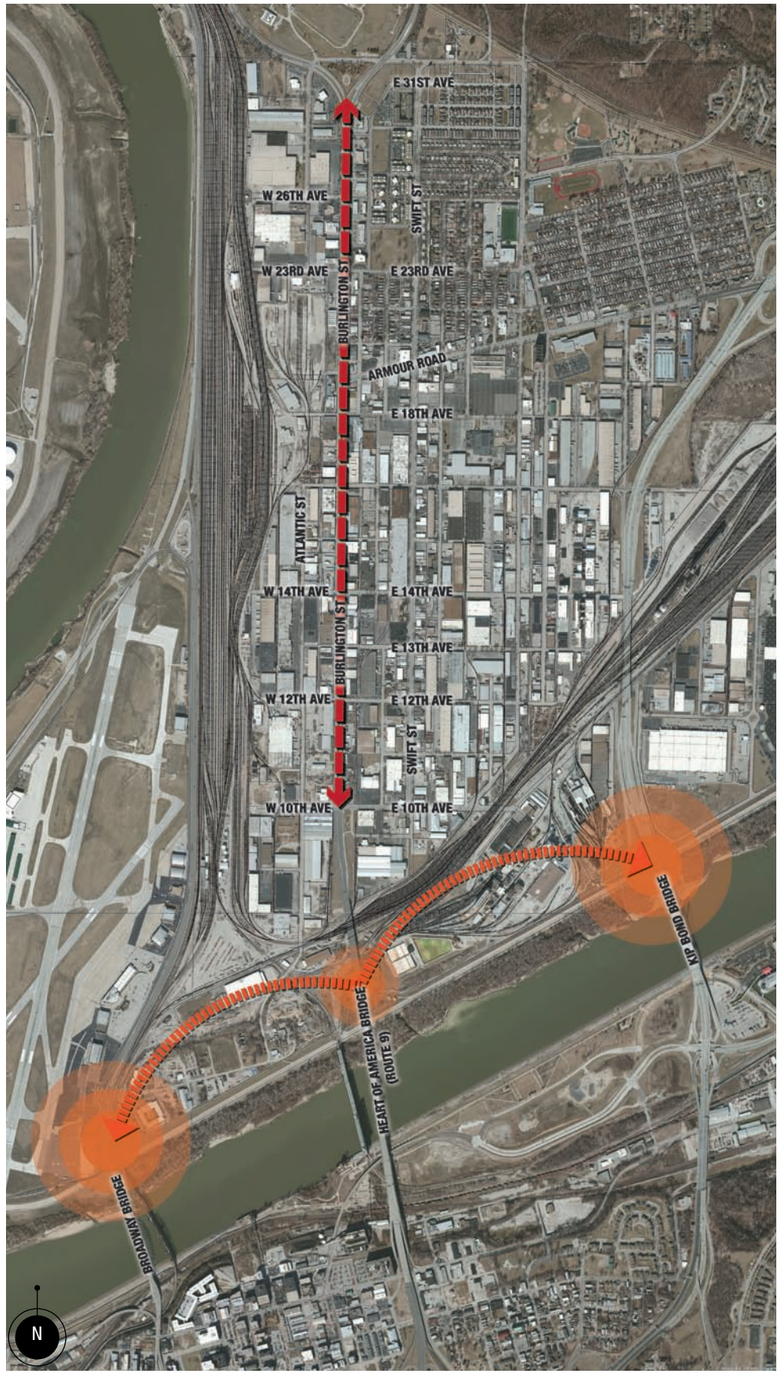


FIGURE 1.3 HIGHWAY CONNECTIONS DIAGRAM

ALIGNING PLANNING EFFORTS

This Complete Street Plan seeks to balance North Kansas City's community desire to attract and support a broad range of land uses and transit connectivity along this corridor in the future. This corridor bisects a linear swath of land on the west side of Burlington, which in many ways appears isolated from the range of activities occurring on the west side of the corridor. Opportunities to improve connectivity east-west across the corridor need to be explored, including slowing traffic down and improving sight lines and visual access to both sides of the corridor. Through coordinating and aligning the community and transportation planning efforts for all of these projects in the near future, it is the planning team's goal to provide an enhanced visual appearance and physical environment along the Burlington Corridor – allowing it to achieve its potential as a vital transportation linkage for MoDOT and as a welcoming gateway for North Kansas City and the surrounding community.

A CATALYST FOR REDEVELOPMENT

This corridor has historically served dual roles - connecting "THROUGH" the study area while also connecting people "TO" North Kansas City's Downtown area, which serves as the community's heart. In many ways, this dual role benefited the City in its formative years to establish a strong industrial base with close proximity to Kansas City's Downtown. Over time, newer industrial districts have been built throughout the metropolitan area, providing much larger modern facilities. Some of the corridor's existing buildings are showing their age, while others have recently been converted into creative office and commercial ventures. This emerging trend is on the cusp of establishing a critical mass – especially east along 18th Avenue where a cluster of eateries, a brew pub, and a distillery have been located. Revitalizing this corridor can become a catalyst for bolstering redevelopment and revitalization efforts in this area.

STUDY OUTCOMES - A COMPLETE STREET APPROACH

While this corridor links to other Northland areas, it also has to serve North Kansas City's business and resident needs and desires for a bright future. This includes integrating bicycle and pedestrian improvements and opportunities for expanded transit. Through creating a more welcoming experience while also increasing the range of transportation options available, this area can become even more attractive for market-rate development and revitalization efforts. This corridor can play a significant role in improving the quality of life for those that live and work in North Kansas City, and this plan is intended to guide the community's efforts to that end.

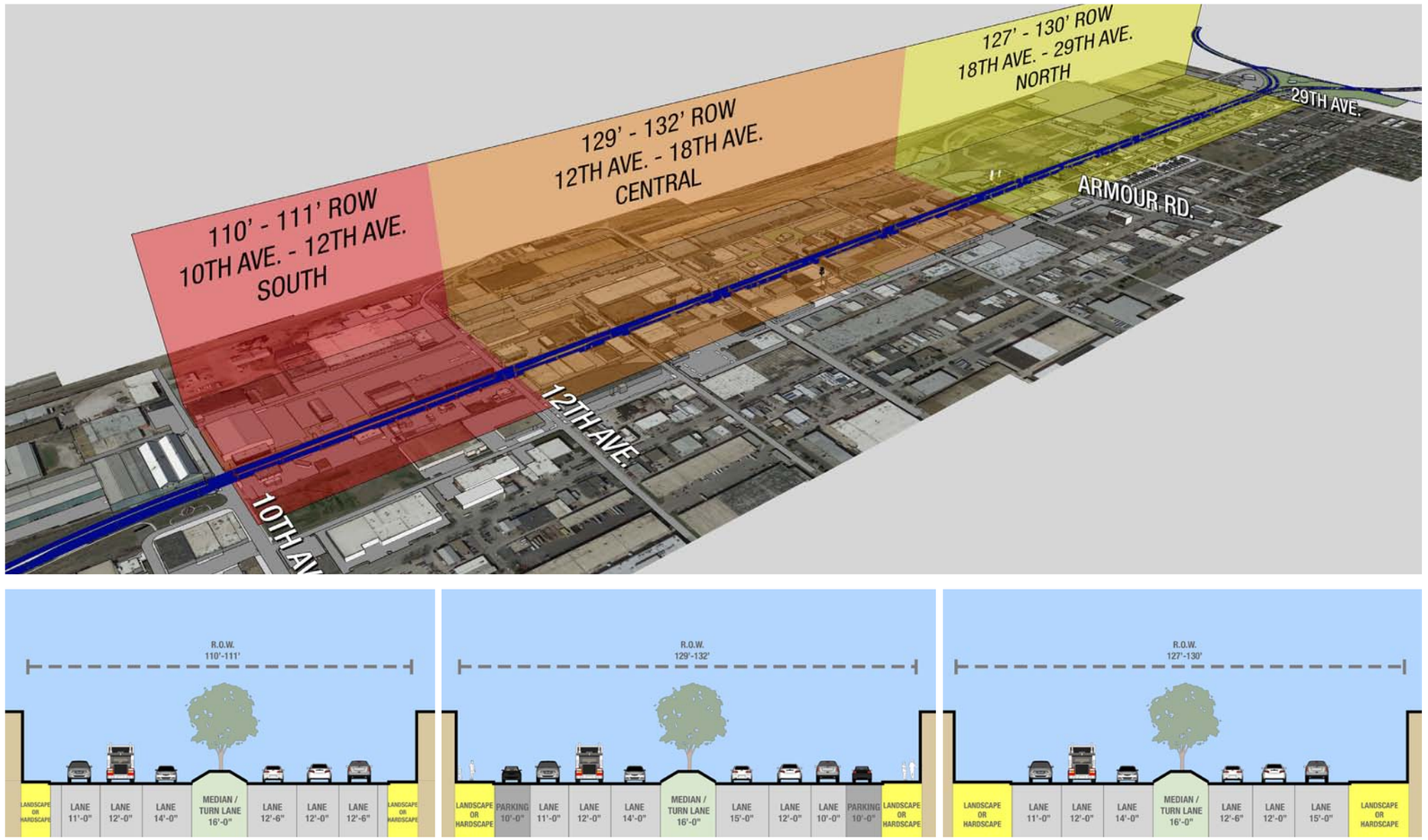


FIGURE 1.4 EXISTING RIGHT-OF-WAY SECTIONS ALONG THE BURLINGTON CORRIDOR

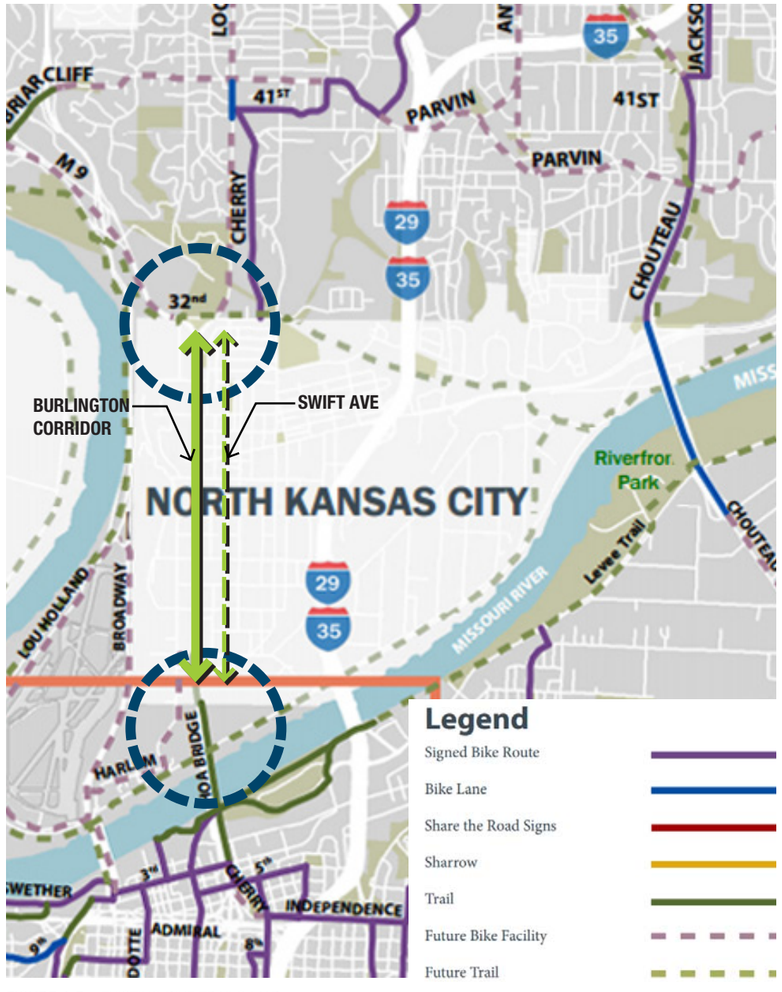


FIGURE 1.5 EXISTING BIKE TRAILS MAP

EXISTING CONDITIONS

This corridor is a relatively fast moving, vehicular-oriented street serving as a major connection into Downtown Kansas City, Missouri. The corridor's appearance is tired, including the bermed/landscaped medians that were built in the late 1980's. These existing tree and shrub plantings are nearing the end of their useful life, with several that have died and not been replaced over time.

The range of uses and the corridor's relationships with adjacent buildings, parking lots, and sidewalks also varies considerably as one travels from south to north along the corridor. A few observations for each of three segments along the corridor are highlighted below:

SOUTHERN SEGMENT

This segment is the narrowest in the corridor (110' in width), and there are no sidewalks or on-street parking located from 10th to 12th Avenue. Several smaller buildings surrounded by parking and access drives are located on the east side of the corridor. The west side of this segment contains primarily commercial/industrial uses. This segment provides some unique challenges due to the limited right-of-way width available.

FIGURE 1.7 BURLINGTON BETWEEN 10TH AVE AND 12TH AVE LOOKING SOUTH

FIGURE 1.8 BURLINGTON BETWEEN 13TH AVE AND 14TH AVE LOOKING SOUTH

FIGURE 1.6 EXISTING SITE PLAN

CENTRAL SEGMENT

The central segment runs from 12th Avenue to 26th Avenue, with a right-of-way width ranging from 129'-132' wide. Most of this portion of the corridor includes on-street parallel parking and sidewalks on both sides, and a mixture of larger and smaller commercial/industrial buildings placed directly adjacent to the existing right-of-way to form a strong connection with the street. A few of these properties have loading docks facing Burlington, and many properties rely on direct vehicular access to the corridor. There are also several properties available for redevelopment through this stretch. There have been several recent building revitalization and construction projects east of the corridor along 18th Avenue, which is creating momentum for additional redevelopment in this particular area. This segment contains the Armour Road/Downtown North Kansas City connection as well as residential areas approximately one block east of the corridor north of Downtown.

NORTHERN SEGMENT

This encompasses the area from 26th Avenue north to the Children's Fountain, where the corridor splits leading into either 9 Highway or North Oak Trafficway. This segment does not include on-street parking on either side of the roadway and has limited sidewalks. It contains primarily commercial buildings generally placed in a more suburban pattern located further away from the street and surrounded by areas of vehicular parking and circulation. There are several residential areas to the east located just one block away adjacent to the northern portions of this corridor.

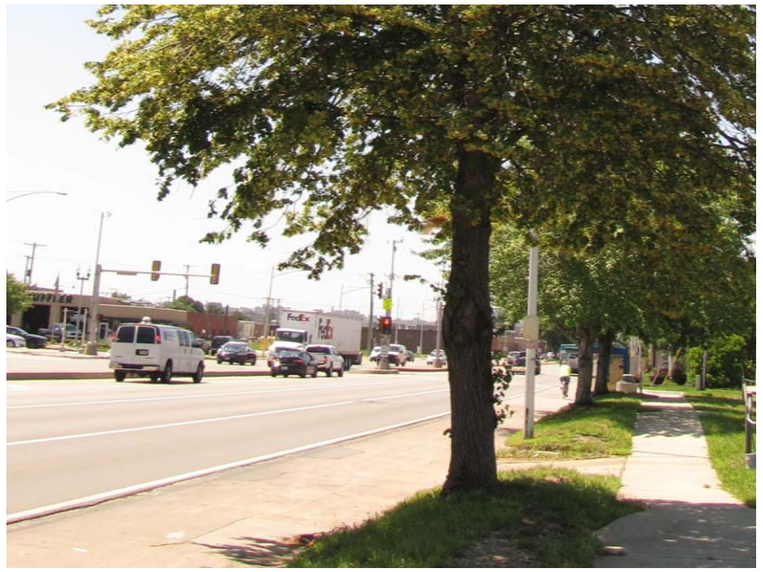


FIGURE 1.9 BURLINGTON NEAR ARMOUR ROAD LOOKING SOUTH

FIGURE 1.10 BURLINGTON BETWEEN 26TH AVE LOOKING SOUTH

UTILITIES

As part of a previous corridor transit study, utilities that may have facilities located in or along the Burlington Corridor were identified. Additional coordination and analysis to determine location of existing facilities in relation to proposed corridor improvements will be key in maintaining project schedule and budget. In an effort to identify utilities and mitigate these steps early in the design phase of the project, potential utility providers are listed below.

- MGE
- Veolia Energy
- KCP&L
- NKC – Signals, Lighting, Water Mains, Storm & Sanitary Sewers
- Zayo
- Time Warner Cable
- Surewest
- T.W. Telecom
- Verizon/MCI/Brooks
- LiNKCity
- Comcast
- Level 3
- Century Link (Lightcore, Qwest)
- AT&T
- AboveNet

BICYCLE/PEDESTRIAN CONNECTIVITY

The existing Heart of America Bridge provides the metropolitan area's only designated pedestrian/bicycle crossing over the Missouri River. This bike route currently continues further north along Swift Avenue through North Kansas City, which is a few blocks to the east of the Burlington Corridor. As a result of this project, the City is starting the process to coordinate with MARC to officially change the designated north-south bicycle facility from Swift Avenue to the Burlington Corridor, which will provide significant efficiency benefits for extending connections further north along the North Oak Corridor and further west into Riverside and Parkville along the 9 Highway Corridor.

STORMWATER

The corridor's existing storm water drainage consists of a closed system using curb & gutter with grated inlets to convey the storm water. The entire stretch of Burlington from 10th Avenue to just north of 29th Avenue (past Ruby Tuesday's) has recently been upgraded to curb & gutter with grate inlets on both the outside and inside of the north and southbound travelways as the means of catching and conveying the surface storm water. The use of grate inlets along the outside and inside of the travelways help maximize the width of the travelway while allowing vehicles to encroach on these inlets without causing damage and still conveying the amount of water needed to keep the roadway traversable during significant rain events.

The stretch of Burlington Street near 29th Avenue north to 32nd Avenue has an open ditch type drainage system, and will need to be upgraded with storm sewers and curb & gutter to accommodate new bicycle and pedestrian improvements. A quick review of the capacity of the corridor's existing pipe system using the Manning equation revealed that most of the pipes are potentially undersized, and a more detailed analysis of the constricting downstream outlets will need to be performed during the next stage of streetscape design to determine potential for any system upgrade investments.

TRANSIT

There are a few existing bus lines that serve this area along the Burlington corridor, including routes 142 (North Oak), 132 (Gracemor), and 135 (Winnwood/69 Highway). MoDOT recently made some additional pedestrian accessibility enhancements at several key intersections to improve cross-walk and accessibility in the corridor. The role of transit along the corridor will continue to grow in importance as the City of North Kansas City and other areas of the Northland continue to experience higher demand for new residential redevelopment and revitalization opportunities.

With the addition of new streetcar service in Downtown Kansas City, and the provision of additional bus service and mobility enhancements throughout the transit system, the relationship of dense redevelopment and available transit service is becoming stronger. This corridor provides significant opportunities to expand this trend into the Northland area.

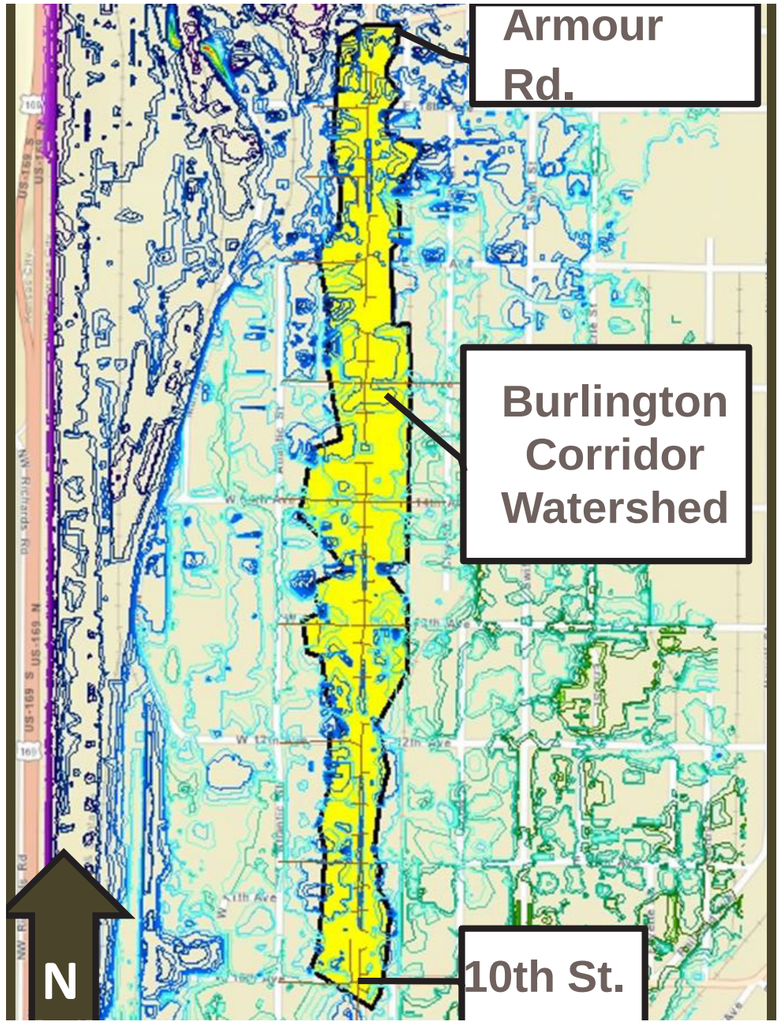
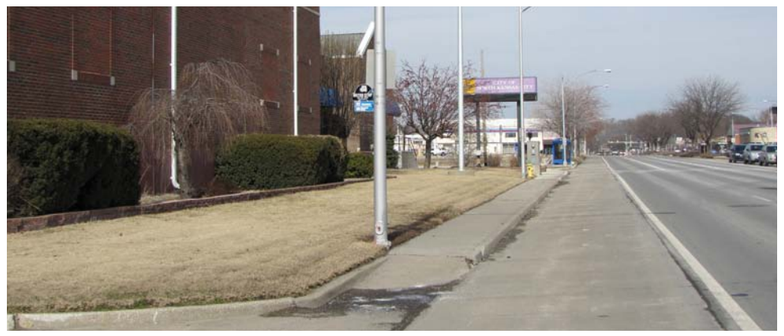


FIGURE 1.11 EXISTING CONDITIONS ALONG THE BURLINGTON CORRIDOR



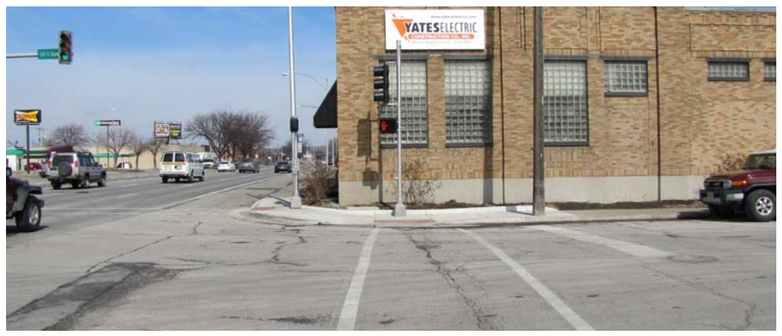


FIGURE 1.12 EXISTING CONDITIONS ALONG THE BURLINGTON CORRIDOR

LIGHTING

There is continuous street lighting throughout the study area from south of 10th Avenue through 32nd Avenue. A majority of these poles are spaced directly across from each other throughout the corridor, with the exception of the area south of 10th Avenue, where they transition to a staggered spacing. Typical spacing ranges from 130'-170' depending on where side streets, driveways, etc. are located. The light poles generally are located directly behind the back of curb. Other instances of light pole locations include between the curb and sidewalk, behind the sidewalk, or within the sidewalk if additional space is not available. There are no existing pedestrian-scaled light fixtures in use along the Burlington Corridor..

TRAFFIC SIGNALS

There are existing signals along the Burlington Corridor at the intersections of 10th Avenue, 12th Avenue, 14th Avenue, 16th Avenue, Armour Rd., 23rd Avenue, 26th Avenue, and 32nd Avenue intersections. Due to the nature of commuting traffic using this corridor each workday, these signals are timed and coordinated by MARC's Operation Green Light program (OGL). OGL is intended for areas that have high vehicular volumes and multiple signals, and they are operated together as a system to keep vehicles efficiently moving through the corridor to minimize delays experienced at the signals. Burlington has three lanes in each of the northbound and southbound directions, requiring any left turn movements onto east/west side streets to be protected movements only (green arrows). Mast arm signal poles are located in the median noses at most every intersection, with the exception of the 26th Avenue and 32nd Avenue intersections. There is a limited amount of developable land west of Burlington with relatively low traffic volumes. The side streets in general have one phase to make their through or permissive left turn movements at a green light, which allows more time for the Burlington Corridor's through phase. The side street signal heads are mounted on pedestal poles at each of the corners. The Burlington/North Oak Trafficway "split" contains a two-phase signal where southbound and northbound Burlington (MO-9) proceeding in one phase, and southbound North Oak Trafficway proceeding into the Burlington Corridor in the next. Northbound Burlington to North Oak Trafficway is a free movement (not signalized).

CROSSWALKS

At each of the signalized intersections there are generally at least one east-west 6' wide crosswalk across Burlington, and at least one north-south 6' wide crosswalk across the side streets – with pedestrian signal heads and push buttons for each crossing. At 10th Avenue, there are east-west crossings across Burlington at the north and south intersection approaches, and a north-south crossing at the west approach across 10th Avenue. The 12th, 14th, and 16th Avenue intersections have crossings at the east, north and west approaches. Armour Road is a 3-legged intersection with a north and east crossing. There is no sidewalk at the southwest corner of 23rd Avenue, leaving only a north and east crossing connection. There is a full crossing at 26th Avenue. There is no sidewalk or crossings at the Burlington/North Oak Trafficway intersection, and there is only a crossing on the south approach at the 32nd Avenue intersection.

At the unsignalized intersections with smaller side streets, there are no Burlington crossings. However, there are striped crosswalks across the side streets where sidewalks exist on each side (13th and 15th Avenues). Sidewalks at one or both of the western quadrants of the 18th and 21st Avenue intersections do not exist, and the crosswalk areas are only striped along the east approach.

TRAFFIC

The corridor currently carries an average of approximately 30,000 vehicles per day (ADT), of which about 10% is comprised of heavy vehicles. It is a divided urban arterial with three lanes in each direction, and a raised 16-foot wide median which shadows left-turn lanes at each cross-road intersection. There is a separate on-street parking lane on each side of the street north of the 12th Avenue intersection. Signalized intersections generally include full vehicle and pedestrian actuation.

At the south end of the study area beyond the 10th Avenue intersection, Burlington extends to the Heart of America Bridge over the Missouri River. In the southbound direction, the bridge continues to carry three lanes of traffic into Downtown Kansas City's central business district.

In the northbound direction, the bridge carries only two lanes, with the outside shoulder lane converted to a barrier-protected, non-motorized trail. Between the north end of the bridge and 10th Avenue, the street width transitions to three lanes in the northbound direction, and the full median width is developed.

Under the most recently available 2014 intersection turning movement counts, all of the intersections are projected to function at Level of Service (LOS) B or better in the morning peak period. During the evening peak, the 10th Avenue and Armour Road intersection operates at LOS C, with the other intersections operating at B or better. Under future 2040 traffic, based on growth rates projected by the MARC regional travel demand model, the intersections operate at LOS C or better in the morning peak hour. However, in the evening peak, the 10th Avenue intersection is projected to operate at LOS F, and the Armour Road intersection is projected at LOS D. All of the other intersections are projected to operate at LOS B or better in the evening peak.

By observation, it was noted that during peak periods, all three lanes at the northbound approach to the 10th Avenue intersection were equally utilized when traffic approached the intersection during the red phase—effectively using most of the lane capacity at the beginning of the green phase. During the latter portions of the green phase, once a free flow condition was attained, it was noted that the majority of the northbound through traffic remained in the interior two lanes across the intersection. Based on this observation, the 10th Avenue intersection capacity analysis was performed under the presumption that all three through lanes were used equally effectively.

FIGURE 1.13 EXISTING CONDITIONS ALONG THE BURLINGTON CORRIDOR

CHAPTER TWO: **PARTNERS AND PROCESS**

"Alone We are Smart. Together We are Brilliant."
-Steven Anderson, Educator

ADVISORY COMMITTEE AND COMMUNITY

The City appointed several existing property owners, business owners, and citizens to participate as an Advisory Committee to provide guidance to the planning team during the study. A tour of other significant streetscape projects was held at the beginning of the project, and information was provided to this committee at key stages of the planning process to allow informed decisions to be made in shaping the recommendations contained herein.

The following meetings were conducted during this process:

Project Kick-Off Meeting + Bus Tour | September 3, 2015

Advisory Committee #1 | October 6, 2015

Public Meeting #1 | October 7, 2015

Advisory Committee #2 | November 12, 2015

Public Meeting #2 | November 18, 2015

Advisory Committee #3 | January 29, 2016

GOALS

Through this process, a series of three primary goals were created by the Advisory Committee to guide the transformation of this corridor, including goals to improve its physical appearance, to support redevelopment efforts, and to integrate a “complete street” design approach that integrates all modes of transportation.

APPEARANCE

Transform the corridor’s physical appearance – embracing the existing industrial character to strengthen NKC’s authentic sense of place

REDEVELOPMENT

Support future private-sector revitalization and redevelopment activities throughout the corridor through sustainable infrastructure investment and beautification

COMPLETE STREET

Integrate all modes of transportation into the future vision for the corridor – including vehicles, transit, pedestrians, and bicyclists.

FIGURE 2.1 ADVISORY COMMITTEE AND PUBLIC ENGAGMENT EXERCISES

QUESTIONNAIRE

QUESTIONS:

1. List five words that describe the corridor today:

2. List five words that describe how you'd like the corridor to be in the future:

3. One thing that makes me excited about this project is...

4. What types of uses, activities or features are missing along the corridor?

5. If you left North Kansas City for 10 years and then returned, what portions of the Burlington Corridor would you hope remained unchanged?

6. What portions would you hope have been improved?

7. On the sliding scale shown below, please fill in the appropriate circle that best suits what you would like the future orientation of the Burlington corridor to look like.

Auto Oriented ——— Bike/Ped Oriented

HEADLINE EXERCISE

FIGURE 2.2 ADVISORY COMMITTEE AND PUBLIC ENGAGMENT EXERCISES

FIGURE 2.3 QUESTION 1: CURRENT CORRIDOR CHARACTERISTICS

FIGURE 2.4 QUESTION 2: FUTURE CORRIDOR CHARACTERISTICS

FIGURE 2.5 ADVISORY COMMITTEE AND PUBLIC ENGAGMENT EXERCISES

PLANNING PROCESS + INPUT

The Advisory Committee, residents, property, and business owners in the City of North Kansas City were involved at key stages of the planning process. This included both in-person meetings and presentation, along with online questionnaires available through City's website and social media outlets for those unable to attend the meetings.

A series of questions were posed to the Advisory Committee and the Community to gauge their opinions about existing conditions and their initial thoughts for transforming the corridor. The planning team engaged participants in hands-on activities and exercises designed to gather more in-depth information. Utilizing the input received at each stage of the process, the team shaped the project's goals and final plan recommendations to match the community's future vision for the corridor. When compared with each other, the input and direction received from both the Advisory Committee and the Community were almost identical.

QUESTIONNAIRE

An initial questionnaire containing seven questions was utilized at the outset of the project to gather input from both the Advisory Committee and the Community. When asked to describe the corridor as it appears today, comments included words like ugly, industrial, fast, busy, and unappealing (see Figure 2.3). These and other responses were assembled to form a "word cloud" highlighting responses that were received most with larger lettering. When asked to describe how they'd like the corridor to look in the future, words such as welcoming, bike-friendly, appealing, green, safe, slower, and destination were given. The results of these exercises provided an initial glimpse into the Community's desire for transforming the appearance of this corridor.

Additional exercises were undertaken to understand their opinions and preferences on a variety of topics related to revitalizing the corridor.

FIGURE 2.6 ADVISORY COMMITTEE QUESTIONNAIRE AND HEADLINER INPUT

Question 3: One thing that makes me excited about this project is...

Responses for what makes people excited about this project were directly related to the image and safety of the corridor. Many participants commented on how they were excited about the project's potential and its ability to improve the overall image of North Kansas City.

Question 4: What type of uses, activities or features are missing along the corridor?

The top three responses received for uses missing along the corridor included retail, walkability and bicycling. These responses were consistent for both the Advisory Committee and the Community.

Question 5: If you left North Kansas City for 10 years and returned, what portions of the Burlington Corridor would you hope remain unchanged?

When asked what portion of the Burlington Corridor should remain unchanged, the top responses were 'nothing.' However, the Community and Advisory Committee participants both recognize that Burlington serves as an important and efficient north-south connection between Downtown and the Northland, and the overall functionality should remain unchanged. The industrial character of the corridor and the bicycle connection across the bridge were also mentioned as items to remain unchanged.

Question 6: What portions would you hope have been improved?

The top features nominated for improvement include bicycle facilities, pedestrian improvements, and creating a welcoming gateway feature or element to notify pass-through traffic and visitors that they have arrived in the City of North Kansas City.

Question 7: Fill in the appropriate circle that best suits what you would like the future orientation of the Burlington Corridor to look like.

The last question asked all participants to rank on a sliding scale how the future of the Burlington Corridor should be designed – ranging from auto-oriented to pedestrian-oriented design approaches. The average responses calculated to approximately a 50/50 split, providing a strong balance for accommodating pedestrian needs as well as vehicular needs as part of the future vision for the corridor.

IMAGE PREFERENCING

A wide range of example project images were provided at both the Advisory Committee and Community Public Meetings to receive thoughts and opinions about the type of visual character and features participants would like to see along the Burlington Corridor. Each participant received several green and red dot stickers to provide their input on their most and least preferred images. Many green dots were placed on items they preferred such as bicycle/pedestrian integration, the look and feel of the future corridor appearance with streetscape amenities, signage and identity-related features, and revitalized landscape median treatments. Those with an industrial vibe garnered higher votes.

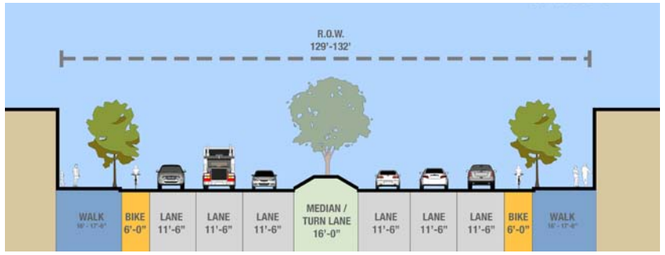
Images garnering the most red dots as participants' least preferred examples included those that appeared to be too modern or sleek, landscapes that appeared bare or with little visual interest, and elements that appeared to be too traditional or historic in nature.

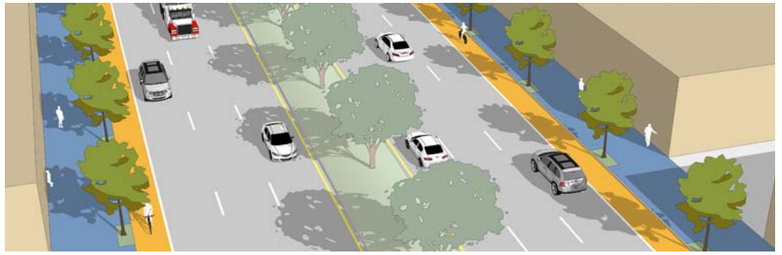
FIGURE 2.7 IMAGE PREFERENCING RESULTS

ROADWAY CONFIGURATION CONCEPTS

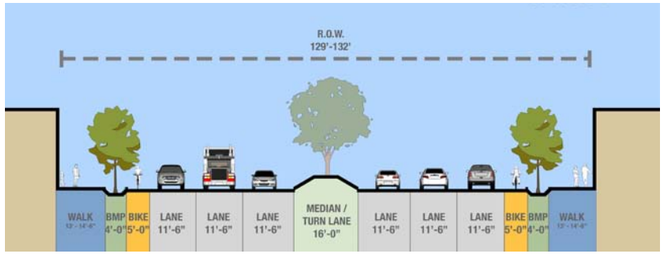
In addition to the questionnaires and image preference exercises, the planning team asked for additional input from the Advisory Committee and the Community regarding four initial alternative roadway configuration concepts. These four concepts were developed to explore a variety of methods for incorporating bicycles and pedestrian activity into a reconfigured corridor design. These concepts ranged from a variety of on-street bicycle lane configurations to the use of a two-way dedicated cycle track.

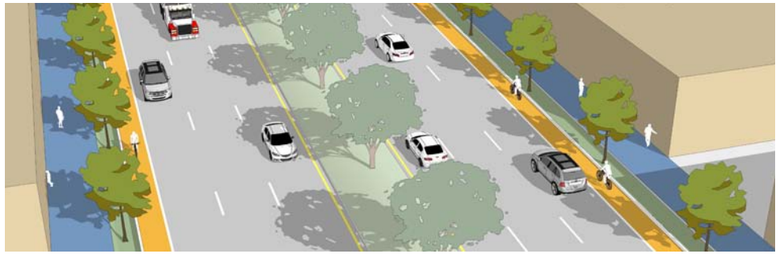
OPTION A



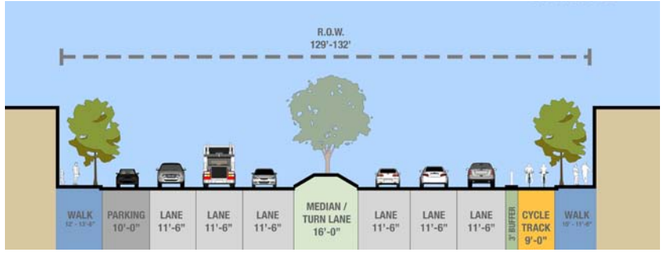


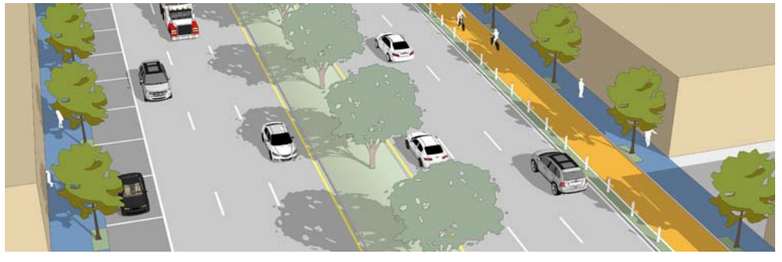
OPTION B



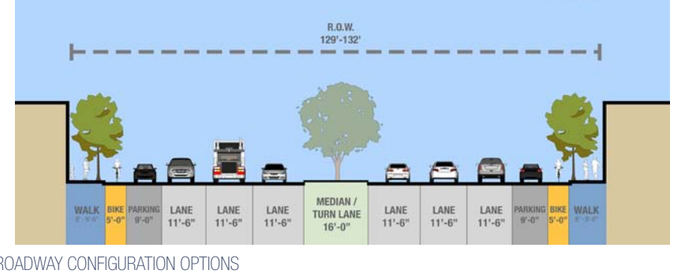


OPTION C





OPTION D



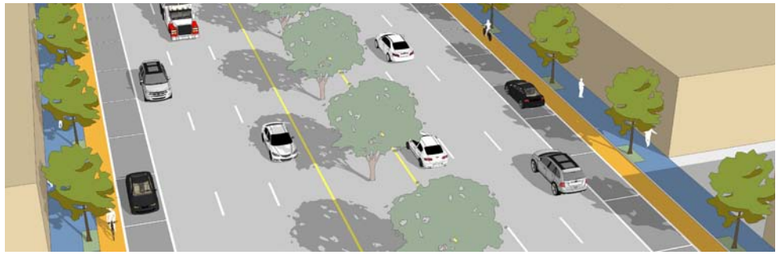


FIGURE 2.8 ROADWAY CONFIGURATION OPTIONS

OPTION A

This concept offered six foot wide directional on-street bike lanes to be located on each edge of the corridor and very wide pedestrian sidewalks. In order to accomplish this, all on-street parallel parking on both sides of the street would be removed. Berming of the median island would remain in this concept.

OPTION B

This concept was similar to Option A in that both offered directional on-street bike lanes and the removal of all on-street parking along the corridor. Berming of the median island would remain in this concept. This concept provided a slightly narrower bicycle lane at five foot wide, and incorporated linear rain garden landscape areas on each side of the roadway between the sidewalks and bicycle lanes. These rain gardens could assist in treating storm water runoff, and decreased the space available for sidewalk and streetscape amenities.

OPTION C

This concept shifted the bicycle lanes to the east side of the corridor – into a two-way cycle track placed between the sidewalk and the roadway. A cycle track allows for bikes to travel both directions within the designated space, similar to what occurs today crossing over the Heart of America Bridge. Berming of the median island would remain in this concept, and provision for on-street parallel parking along the west side of the corridor was incorporated. The resulting sidewalk widths of 10'-12' on both sides was smaller than Options A and B, but still much wider than existing conditions.

OPTION D

This concept maintained on-street parallel parking on both sides of the corridor, while incorporating five foot wide bicycle lanes on either side of the corridor located between the sidewalk and roadway edge. This option provided the narrowest sidewalks of all three options and included the widest cross-section of street infrastructure. It also included removing the bermed median to improve visibility throughout the corridor.

INITIAL SUPPORT FOR CYCLE TRACK OR BIKE LANES

As a result of these initial exercises, it was clear from both the Advisory Committee and the Community that options for incorporating bicycles into the corridor were preferred, and additional study and analysis would be necessary for both cycle track and bicycle lanes would be needed. The differences and benefits of both approaches were discussed, including the desire to remove the bermed median and to incorporate opportunities for landscaped rain gardens into the design of the corridor. Getting a better understanding regarding the potential impact of removing on-street parallel parking stalls on the east side was also identified as a need in conjunction with this additional analysis.

BIKE LANES

Additional design concepts were developed to further explore the option of integrating bicycle lanes into the design for the corridor. Utilizing on-street parallel parking as a buffer on both sides of the corridor in this option, the bicycle lanes were placed near the curb line on each edge of the roadway.

Due to the location of Downtown NKC and all of the residential neighborhoods being located on the east side of the corridor, the use of bicycle lanes in this particular instance creates a challenging dynamic for those interested in riding in the southbound direction. This requires riders to cross over Burlington to access the southbound bicycle lanes, which does not create the safest and most accessible connection. Connecting these lanes to the existing Heart of America Bridge trail facility would also require crossing over the corridor at 10th Avenue, and continuing these lanes northward along 9 Highway and North Oak Trafficway would require similar crossing movements.

There were numerous comments and opinions about the merits and drawbacks of this approach as a result of this analysis. These limitations, and in comparison to the benefits afforded by the cycle track option, a preference for the cycle track emerged.

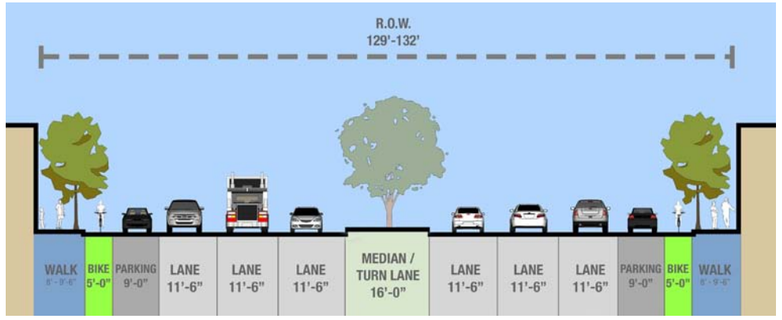


FIGURE 2.9 BIKE LANE

CYCLE TRACK

A two-way cycle track concept proposed along the Burlington Corridor provides a direct connection from the extension of the existing Heart of America Bridge trail facility. Locating the cycle track along the east side of the corridor provides a safer accessibility for residents and businesses, the majority of which are located along this side of the corridor. This placement also creates a more family-friendly dedicated bicycling facility that can eventually lead to more straightforward extensions along both the 9 Highway and North Oak Trafficway corridors, and provide flexibility to eventually transition to bicycle lanes or off-street multi-use paths along these corridors to eventually connect with other areas of the Northland.

OFF-STREET MULTI-USE PATH

Due to the narrower right-of-way in the section located between 10th and 12th Avenue, bicycles would utilize an off-street multi-use path along the east side of the corridor. This option explored maintaining vehicular lane widths in the 11' to 11'-6" width range consistently through the corridor, while also maintaining the consistent 16' width of the median.

Based on initial analysis of this option, concerns were expressed relating to the available width of the multi-use path and the conflicts with pedestrian activity that would occur during this two-block stretch of the corridor. Further refinement of this cross section was needed to explore shifting the centerline of the roadway to the west slightly, reducing the width of the median, and increasing the width of the eastern side of the corridor to a more functional multi-use path for both pedestrian and bicycle uses.

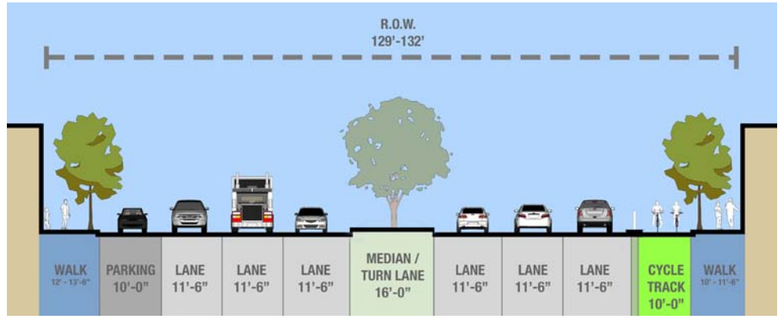


FIGURE 2.10 CYCLE TRACK

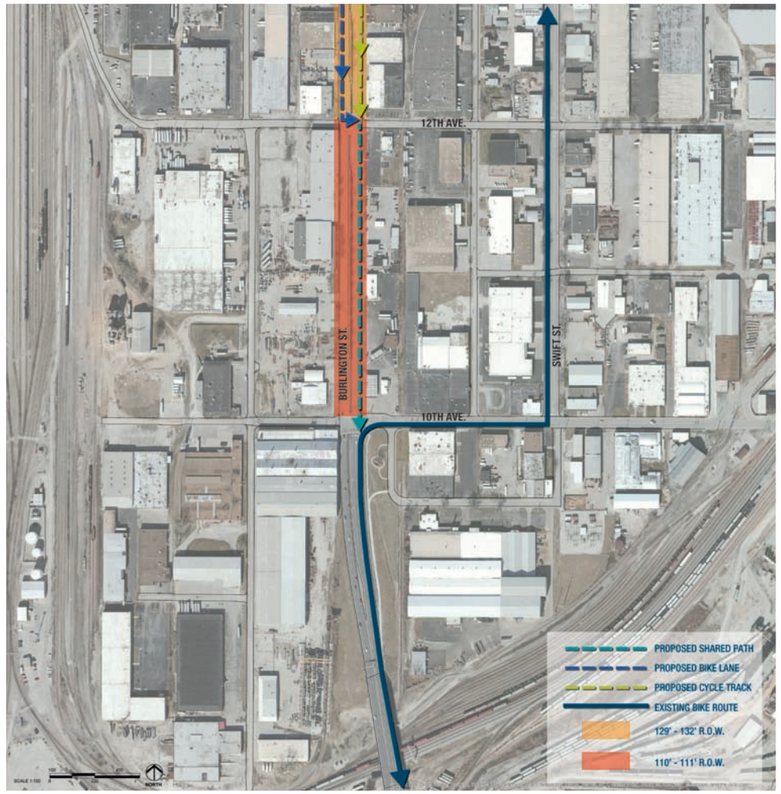


FIGURE 2.11 BIKE LANE, CYCLE TRACK, AND MULTI-USE PATH POTENTIAL SYSTEM

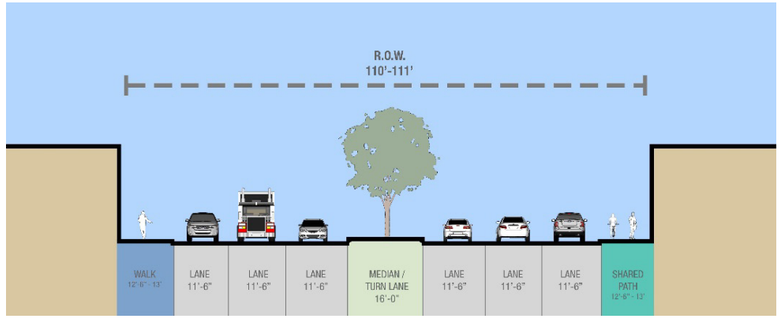


FIGURE 2.12 MULTI-USE PATH

FIGURE 2.0 EXISTING TRANSIT STOP LOCATIONS

FIGURE 2.13 POTENTIAL SCENARIO FOR STOP OPTIMIZATION

FIGURE 2.14 EXAMPLE PHOTOS OF TRANSIT + BICYCLE INTEGRATION

TRANSIT INTEGRATION

There are several existing bus transit stops along the Burlington Corridor today. These are generally located every one to two blocks on either side of the corridor, and primarily occur near the intersection. The KCATA is currently involved in optimizing these and other transit stops throughout their entire system serving the Kansas City metropolitan area.

As such, the Burlington Corridor is slated to be analyzed by their staff sometime in the near future. It is anticipated that the number and final location of these transit stops along the corridor will be consolidated as a result of this process.

For the purposes of this study, we have provided a concept-level review of these stop locations and created an anticipated consolidation to occur at approximately two block intervals along the corridor. The final locations of these transit stops will need further coordination with the KCATA and the City of North Kansas City as improvements to the transit system and the corridor are made in the future.

As part of the complete street design approach for transforming the Burlington corridor, it is paramount that improved public transportation be considered and integrated into the vision and goals for enhancing this corridor. As stated previously, the Burlington Corridor serves as a vital north-south linkage to Kansas City's Northland area. Its role in providing and promoting improved transit service along the 9 Highway and North Oak Trafficway corridors will enhance accessibility for both existing and future residential and commercial development in these areas.

The integration of these transit stations into the design of the street was an important factor considered as part of the overall corridor design. Examples of similar innovative design solutions were explored and considered while formulating an appropriate transit solution for this particular application. Through discussion with KCATA staff during the design process, a specific challenge was identified for providing safe bus access to transit stations when adjacent to dedicated bicycle lanes and facilities.

Conflicting movements of bicycles mixing with buses trying to pull up to the curb have created some safety concerns in other areas of the region where bicycle lanes have been installed. This situation is compounded when the need arises to assist any riders in need of additional accessibility assistance boarding or de-boarding the bus. Deploying the automatic ramp from the bus door requires approximately eight feet of sidewalk space to allow for appropriate accessibility in these situations – a condition not consistently provided throughout the existing network of transit stops in the system.

The need to augment the alignment of the proposed cycle track adjacent to these transit stations became clear, and opportunities to properly address this situation were explored by the design team in response to these concerns and challenges. This provided a significant opportunity to develop a creative solution while maintaining the framework of our overall approach for transforming the corridor.

ROADWAY AND PARKING ANALYSIS

The existing corridor configuration is shaped to accommodate vehicular traffic, and is primarily focused on that use and its specific needs. In order to explore opportunities for modifying the corridor to accommodate and integrate other modes of transportation in a stronger way, it was important to understand the existing vehicular turning movements and access to adjacent properties, as well as on-street parking conditions along the corridor.

TURN LANES

In addition to the left turn lanes located in the median area, there are a handful of locations along the east side of the corridor where additional roadway lanes have been constructed to facilitate right-hand turning movements. These are located at the 10th Avenue and Armour Road intersections, and at the entrance into Quick Trip located just south of 29th Avenue. These turning movements create conflicts with anticipated pedestrian and bicycle activity along the corridor, and need to be considered for modification as part of the new design to reduce the anticipated conflicts while encouraging stronger visibility of cyclists and pedestrians.

DRIVEWAY APRONS + ACCESS

There are numerous properties adjacent to the corridor where multiple driveway aprons/access points are provided connecting to Burlington. These driveway access points can create challenging, and in some cases dangerous, crossings for pedestrians and bicyclists. They can also can have a negative impact on traffic flow throughout the corridor.

EXISTING PARKING CONDITIONS

There are currently on-street parking spaces available on each side of the corridor, generally located between 12th Avenue and 26th Avenue. A total of 136 on-street parking spaces currently exist on the west side, and approximately 105 parking stalls are located on the east side of the corridor. In order to understand how these parking spaces are currently being used by adjacent businesses, a “day in the life” analysis of existing on-street parking was conducted during a typical weekday – including several times throughout the day to gauge the usage and location of this on-street parking.

The observation began with a tour of the corridor at 8:30 in the morning, when it was noted that approximately 23 parking stalls were in use on both sides of the corridor. These were primarily clustered between 12th and 14th Avenues, with a smaller amount located near 15th Avenue and a small amount located on both sides northward leading towards 23rd Avenue.

This observation continued again at 12:30pm that same day, when it was observed that approximately 30 parking stalls were in use on the west side of the street – again clustered primarily in the area between 12th and 16th Avenues. Approximately 20 parking stalls were in use on the east side, generally noted to be in the same location as were observed that morning.

A final observation was made that day at 5:00pm, when it was noted that approximately 10 parking stalls were in use on the west side, and 13 parking stalls were in use on the east side. Most of these stalls were again in similar locations as previously observed.

ADDITIONAL PARKING

Additional analysis was undertaken to explore available public parking lots located in proximity to the corridor. It was noted that a 266 space lot was recently constructed by the City near 14th Avenue on the southern end of the corridor. Another 129 space City parking lot is also available closer to Armour Road near 18th Avenue. These lots provide significant additional public parking for businesses located along the east side of the Burlington corridor, and were not observed to be parked at anywhere near capacity during this observation period.

These observations indicate that the corridor’s on-street parking stalls are generally utilized for all-day employee parking, and are not necessarily being utilized for in and out short-term parking traffic associated with commercial businesses along the corridor. From these observations, it is clear that the amount of space and pavement currently dedicated to on-street parking is currently going unused, and there are opportunities to significantly reduce this parking and to take advantage of available City parking lots while still meeting the needs of businesses along the corridor.

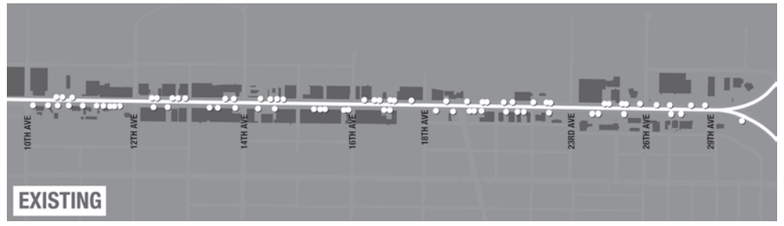


FIGURE 2.15 EXISTING DRIVE APRONS AVAILABLE ALONG BURLINGTON (APPROX.)

FIGURE 2.16 EXISTING DRIVE APRONS UNDER USED ALONG BURLINGTON

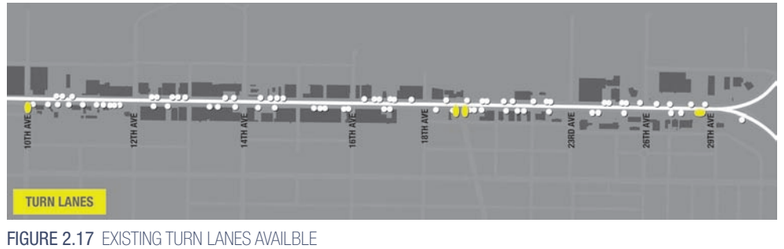


FIGURE 2.17 EXISTING TURN LANES AVAILBLE

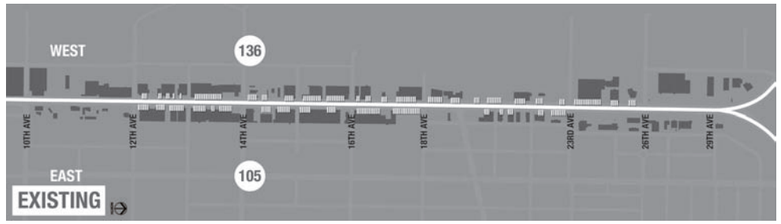


FIGURE 2.18 EXISTING PARKING STALLS AVAILABLE ALONG BURLINGTON (APPROX.)

FIGURE 2.19 EXISTING PARKING STALLS UTILIZED AT 8:30 AM ALONG BURLINGTON

FIGURE 2.20 EXISTING PARKING STALLS UTILIZED AT 12:30 PM ALONG BURLINGTON

FIGURE 2.21 EXISTING PARKING STALLS UTILIZED AT 5:30 PM ALONG BURLINGTON

FIGURE 2.22 EXISTING PARKING STALLS AVAILABLE FOR SUPPORT PARKING NEAR BURLINGTON

TREE INVENTORY AND ASSESSMENT

The corridor is currently home to a variety of trees, and a concept-level analysis was provided as to their current condition and location along the corridor. These existing trees include Honey Locust and Ash as well as a few others.

The location of each of these existing trees is noted on the color-coded map located on this page, which also includes a rating as to their current health and condition. These trees should be taken into account for replacement and/or integration into future streetscape design and planning for the use of trees along the corridor.

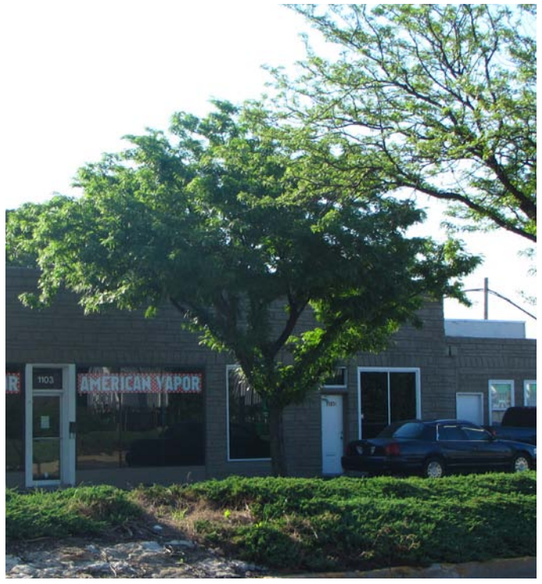
Trees noted in relatively good condition were primarily found in several areas of median plantings, as well as on the northern end of the corridor.

Trees noted in fair condition, highlighted in yellow, are generally scattered throughout the corridor – with some concentration on the west side of the corridor in the northern end.

Trees noted in poor condition are nearing the end of their life or have suffered serious health setbacks. They are indicated in red on the map, and are primarily clustered in the central part of the core between 14th and 18th Avenues – with a few located in random locations along the corridor.

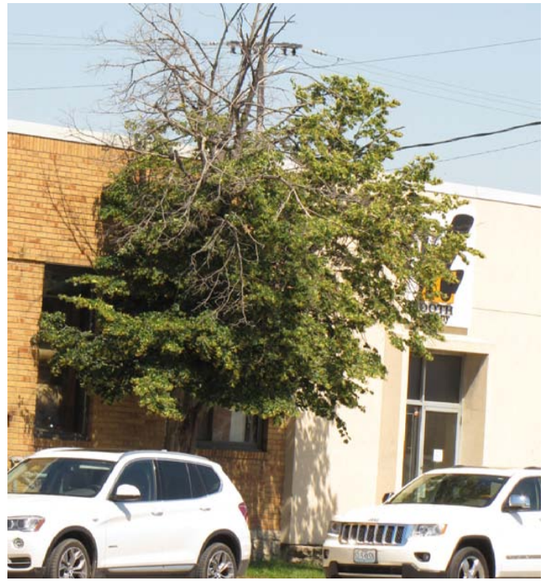
There were also a handful of dead trees noted along the corridor in various locations. Some of these included several Ash trees that appear to have been affected by the Emerald Ash Borer, which has become a growing trend here in the United States and in our area that is significantly affecting the lifespan of this species.

GOOD



FAIR

POOR



DEAD

FIGURE 2.23 TREE INVENTORY AND ASSESSMENT ALONG BURLINGTON

CORRIDOR STREETSCAPE APPROACH

While this corridor also serves a larger segment of the Northland, its location in North Kansas City provides a unique opportunity to respond to the significant land uses it has served. This includes creating a unique and authentic visual appearance that compliments the role it has played in establishing North Kansas City with its strong industrial heritage.

In considering the 2-mile long corridor and the length of time it takes for one to travel from one end to the other, the Advisory Committee chose a design approach that creates a sense of visual consistency throughout the corridor, yet incorporates additional pedestrian-friendly features and amenities in a more concentrated manner as one approaches Armour Road from either the north or the south. Armour Road provides the "welcome mat" into Downtown North Kansas City from Burlington, and this approach creates additional visual interest along the corridor as one gets closer to this key intersection.

DESIGN INFLUENCES

A review of existing conditions, patterns, and materials was undertaken to explore the unique flavor and visual vocabulary of the corridor and its adjacent uses. This provides an underlying framework from which to build a unique and complementary streetscape design vision. Several industrial buildings, modern influences, and transportation elements were considered and evaluated to create a series of patterns and materials for use in the overall design of the streetscape.

Several alternative design concepts were created for review and consideration to test the application of these influences in different ways. A series of street and pedestrian lights utilizing curves, angles, and ninety-degree supporting arms were explored for use. A wide range of other types of streetscape design devices were also developed for consideration.

FIGURE 2.0 CORRIDOR STREETSCAPE CONCEPT: HIGH FREQUENCY

FIGURE 2.24 CORRIDOR STREETSCAPE CONCEPT: CENTRAL DISTRICT

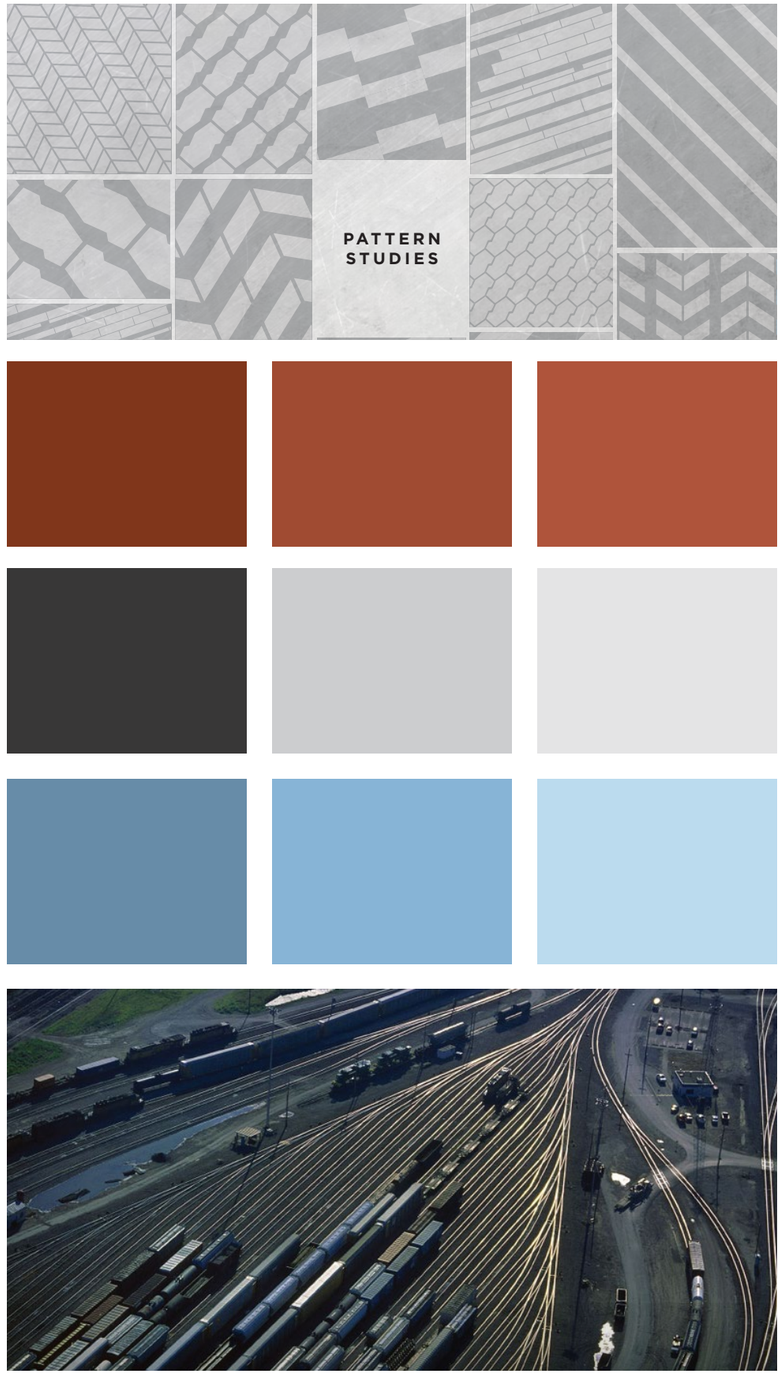


FIGURE 2.25 CORRIDOR STREETSCAPE INSPIRATION CONCEPTS

These included decorative screening elements, identification and wayfinding signage, and corridor branding and identity features that were considered for use in establishing the Burlington Corridor as a unique “Destination District” within the metropolitan area. These concepts were shared with the Advisory Committee and the Community to receive input in shaping final recommendations for use along the corridor.

The intent is to create a unique look and feel that complements and promotes the strength and energy found in this corridor and in North Kansas City.

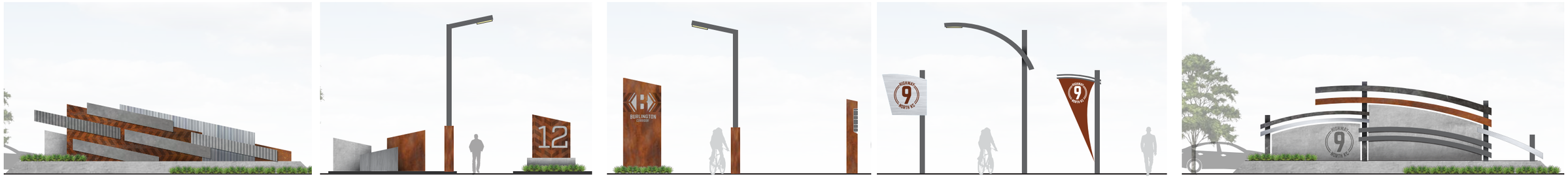


FIGURE 2.26 CORRIDOR STREETSCAPE DESIGN AND BRANDING CONCEPTS

CHAPTER THREE: **PLAN VISION**

"Vision is the Art of Seeing What is Invisibile to Others."
-Jonathan Swift

BURLINGTON VISION AND REVITALIZATION

Through a series of interactive and engaging meetings with the Advisory Committee and the Community, a unifying vision for the corridor was created. What is today a tired and well-worn urban street is envisioned to become a vibrant, sustainable, and multi-modal spine that not only serves the surrounding area's transportation needs - but also will support and attract high-quality redevelopment and revitalization within the City of North Kansas City.

By improving the aesthetic appearance of this corridor, the City of North Kansas City will be making a profound statement to the development community in the Kansas City area. This corridor will serve as a unique and welcoming gateway into the City, and is anticipated to become the most "complete street" in the entire metropolitan area.

The corridor is slated to become the Kansas City Metropolitan Area's first dedicated cycle-track – a two-way bicycle facility that will utilize the existing on-street parking lane on the east side of the street. New trees, landscape, pedestrian and street lighting, signage, transit features, and pedestrian amenities will be integrated into this plan to serve all modes of transportation efficiently and effectively.

This corridor will be unlike any other, as it will have a unique look and feel that truly reflects the area it serves. The streetscape design will infuse energy and industry as primary components driving the aesthetic design decisions.

The design has also been crafted in a way that allows for incremental implementation through alternative construction and funding strategies for the City to consider. These strategies also take into account long-term use of the corridor as a primary transit spine serving other areas of the Northland and connecting into Downtown Kansas City.

FIGURE 3.1 PROPOSED BURLINGTON CORRIDOR VISION

FIGURE 3.2 PROPOSED BURLINGTON CORRIDOR VISION + SUPPORT IMAGES

The proposed design incorporates three lanes of traffic flowing in each direction, with a center turn lane that provides left turning movements at key intersections. The design also incorporates on-street parallel parking along the west side of the corridor. It provides expanded pedestrian sidewalk areas, sometimes referred to as “bump-outs” at major intersections. These can also be utilized for transit shelters and other pedestrian amenities located in these areas.

New pedestrian crosswalks are anticipated to be provided at street intersections, and the sidewalk bump outs significantly reduce the distance a pedestrian has to walk from one side of the street to the other when crossing.

All traffic signals are anticipated to be located on the corners of the intersections, and will be removed from their center location in the medians where they currently exist. These traffic signals will also be designed along the east side to provide directional signals for those using the cycle track, which will utilize the existing on-street parking lane on the east side of the corridor.

Truck turning radii will be taken into account at intersections to ensure turning movements are not inhibited, while still providing expanded areas for pedestrian activity behind the back of curb. Additional opportunities for landscape enhancements and placement of pedestrian amenities will help to address and soften the visual appearance of the corridor while promoting more pedestrian activity adjacent to existing commercial industrial buildings. Several of these existing buildings have transformed over the years to more commercial and restaurant types of uses, and this trend is anticipated to continue in the near future. The design of the street should further assist and promote this type of transformation in both the short and long-term.

DESIGN SOLUTIONS

CYCLE TRACK

To maintain three lanes of vehicular travel consistently through all areas of the corridor, as well as to provide a two-way buffered cycle track, and to do so consistently throughout the corridor provided a significant challenge and opportunity for the design team to explore.

The narrowest section of right-of-way between 10th and 12th Avenues on the south end of the corridor provided the most significant challenge. In this location, the design proposes three 11-foot wide travel lanes in each direction, a narrower median that is reduced from 16-feet existing to 12-feet in width, to allow for the construction of a 10-foot wide cycle track on the east side of the roadway while also accommodating wider sidewalks and amenity zones adjacent to the outer edges of the right-of-way.

This configuration will require a slight shift to the west of the existing centerline of the street, and will require some geometric transition to the existing centerline location both south of 10th Avenue leading to the HOA Bridge, as well as north of 12th Avenue to tie back in to the existing centerline of the corridor. The 12-foot median will still provide room for a left turn lane in both directions at the 10th and 12th Avenue intersections.

For areas north of 12th Avenue, the typical cross-section will become three travel lanes in each direction with a width of 11 to 11.5-feet, a median of 16-feet in width to provide turn lanes at intersections, and an on-street parking lane for parallel parking on the west side that is 10-feet. This provides a wider sidewalk and amenity zone on each edge of the right-of-way in addition to the 10-foot cycle track located on the east side of the corridor.

The outside lane in the northbound direction on the east side of the corridor is anticipated to be utilized for any temporary loading or unloading and/or temporary parking for existing businesses adjacent to the east edge of the corridor. This loading condition is similar to what occurs in the corridor today at a few locations, and will require additional coordination and discussion between MoDOT and the City of North Kansas City as part of the final design process for these corridor enhancements. Any use of this lane will need to be time sensitive so as not to conflict with rush hour traffic at the end of each work day in the northbound direction.

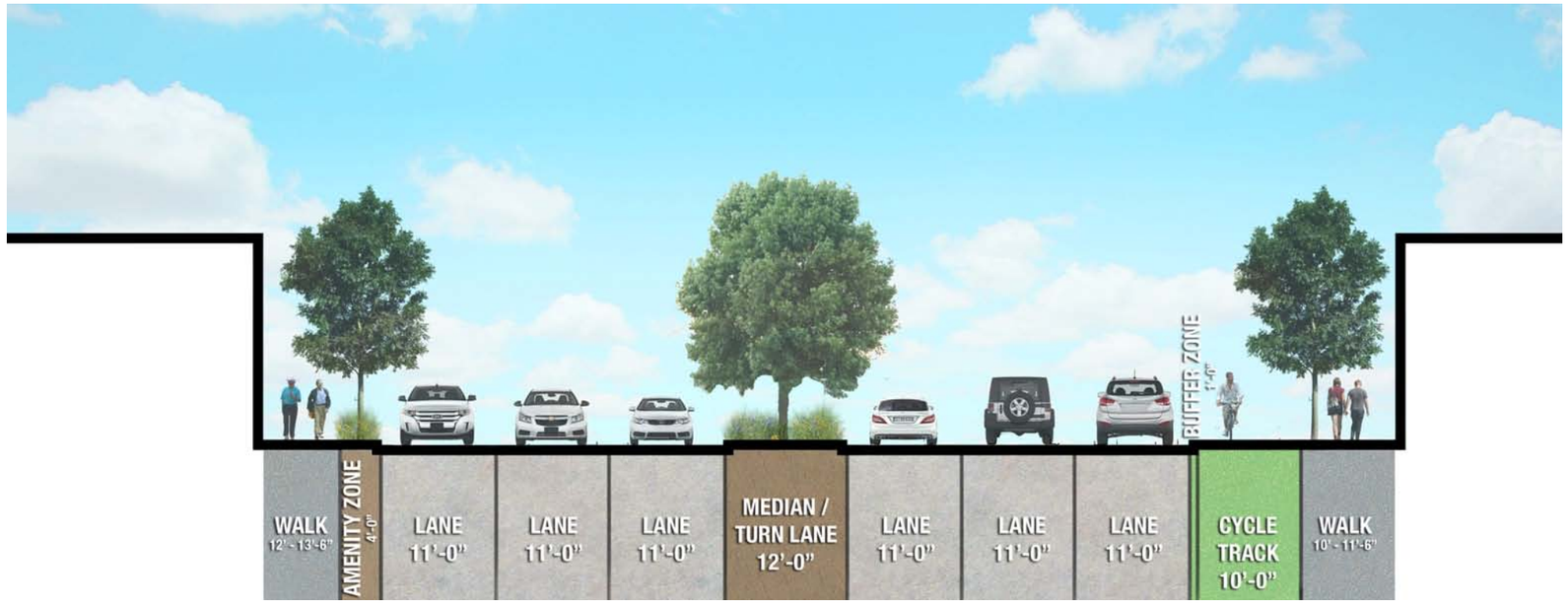


FIGURE 3.4 PROPOSED CYCLE TRACK SECTION FROM 10TH AVE TO 12TH AVE

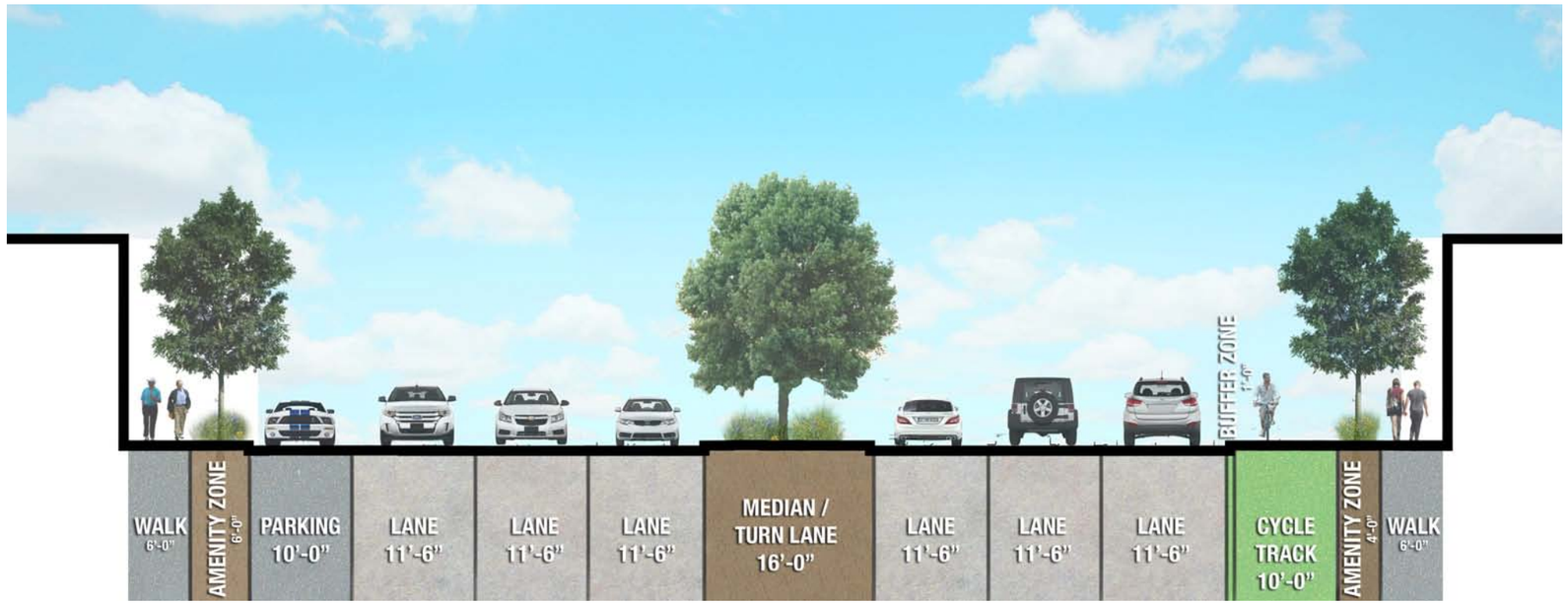


FIGURE 3.5 PROPOSED CYCLE TRACK SECTION FROM 12TH AVENUE, NORTH

FIGURE 3.6 PRECEDENT CYCLE TRACK EXAMPLE

FIGURE 3.7 LOOKING SOUTH AT ARMOUR AND BURLINGTON, LOOKING SOUTH, MODEL VIEW

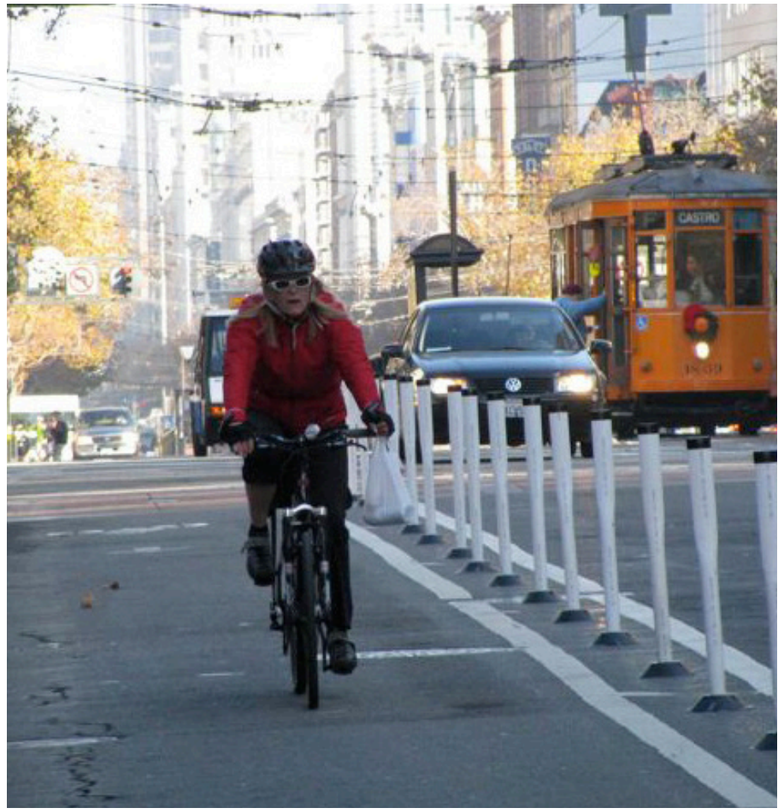


FIGURE 3.8 PRECEDENT CYCLE TRACK EXAMPLE

FIGURE 3.9 TRANSIT STOP, MODEL VIEW

The use of bus stops along the east side of the corridor creates a unique challenge and opportunity, as it integrates with the proposed cycle track alignment. There is the potential for significant conflict in picking up and dropping off passengers while the cycle track is in use. In fact, this is occurring with new bike lanes that have been constructed in several corridors throughout the Kansas City metropolitan area, and was identified as a key issue by the KCATA. The design team explored alternatives and examples to develop a creative solution to minimize and/or eliminate this conflict.

Our solution was to develop an 8- foot wide transit island that allows the station to be placed on the edge of the roadway, which provides a large enough platform for the bus to deploy its automatic handicap ramp for access.

This requires the alignment of the cycle track to be adjusted slightly to the east. In conjunction with this alignment shift, the cycle track will be reduced in width to 8-feet total at these locations, and the adjacent sidewalk will also be narrowed a few feet to accommodate these improvements.

The result creates a uniquely integrated system of bicycle, pedestrian, and transit improvements that also elevate the appearance and visibility of these transit stations significantly by placing them in prominent locations adjacent to the travel lanes. A similar approach on a slightly smaller scale has been implemented in a few cities in the United States thus far, but has not yet been implemented in the Kansas City area.

MEDIAN ENHANCEMENT

In addition to enhancing the pedestrian sidewalk areas on either side of the roadway, additional landscape and corridor identification elements are anticipated to be placed in the medians. These elements include weathering steel with decorative patterns that complement the overall streetscape theme, with aesthetic lighting to enhance their appearance at night.

FIGURE 3.10 MEDIAN TREATMENT, MODEL VIEW

KIT OF PARTS

The overall streetscape theme for this Corridor is named “energized industrial”. The collection of streetscape enhancement items is referred to as a “kit of parts”, which is basically a menu of available items that can be placed throughout the corridor to provide a consistent overall look and feel. These elements include lighting, site furnishings, bike racks, benches, planters, transit shelters and kiosks, and thematic elements.

Due to the area’s historic industrial influence, the design anticipates finding some large industrial equipment or components that may be available and are no longer in use. These pieces can be integrated into the design and placed at highly visible locations throughout the corridor, elevating them to “art” that reflects the role they played in making North Kansas City such a strong industrial hub.

This motif involves new street lights and pedestrian lights using 90-degree angles and integrated permanent banners and identification elements. The use of wood, raw and painted metal is anticipated for use in the amenities and features throughout the corridor. These material choices are intended to reflect a modern industrial flare that compliments the corridor’s history, while speaking to its anticipated future as a vibrant commercial and mixed-use corridor.

By utilizing these elements consistently on both sides of the corridor, a unifying design can be created that begins to address and strengthen the connection from the east side to the west side of the corridor. The existing west side properties are much smaller in comparison to the east side, and these corridor enhancements and modifications are intended to improve the connectivity and visual consistency for both sides of the corridor.

During the final design of the streetscape, final refinements and materials selections will be made to implement these recommendations and to support this underlying theme for enhancing the corridor.

There are numerous examples in the Kansas City metropolitan area where communities have invested in similar streetscape and corridor enhancements like these, and significant private development and revitalization activities have occurred in conjunction with and as a result of these improvements. It is anticipated that this enhancement project will have similar results for North Kansas City.

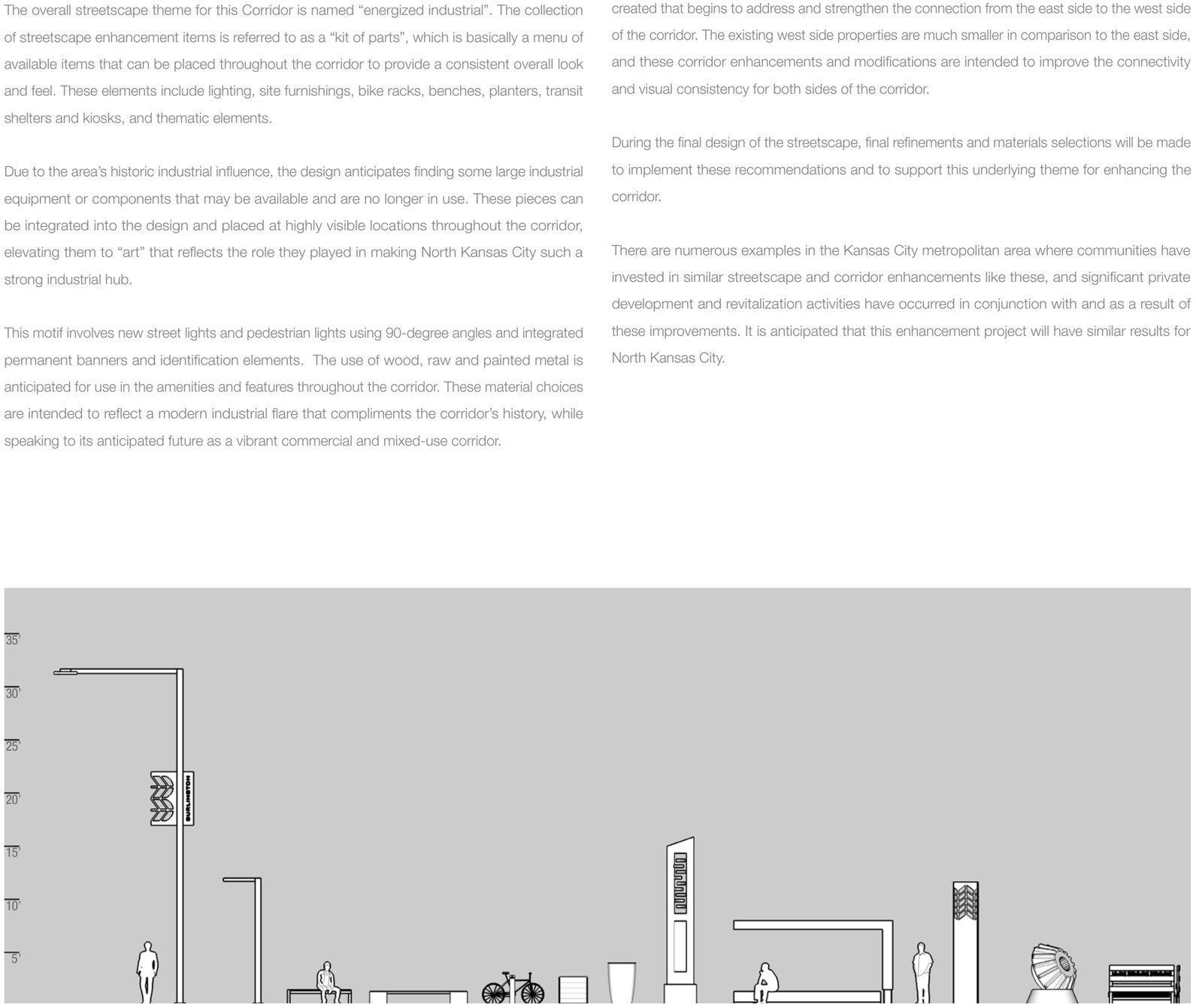


FIGURE 3.11 PROPOSED KIT OF PARTS SECTION

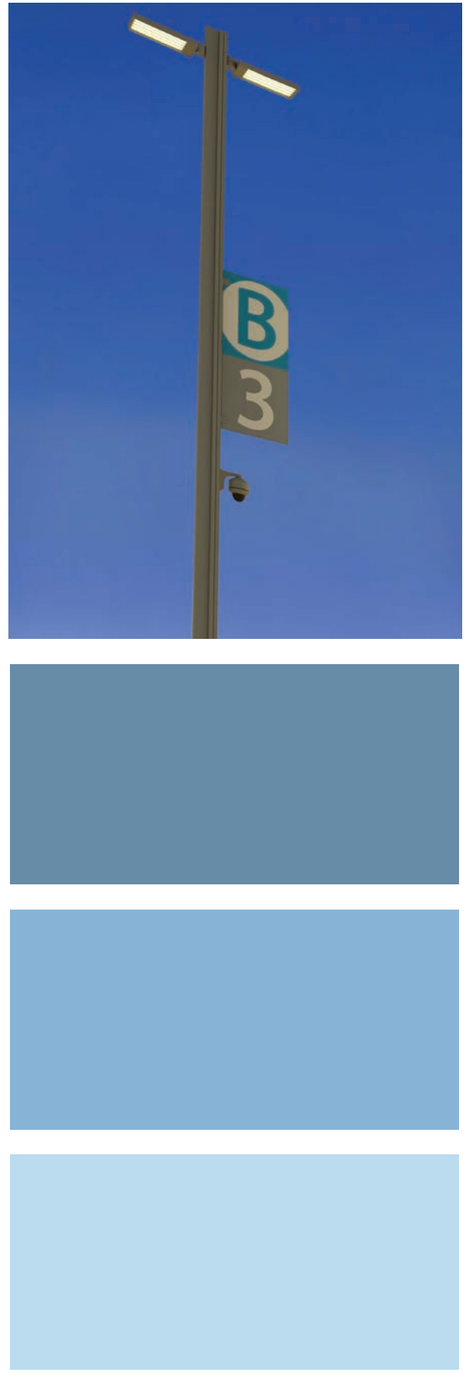


FIGURE 3.12 KIT OF PARTS PRECEDENT IMAGES

FIGURE 3.13 KIT OF PARTS PRECEDENT IMAGES

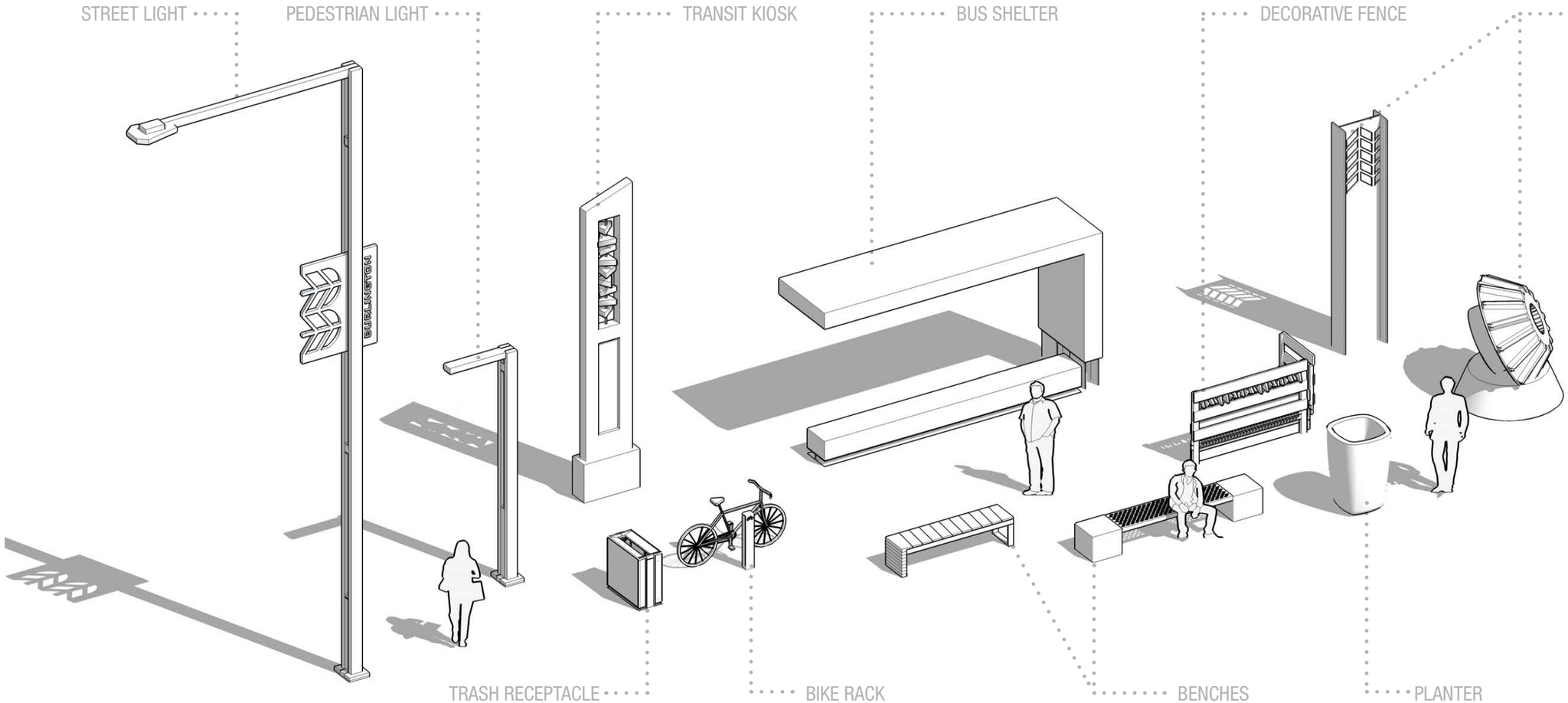


FIGURE 3.14 PROPOSED KIT OF PARTS

CORRIDOR POTENTIAL

A series of before and after images have been created as part of this study to illustrate the eventual transformation of the corridor. Examples include the Armor Road and Burlington intersection, with a view looking north.

EXISTING CONDITIONS

This view looking north illustrates the auto-dominated nature of the existing corridor, including wide and numerous driveway aprons leading into surface parking lots, undefined on-street parking lanes, and very narrow sidewalk conditions for pedestrians.

PROPOSED STREETSCAPE

This view illustrates the proposed improvements to the corridor including new pedestrian and street lighting, new trees and landscape plantings, and the integration of the transit shelter and cycle track along the east side of the street. Better defined crosswalks for pedestrians are also integrated at this intersection.

POTENTIAL REDEVELOPMENT + REVITALIZATION

The series of illustrations on this page anticipates a future condition including mixed-use development along the corridor. New multi-story buildings are indicated to be placed adjacent to or in close proximity to the right-of-way, and provides a much stronger relationship between buildings and the activity on the street. This truly transforms the personality and visual appearance of the existing corridor.

This illustration provides a hypothetical example of what could be developed on adjacent parcels, and does not represent a specific development proposal. It is merely provided as an example of the transformative impact a project like this can have over time.

FUTURE DOWNTOWN GATEWAY

This series of illustrations on the opposing page indicates transformation of the Armor Road and Burlington intersection looking east towards Downtown North Kansas City. It incorporates a future gateway feature element over Armour Road and additional streetscape enhancements and redevelopment possibilities for this area.

FUTURE ARCHITECTURAL CHARACTER

The building images on the opposite page represent a sampling of preferred architectural character examples for adjacent redevelopment and revitalization along the corridor. These reflect some of the preferred images selected by the Advisory Committee and members of the Community during the planning process.

FIGURE 3.15 ARMOUR AND BURLINGTON, LOOKING NORTH: EXISTING CONDITIONS

FIGURE 3.16 ARMOUR AND BURLINGTON, LOOKING NORTH: PROPOSED STREETSCAPE

FIGURE 3.17 ARMOUR AND BURLINGTON, LOOKING NORTH: POTENTIAL REDEVELOPMENT + INFILL

FIGURE 3.18 ARMOUR AND BURLINGTON, LOOKING EAST: EXISTING CONDITIONS

FIGURE 3.19 ARMOUR AND BURLINGTON, LOOKING EAST: PROPOSED STREETSCAPE

FIGURE 3.20 ARMOUR AND BURLINGTON, LOOKING EAST: POTENTIAL REDEVELOPMENT + INFIL

FIGURE 3.21 DEVELOPMENT EXAMPLES

PROPOSED BURLINGTON CORRIDOR

The plan and adjacent photos illustrate the surrounding context and streetscape improvements. The plan provides the land-uses along the corridor which reflect the City's latest master planning efforts. The supporting images provide the transformation that this corridor will have on Burlington and North Kansas City.

FIGURE 3.23 PROPOSED CORRIDOR VIEW

FIGURE 3.24 PROPOSED CORRIDOR VIEW

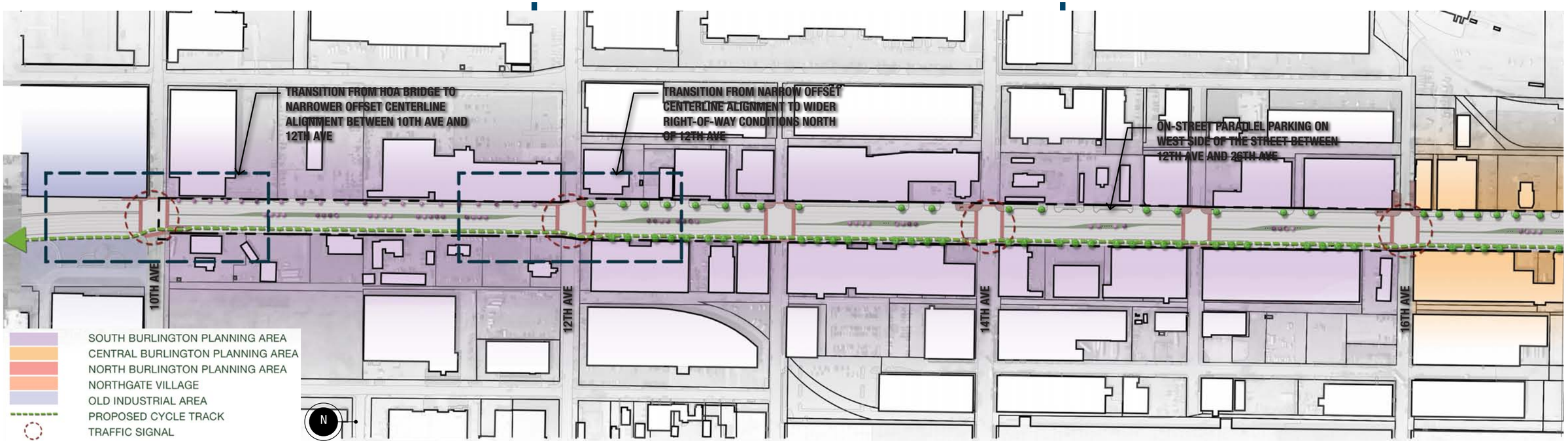


FIGURE 3.22 PROPOSED BURLINGTON CORRIDOR

FIGURE 3.25 PROPOSED CORRIDOR VIEW

FIGURE 3.26 PROPOSED CORRIDOR VIEW

CHAPTER FOUR: **IMPLEMENTATION**

INTRODUCTION

The Burlington Corridor Vision has great momentum – sustaining that momentum will be the continued support from the community, Advisory Committee and local leadership. The decisions from this chapter are based on these groups participating in an open dialogue and guiding the next steps for the future of this corridor.

The chapter provides the necessary tools and next steps to implementing the Burlington Corridor recommendations. The Chapter includes:

- Engineering Exploration: Outlining additional project needs and challenges in taking the next step towards implementation.
- Cost Opinion Assumptions: Providing the basis for what is included in the cost opinion.
- Cost Opinion: The cost opinion is based on 2016 costs for all improvements. The costs will need to be adjusted accordingly over time.
- Phasing Opportunities: Describes phasing options and the preferred approach.
- Implementation Priorities: Provides priorities based on public and Advisory Committee input.
- Funding Opportunities: Identifies applicable funding programs to pursue.

ENGINEERING EXPLORATION

The Burlington Corridor Complete Street Plan has identified areas of further exploration as part of the next step in the development of the streetscape project. The items below will need to addressed and considered when developing a construction document set.

ROADWAY & MEDIAN WIDTH TRANSITIONS

The segment from 10th to 12th Avenue has the tightest right-of-way, thus requiring a smaller 12-ft median to maintain the three lanes of traffic in each direction along with the inclusion of the 10-ft cycle track. The rest of the corridor segments from 12th to 29th Avenue will have a 16-ft wide median and will allow for maintaining three lanes of traffic in each direction along with a buffer and the cycle track. There will need to be some pavement and median width transition design work to determine the rate of transition from south of 10th Avenue to the 10th to 12th Avenue section, as well as from this section to north of 12th Avenue.

RIGHT-OF-WAY

The segment from 29th to 32nd Avenue have some right-of-way constraints and challenges. There doesn't appear to be enough width to allow for two northbound lanes of traffic, the cycle track and a sidewalk, so more analysis of this area along with design discussions between the City of North Kansas City and MoDOT should occur to determine if any lane continuity modifications or the purchasing of additional right-of-way could resolve this issue. The Burlington Corridor in general has little excess right-of-way, with the proposed sidewalk behind the existing sidewalk in many locations. Avoiding utility poles and installing ADA compliant curb ramps and pedestrian signal poles all within right-of-way may be difficult at some locations.

UTILITIES

Below is a list of these potential utilities that will need to be vetted in order to determine if they exist and/or are impacted by the proposed improvements:

- MGE
- Veolia Energy
- KCP&L
- NKC – Signals, Lighting, Water Mains, Storm & Sanitary Sewers
- Zayo
- Time warner Cable
- Surewest
- T.W. Telecom
- Verizon/MCI/Brooks
- Google Fiber
- Comcast
- Level 3
- Century Link (Lightcore, Qwest)
- AT&T
- AboveNet

BUS SHELTERS

The design for these facilities will need to meet ADA compliance requirements, accommodate surrounding utilities, and avoid conflict with the cycle track and sidewalk design improvements.

FIGURE 4.1 LOOKING SOUTH, NORTH OF 29TH AVENUE

DRAINAGE

Drainage could be an issue as the area is very flat. Any time an existing inlet is covered up by a cycle track or bumpout and a new inlet is added it could affect the drainage, especially if they are placed at a low point. Care should be taken to note the direction of gutter flow and where inlets are placed so as to not have ponding and ensure all the water is captured.

FIGURE 4.2 BUS STOP INTEGRATION

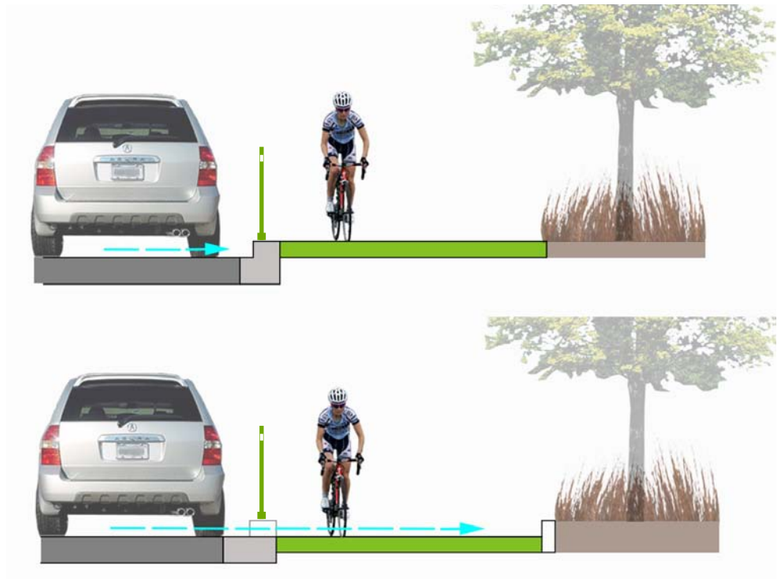


FIGURE 4.3 PROPOSED CORRIDOR DRAINAGE OPTIONS

COST OPINION ASSUMPTIONS

REMOVAL OF IMPROVEMENTS

Along with the construction of new improvements, there will always be the need to demolish or remove the existing facilities that are being replaced. A modest budget was included for each segment to account for the removal of existing improvements and facilities.

SUBGRADE COMPACTION

In conjunction with the sidewalk and/or cycle track, the pavement type selection from the 2008 Trails KC Plan document outlined that 6 inches of compacted subgrade must accompany the 6-inch reinforced concrete sidewalk or cycle track pavements.

TUBULAR MARKERS

As part of the elevated cycle track option, tubular markers will be used to give the bike rider an additional feeling of safety and separation from automobile traffic. The curb and gutter and elevated track should help give a sense of separation, but also assumed that it was important to place tubular markers on 30-ft spacing.

CONCRETE SAFETY BARRIERS

The use of concrete safety barriers can provide the bike rider an additional feeling of safety and separation from automobile traffic when the cycle track is at roadway level and is delineated only by the edge line, dashed center line and conflict area paint. The safety barrier will separate the roadway and the cycle track, but at driveways and street crossings the barrier will be tapered down to allow vehicles to pass without obstruction.

FIGURE 4.4 BARRIER EXAMPLES

CURB RAMPS

It was assumed that curb ramps shall be made out of concrete and will meet or exceed the requirements as set forth by the current PROWAG and APWA design standards. It was further assumed that there would be a curb ramp at every street or entrance crossing for estimation purposes.

TRUNCATED DOMES

It was assumed that these domes will be made out of materials as set forth by the current PROWAG and APWA design standards. It was further assumed for estimation purposes that there would be truncated domes located only at street crossing locations.

SIDEWALK / CYCLE TRACK

It was assumed that the pavement for this facility will include 6-inch reinforced concrete on a 6-inch compacted subgrade as approved by the 2008 Trails KC Plan document. This document identified several different pavement section types for non-equestrian trail pavement and sidewalk. The 6-inch reinforced concrete section type was chosen since the cycle track and sidewalk would be located in an urban setting and adjacent to each other.

CURB & GUTTER

For purposes of this estimate it was assumed that all of the new proposed curb and gutter along the east and west sides of Burlington Street, as well as along the center median islands would be a modified APWA CG-1 type curb & gutter. In order to preserve as much travel-way as possible the use of this 1-foot curb & gutter section is essential.

CYCLE TRACK PAVEMENT MARKINGS

The use of solid 6-inch pavement marking along the outer edges and a dashed 4-inch pavement marking down the center of the cycle track was important in the clear delineation of the cycle track versus the actual sidewalk. For purposes of this estimate, waterborne paint was assumed, but pavement marking tape could be an alternative option.

CONFLICT AREA PAINT

A green visible paint was included in areas where the cycle track will be crossing a street, a driveway or an entrance. The conflict areas vary in size and are generally the width of the cycle track (10-ft) by the length of the street, driveway or entrance crossing. The green color alerts the bike rider that he/she should be aware of the potential for crossing vehicular traffic.

PERMANENT SODDING

As part of the estimate it was assumed that a four foot swath of sod would be placed in locations where new curb & gutter and new sidewalk are being proposed. There will be a four foot green space between the curb & gutter and the front of the sidewalk. Also, it was assumed that there would be that same 2-ft sodded buffer between the cycle track and the sidewalk to help separate the two pedestrian facilities.

RAIN GARDEN

According to the MARC, rain gardens can absorb 30 percent more water than the same size area of regular seeded or sodded lawn. Based on APWA & MARC's BMP Manual for Stormwater Quality, the rain garden must be able to handle the treatment of 1.4-inches of the first flush rainfall. For purposes of the cost estimate it was assumed that all the median areas could be converted to rain gardens to retain and treat surface runoff from the Burlington Street pavement. This structural BMP is an engineered system that can be used to enhance stormwater runoff quality of urban/suburban runoff coming from roadway pavement, roof tops, driveways, lawns of residential neighborhoods, small commercial areas or parks. It is recommended that a registered landscape architect, horticulturist, or plant ecologist should be included in the design early to ensure that the performance of these facilities is optimized.

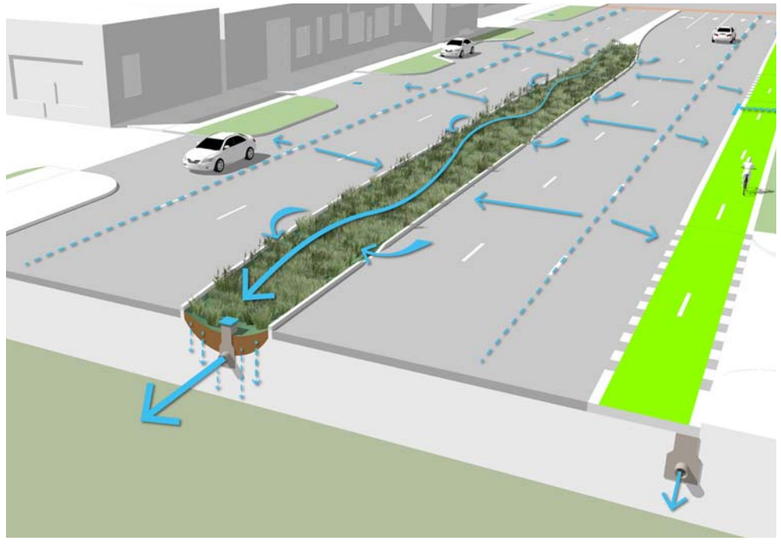


FIGURE 4.5 PROPOSED MEDIAN RAIN GARDEN

BIKE BOX

A bike box is a green colored area at a signalized or signed intersection that allows bicyclists to pull in front of waiting traffic in order to make a turn. The box is intended to reduce car-bike conflicts, increase cyclist visibility and provide bicyclists with a head start after coming to a stop. The box typically extends the width of one or more travel lanes and provides room for several bicyclists. Bike boxes are used in conjunction with bike lanes, from which bicyclists pedal directly into the box. The boxes have no intended function when traffic is already in motion at signalized intersections. Bike boxes work best at intersections with a high volume of bicyclists, they improve cyclists' visibility, they allow a left-turning bicyclist to reach a better position for making a safe turn, they allow bicyclists to reduce exposure to vehicle tailpipe emissions, and are also thought to elevate the "status" of bicyclists relative to motor vehicles. This application seems to lend itself well at the intersection of 32nd Avenue and Burlington St. / N.Oak Trafficway which is at the northern extents of the project corridor.

LIGHTING

Street lighting was designed to MoDOT illumination standards for continuous lighting. A 30-foot mounting height and 150 Watt (or LED equivalent) were assumed. The existing lighting will be in conflict with proposed features such as the cycle track, so completely new installations were assumed. Consideration was also given to pedestrian lighting. The street luminaires selected provide light in a pattern that illuminates back to the sidewalk to meet pedestrian lighting requirements. Between 16th and 23rd Avenue, pedestrian luminaire heads are added to the street lighting poles for aesthetics and the pedestrian nature of the area. SantaCole Candela streetlight and poles (see attached photo) were selected for street and pedestrian lighting.

SIGNALS

Due to the lane shift on existing Burlington Street, traffic signals will need to be completely reconstructed at the 10th and 12th Avenue intersections. Traffic signals will be designed to MoDOT and MUTCD standards. The existing mast arm signal poles currently are placed in the median island noses of Burlington. For those options where the median will be removed for a rain garden, the new mast arm signal poles will need to be installed outside of the roadway, resulting in new signalized intersections. Where the existing mast arm poles can remain in place, assumptions were made to retrofit the cycle track and bike signal heads with the existing signals (see attached photo). New posts are assumed to be needed on the east side of the intersections and to be adjacent to the new sidewalk ADA curb ramps with the bike signal heads, but the remaining signals can stay in place (with the exception of possibly moving a few overhead signal heads on the mast arm to center over the travel lanes).

DRAINAGE INLETS

Sections on the east side of the road with an elevated cycle track will cover up the existing drop inlets in the shoulders. New inlets are assumed between the roadway and cycle track at locations where the elevated cycle track covers up an existing inlet. There are a couple of options for the type of inlet to be used. There is a curb inlet, where the drainage opening is on the curb line and the inlet sets behind the inlet. This would cause the inlet to be partially in the cycle track. For this option, the cycle track should be jointed at and doweled into the inlet so there is no differential in elevations due to settling differences. The other option is a drop inlet with a grate, where the inlet sits under the curb and gutter. There are no settling issues with the cycle track to deal with, but the grates need to be out of the roadway and within the shoulder to comply with MoDOT standards. Currently the design is a 1-foot curb and gutter, and the minimum drop inlet size is 2'x2'. Reducing the lane widths by approximately 6-inches would be one way to acquire the extra width needed to contain the drop inlets in the shoulders adjacent to the elevated cycle track if curb inlets are still a concern. No extra width would be required in the median curb or west edge of pavement as curb inlets could be used without settling concerns for the cycle track, or drainage flumes would be used in the median where rain gardens are present. For the purposes of the cost estimate, curb inlets were assumed. Field inlets are also assumed to be needed in the median where the rain garden is installed as an overflow protection for flows that can't be contained in the rain garden itself. A field inlet was assumed to be installed approximately every 200-feet in the rain garden.

FIGURE 4.6 BIKE BOX EXAMPLE

STORM SEWER REPLACEMENT

Where new inlets are installed a contingency factor was assumed for pipe replacement of the connecting pipes in case the age or deterioration would prohibit using the existing drainage infrastructure. Most of the outside inlets connect to the median and median inlets and outlet down the side streets. Where outside inlets are being replaced due to the elevated cycle track (east side) or curb bumpouts (west side), the length of connecting pipe to the median was calculated. Where median inlets were also being affected whether due to new curb inlets on the road or area inlets in the median, the length of pipes in the median was calculated. An initial estimate of 50 percent pipe replacement was assumed to calculate storm sewer installation.

FIGURE 4.7 LIGHTING POLE EXAMPLE

DRAINAGE FLUMES

Drainage flumes were assumed to be installed in medians where there will be a rain garden (see attached drawing). They were placed at locations where there are currently drop inlets at the median.

SPECIAL PAVING

Special paving is located at the intersection crosswalks. The paving material is a colored concrete with painted pavement markings for design motif. Final paving design to meet MODOT and APWA standards.

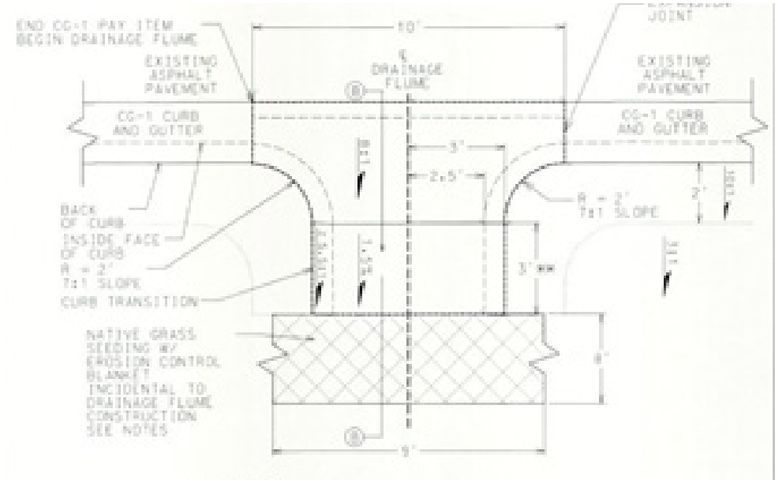


FIGURE 4.8 DRAINAGE FLUME EXAMPLE

FIGURE 4.9 SITE FURNISHING EXAMPLES

INDUSTRIAL THEMATIC ELEMENTS

Decorative thematic features are anticipated for use in medians and landscape areas throughout the corridor. These are custom fabricated from weathering steel that include punched metal design motifs. It is anticipated that each of these thematic features will have its own concrete footing and basic up-lighting.

The Industrial Thematic Elements are either found industrial elements from neighboring manufacturers for restoration and re-use along the corridor or custom elements that reflect the industrial components that sustained the manufacturing industries over the years. A footing is anticipated for all of these elements as well as basic up-lighting.

FIGURE 4.10 PROPOSED THEMATIC ELEMENT

FIGURE 4.11 PROPOSED DECORATIVE FENCING

BUS SHELTER/TRANSIT KIOSK

The bus shelter and transit kiosk will be fabricated with wood, steel/aluminum paneling and internally lit or have recessed lighting. The kiosk will have a digital screen similar to the KCATA MAX Line kiosks. Further development of the bus shelter and transit kiosk need to meet KCATA guidelines and standards.

DECORATIVE FENCING

The decorative fencing includes, metal or aluminum paneling, steel frame and concrete footings. All steel frame, metal and aluminum paneling to be powder coated.

SITE FURNISHINGS

Site furnishings include, bike rack, trash receptacle, bench and free standing planter. The bike racks (Capital), trash receptacle (Apex) and bench (Duo) are Forms and Surfaces products. The free standing planter shall have a small, medium and large concrete planter by Landscape Forms (Larkspur). All installation is assumed to be per manufacturer's standard recommendations.

ARMOUR GATEWAY AND SIGNAGE

The gateway and signage are anticipated to be steel frame (painted and weathering), wood and brick veneer and punched metal. This cost is a place holder as the City of North Kansas City is currently developing a gateway signage master plan that is not part of this study.

FIGURE 4.12 ARMOUR GATEWAY AND SIGNAGE SCENARIO

COST OPINION

The cost outlined are an opinion of probable construction costs based on current information. Costs are influenced by market conditions, changes in scope and inflation. These costs opinions are provided for initial order of magnitude budgeting purposes, and will adjust with the scope of the project as portions of the corridor proceed into implementation.

There were three different estimates completed for this study: non-elevated cycle track; elevated cycle track; and hybrid elevated cycle track.

NON-ELEVATED CYCLE TRACK

The non-elevated cycle track provided a cost opinion that kept the cycle track at the road elevation and provided a concrete barrier (MODOT – Type B) for protection. This approach allowed the existing storm drains to remain in place with no retrofitting required.

ELEVATED CYCLE TRACK

The elevated cycle track is a 6" raised track above road elevation. This approach provided cost for the concrete elevated track and the potential storm sewer retrofits that link the current storm sewer system to the proposed curb edge to effectively capture the roadway storm water.

HYBRID ELEVATED CYCLE TRACK

The hybrid elevated cycle track only took into account the implementation of the east side of the Burlington Corridor. This provided the cost to review a potential phase-1 approach by installing only east side improvements.

The preferred approach is the elevated cycle track. The table below illustrates the block by block cost for the entire project for all three cost opinions.

SEGMENT DESCRIPTION	Extension
10TH - 12TH	$ 1,983,643
12TH - 13TH	$ 541,662
13TH - 14TH	$ 752,717
14TH - 15TH	$ 609,890
15TH - 16TH	$ 829,636
16TH - 18TH	$ 927,688
18TH - ARMOUR	$ 1,228,697
ARMOUR - 20TH	$ 597,821
20TH - 21ST	$ 557,789
21ST - 23RD	$ 709,603
23RD - 26TH	$ 1,104,571
26TH - 29TH	$ 733,339
29TH - 32ND	$ 759,618
2016 Engineer's Estimate Sub-Total	**$ 11,336,671**
Contingency (20%)	**$ 2,267,334**
2016 Engineer's Estimate of Construction Cost	$ 13,604,005
MOBILIZATION (4%)	$ 544,160
Private Utility Relocation - Project Costs (2%)	$ 272,080
Design Engineering Consultant (10%)	$ 1,360,401
Construction Phase Services/Inspection (7%)	$ 952,280
TOTAL - Non-Construction project costs	**$ 3,128,921**
TOTAL PROJECT COST	**$ 16,732,926**

FIGURE 4.13 NON-ELEVATED CYCLE TRACK COST OPINION

SEGMENT DESCRIPTION	Cost
10TH - 12TH	$ 1,967,438
12TH - 13TH	$ 578,557
13TH - 14TH	$ 759,667
14TH - 15TH	$ 621,610
15TH - 16TH	$ 837,226
16TH - 18TH	$ 938,363
18TH - ARMOUR	$ 1,235,822
ARMOUR - 20TH	$ 602,411
20TH - 21ST	$ 561,374
21ST - 23RD	$ 717,573
23RD - 26TH	$ 1,100,301
26TH - 29TH	$ 757,859
29TH - 32ND	$ 776,053
2016 Engineer's Estimate Sub-Total	**$ 11,454,251**
Contingency (20%)	**$ 2,290,850**
2016 Engineer's Estimate of Construction Cost	$ 13,745,101
MOBILIZATION (4%)	$ 549,804
Private Utility Relocation - Project Costs (2%)	$ 274,902
Design Engineering Consultant (10%)	$ 1,374,510
Construction Phase Services/Inspection (7%)	$ 962,157
TOTAL - Non-Construction project costs	**$ 3,161,373**
TOTAL PROJECT COST	**$ 16,906,474**

FIGURE 4.14 ELEVATED CYCLE TRACK COST OPINION

SEGMENT DESCRIPTION	Cost
10TH - 12TH	$ 1,819,988
12TH - 13TH	$ 402,721
13TH - 14TH	$ 443,545
14TH - 15TH	$ 452,018
15TH - 16TH	$ 529,693
16TH - 18TH	$ 737,755
18TH - ARMOUR	$ 1,002,099
ARMOUR - 20TH	$ 517,787
20TH - 21ST	$ 430,861
21ST - 23RD	$ 480,076
23RD - 26TH	$ 717,223
26TH - 29TH	$ 615,859
29TH - 32ND	$ 636,053
2016 Engineer's Estimate Sub-Total	**$ 8,785,676**
Contingency (20%)	**$ 1,757,135**
2016 Engineer's Estimate of Construction Cost	$ 10,542,811
MOBILIZATION (4%)	$ 421,712
Private Utility Relocation - Project Costs (2%)	$ 210,856
Design Engineering Consultant (10%)	$ 1,054,281
Construction Phase Services/Inspection (7%)	$ 737,997
TOTAL - Non-Construction project costs	**$ 2,424,846**
TOTAL PROJECT COST	**$ 12,967,657**

FIGURE 4.15 HYBRID ELEVATED CYCLE TRACK COST OPINION

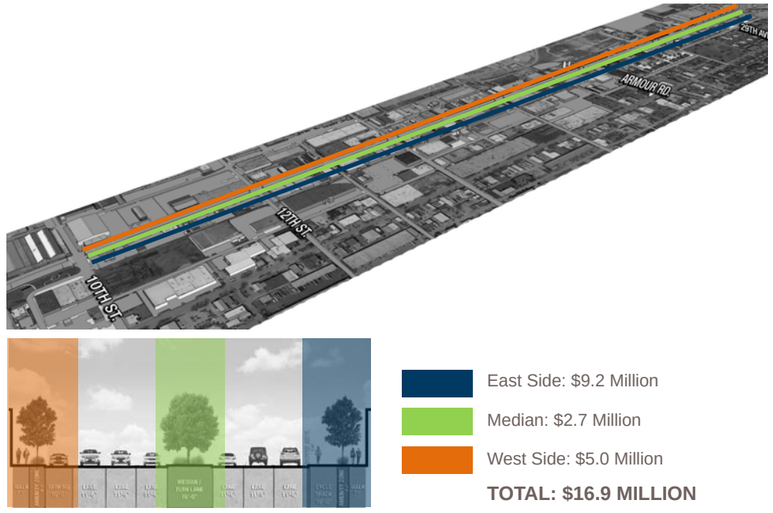


FIGURE 4.16 EAST / WEST SCENARIO 1

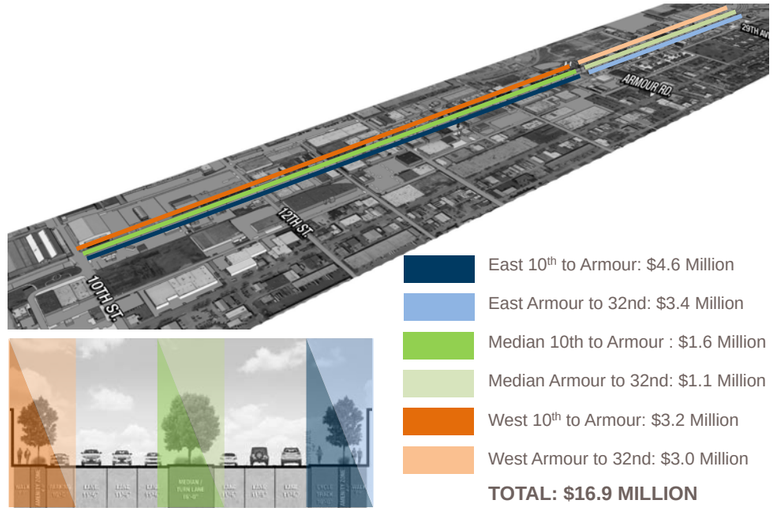


FIGURE 4.18 EAST / WEST SCENARIO 2

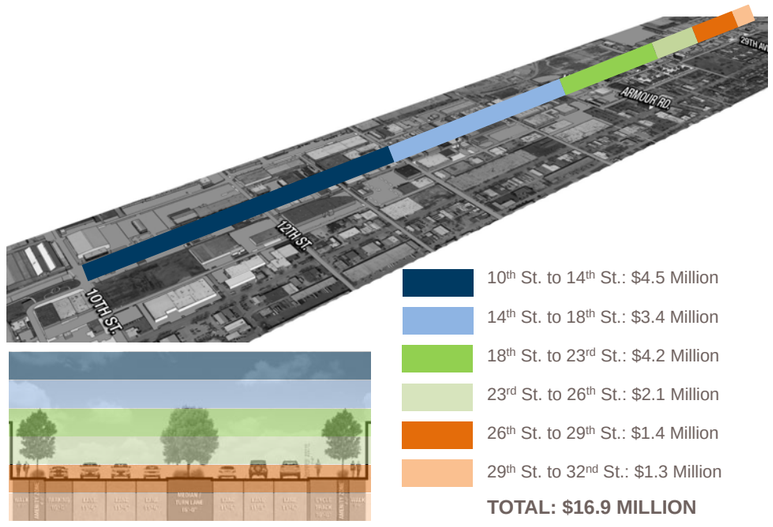


FIGURE 4.17 NORTH / SOUTH SCENARIO 1

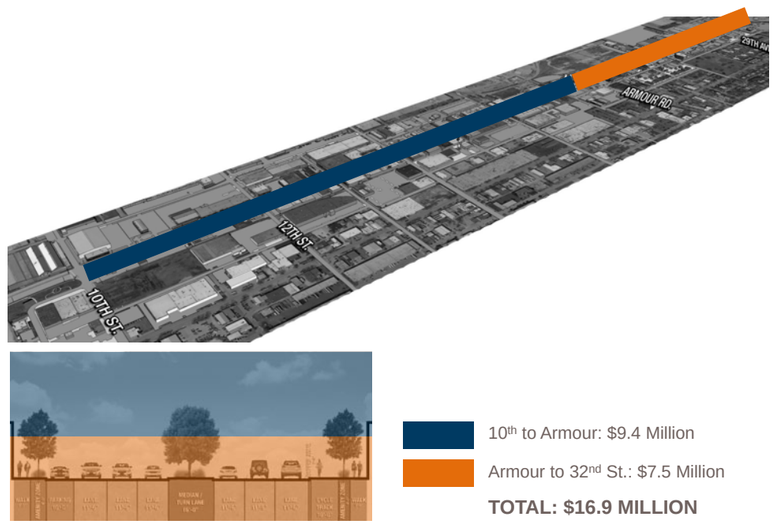


FIGURE 4.19 NORTH / SOUTH SCENARIO 2

PHASING OPPORTUNITIES

Numerous phasing options were studied and presented to the Advisory Committee for review and consideration. Phasing of this long corridor is critical in developing the plan for implementation. The phasing options include:

- East/West
  - Scenario-1
  - Scenario-2
- North/South
  - Scenario-1
  - Scenario-2

EAST / WEST PHASING STRATEGY

Scenario 1

The East/West phasing approach breaks the corridor into three phases – East Side, Median and West Side. The Advisory Committee preferred the East/West phasing as it allows phase-1 of scenario 1 to take the cycle track the entire length of the corridor – making the median and west side improvements future phases as funding became available. The cycle track as part of phase-1 will help secure funding resources and make a substantial impact for the corridor – setting the stage for future phases.

EAST / WEST PHASING STRATEGY:

Scenario 2

Scenario 2 for East/West is still divided out into three phases (East Side, Median and West Side) with the idea of finishing the East Side, Median and West Side up to Armour Road first, then continuing north of Armour once the other three phases south are completed.

NORTH / SOUTH PHASING STRATEGY

Scenario 1

This approach segments the corridor in phases from 10th Avenue going north as funding allows. The improvements would be the entire corridor for the entire ROW width. This allows the City to build the corridor in stages but lacks the connectivity and the effectiveness that they cycle track can have on the corridor with the segmented approach.

Scenario 2

Scenario 2 develops a phasing plan that provides all streetscape improvements from 10th Avenue to Armour Road. This approach provides a critical mass of improvements for Phase-1. Phase-2 and future phases would be north of Armour Road to 32nd Avenue.

BURLINGTON CORRIDOR PRIORITIES

The planning team asked the Advisory Committee members to fill out their preferences as it pertains to the next steps for the Burlington Corridor. Committee members provided input on their overall support for the Burlington Corridor vision, the future branding preference of the corridor, streetscape components and their overall preference for implementation and phasing strategy. The results of each question are illustrated on this page.

QUESTIONNAIRE

QUESTIONS:

1. Please indicate your preference for the use of branding/identification signage. Should it be focused more on identifying Burlington, on identifying North Kansas City, or a combination of both?

0 1 2 3 4 5 6 7 8 9 10

BURLINGTON FOCUS — *NORTH KANSAS CITY FOCUS*

2. Please indicate your level of support for the proposed corridor improvements:

0 1 2 3 4 5 6 7 8 9 10

NO SUPPORT — *STRONG SUPPORT*

3. Please rank the following 10 components for improving the Burlington Corridor, with **1** being your highest priority and **10** being your lowest priority:

____ Median Replacement / Rain Garden
____ Street Trees and Landscape
____ Site Furnishings and Streetscape Amenities
____ Branding / Identification Signage
____ Streetlight Replacement
____ Pedestrian Lighting
____ Cycle Track Construction
____ Thematic Industrial Art Elements
____ Transit Features
____ Downtown NKC Gateway Feature at Armour

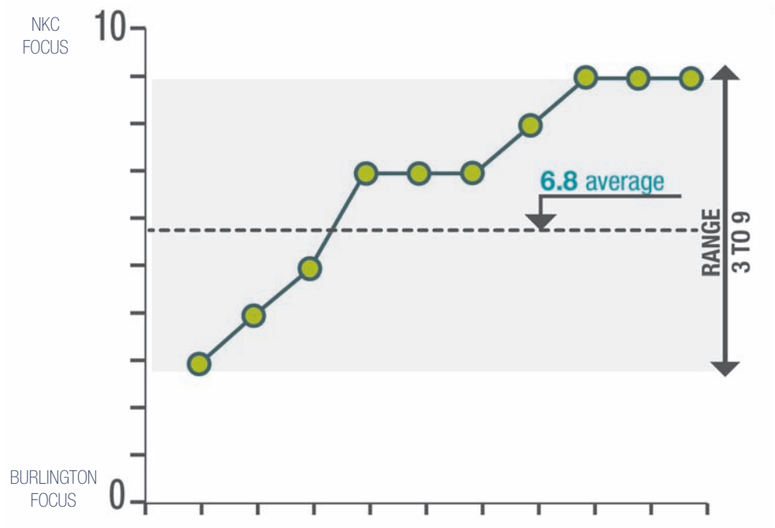
4. Please indicate your preference for a construction phasing strategy:

0 1 2 3 4 5 6 7 8 9 10

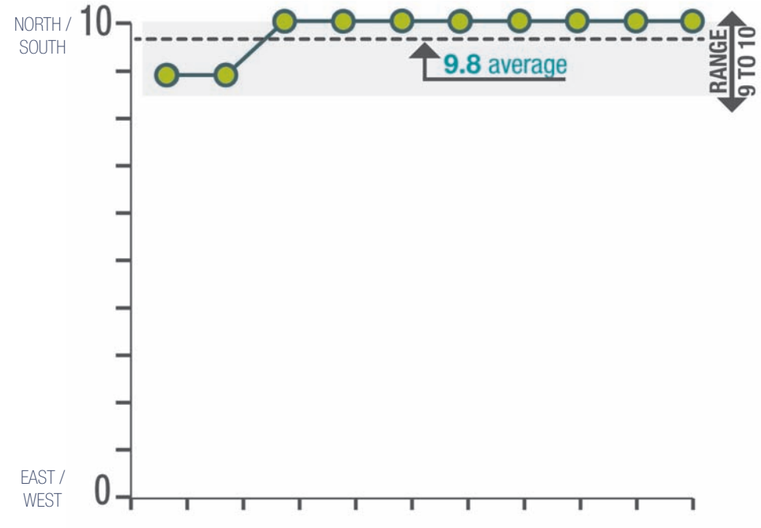
EAST / WEST SCENARIO — *NORTH / SOUTH SCENARIO*

FIGURE 4.20 QUESTIONNAIRE

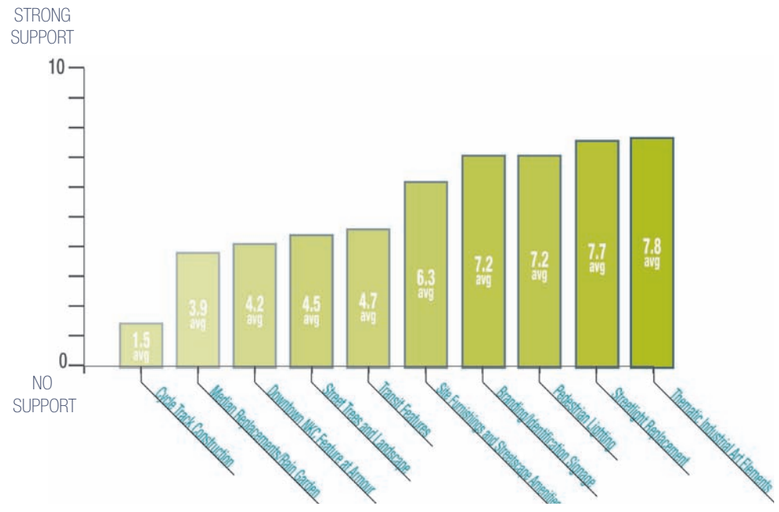
QUESTION 1: Please indicate your preference for the use of branding/identification signage. Should it be focused more on identifying Burlington, on identifying North Kansas City, or a combintation of both?



QUESTION 2: Please indicate your level of support for the proposed corridor improvements.



QUESTION 3: Please rank the following 10 components for improving the Burlington Corridor, with 1 being your highest prioirty and 10 being your lowest priority:



QUESTION 4: Please indicate your preference for a construction phasing strategy:

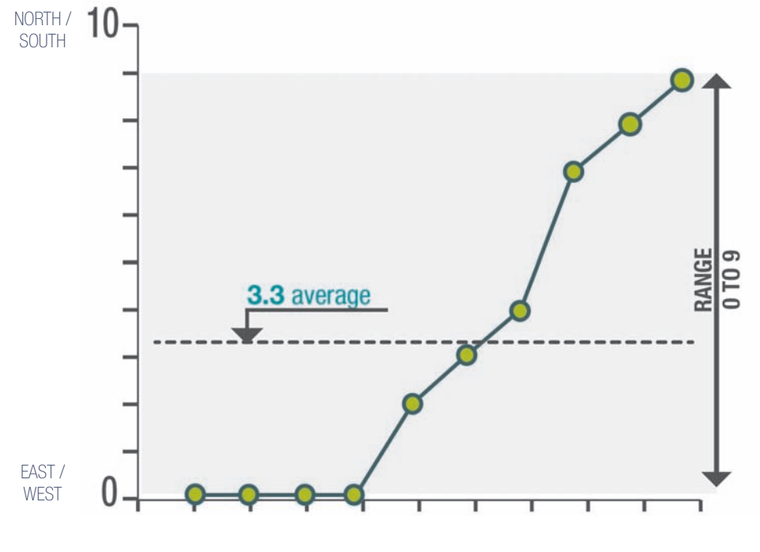


FIGURE 4.21 QUESTIONNAIRE RESULTS

FUNDING STRATEGIES

Understanding that the City has limited sources from which to generate capital for implementation, additional strategies should be utilized to pursue assistance and/or funding. Efforts should also be made to prioritize which public improvements are desired to be implemented initially, and to advocate for their consideration and inclusion in the City's Capital Improvements Plan (CIP), which prioritizes the construction of future public infrastructure improvements. Leveraging available capital funds as part of a larger overall project effort will likely improve the opportunities for securing additional public funds and provide for quicker realization of the vision for the Burlington Corridor. The table below describes several sources of funding that may be potentially available for the project.

FEDERAL

Most of the federal funding sources are administered through the Missouri Department of Transportation (MoDOT) and the Mid-America Regional Council (MARC). Most, but not all, of these funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections.

SURFACE TRANSPORTATION PROGRAM (STP)

The STP provides states with flexible funds which may be used for a wide variety of projects on any Federal-aid Highways including the NHS, bridges on any public road, and transit facilities. Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as non-road facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. The modification of sidewalks to comply with the requirements of the Americans with Disabilities Act is also an eligible activity.

TRANSPORTATION ENHANCEMENTS (TE)

This program funds projects that serve a transportation need and can be used to build a variety of pedestrian, bicycle, streetscape and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems.

CONGESTION MITIGATION AIR QUALITY (CMAQ)

Funds are used to pay for transportation projects, including bicycle and pedestrian improvements that improve air quality.

SAFE ROUTES TO SCHOOL (SR2S)

Grants are used to identify and reduce barriers and hazards to children walking or biking to school. This program includes funding for construction.

NATIONAL HIGHWAY SYSTEM (NHS)

This program funds improvements to rural and urban roads that are part of the NHS, including the interstate system. Bicycle and pedestrian facilities within NHS corridors are eligible activities for NHS funds.

HIGHWAY SAFETY IMPROVEMENT PROGRAM

Funds projects designed to achieve significant reduction in traffic fatalities and serious injuries on all public roads and pedestrian/bike pathways.

FEDERAL TRANSIT ADMINISTRATION (FTA)

The FTA funds could be used for various elements of the Burlington Corridor plan. In addition to traditional transit projects, including intermodal facilities such as bicycle parking at park and ride and transit stations, these funds can be used to secure right-of-way for transit/rail corridors.

CITY/COUNTY

DEVELOPMENT FUNDS

Tax Increment Financing (TIF) Plan areas, Transportation Development Districts (TDD) and Community Improvement Districts (CID) capture tax increment or additional taxes for the benefit of the project area. These funds are eligible for corridor infrastructure improvements.

GENERAL FUNDS

Trails Tax: There are numerous taxing tools available for trail development that can be used individually or in combination:

- Sales tax
- Property tax
- Gas tax
- Specific purchase tax (e.g., bike purchases)

Combined Tax

A combined tax initiative also presents opportunities for securing corridor improvement funding. Incorporating corridor development into other City programs. Other programs may be large enough that including the corridor improvements doesn't perceptibly change the magnitude of the tax, yet will make the overall tax package more attractive to the public.

Real-Estate Transfer Fee

A real-estate transfer fee could be charged for each real-estate transaction recorded within the corridor to generate funding. The amount generated, based on rates from other municipalities that have implemented a similar fee would not be significant, but could be used for specific funding needs.

City-County Partnerships

The Burlington corridor is part of a larger system that includes priorities of Clay, Platte and Jackson Counties. North Kansas City must collaborate with County agencies to more effectively build out the regional system and help each entity achieve mutual goals. Clay and Platte County have dedicated funding that can be used for trails.

VOLUNTEERS, CORPORATE AND CIVIC RESOURCES

Non-profit partners: Kansas City River Trails, Inc. is an excellent example of how civic volunteer groups can promote and develop trails in a city. This non-profit entity has worked collaboratively with various City departments for funding and implementation assistance and has used its private status to acquire matching corporate funds and grants that the City may not have been able to obtain.

Local Foundations

Local foundations aligned with sustainability, greenways, exercise, trails or bicycling may provide a source of private funds.

Individual Sponsorships

Individuals, businesses, or corporations may be interested in sponsoring elements of the project. Naming rights, plaques or other forms of recognition are typically placed on constructed pieces in the corridor. Sponsorship is also a good way to fund corridor elements such as benches, trash receptacles, and interpretive areas.

A STRATEGICALLY FLEXIBLE CORRIDOR PLAN

One of the primary benefits of this overall design and planning approach for reconfiguring and revitalizing the Burlington Corridor is that it provides flexibility for future transportation connectivity and transit planning. This corridor is ideally located as a vital transit connector serving North Kansas City and other established areas of the Northland. This Complete Street Plan has been crafted to balance the needs of vehicular traffic today, as well as the anticipated needs of expanded transit service in the future – allowing the corridor to become the Kansas City metropolitan area's most complete street in existence.

This design approach can eventually support enhanced bus service, bus rapid transit (BRT) service, and other fixed-guideway transit service (streetcar or light rail). These bus service improvements can occur with no change to the proposed roadway configuration, and the new stations can be designed to eventually support these service offerings with integrated technology, conduits, and other related infrastructure improvements that allow future adaptability and upgrades.

By strategically relocating the existing traffic signals and streetlighting improvements from numerous locations in the medians along this corridor, this design approach provides a significant opportunity to eventually integrate a streetcar or light-rail transit service utilizing the median. Should the need or desire for this new transit service eventually become more important than maintaining three vehicular travel lanes in each direction, the roadway can be reconfigured in the future to utilize the median and the adjacent southbound lane for a wider corridor that can support rail and transit station construction, as well as the potential for vehicular left turn lanes as needed along the corridor. This new transit service can either be extended further north either along 9 Highway to the west and/or along the North Oak Trafficway corridor to the east.

In similar fashion, the northbound lane on the eastern side of the corridor can also be reconfigured to eventually become designated on-street parallel parking to further buffer the cycle track from vehicular travel lanes. The pedestrian-friendly curb "bump-outs" at each intersection could be expanded at key intersections and locations to better define this parking area and travel lanes.

This overall corridor strategy can eventually result in providing wider pedestrian walkways and on-street parallel parking on the east and west sides of the corridor, a cycle track that better connects North Kansas City and other areas of the Northland over the Missouri River, two lanes of vehicular traffic in each direction, and the ability for fixed-guideway transit service to be accommodated in the median along this corridor.

Due to this area's close proximity to Downtown Kansas City and its strategic location at the gateway to the Northland, this corridor has amazing potential. It can serve the community's future transportation needs while simultaneously becoming a hub for future mixed-use and high-density residential and commercial development that allows North Kansas City to continue to grow sustainably to meet the community's needs – today and tomorrow. The time has come to invest in its future, and to see its potential realized.

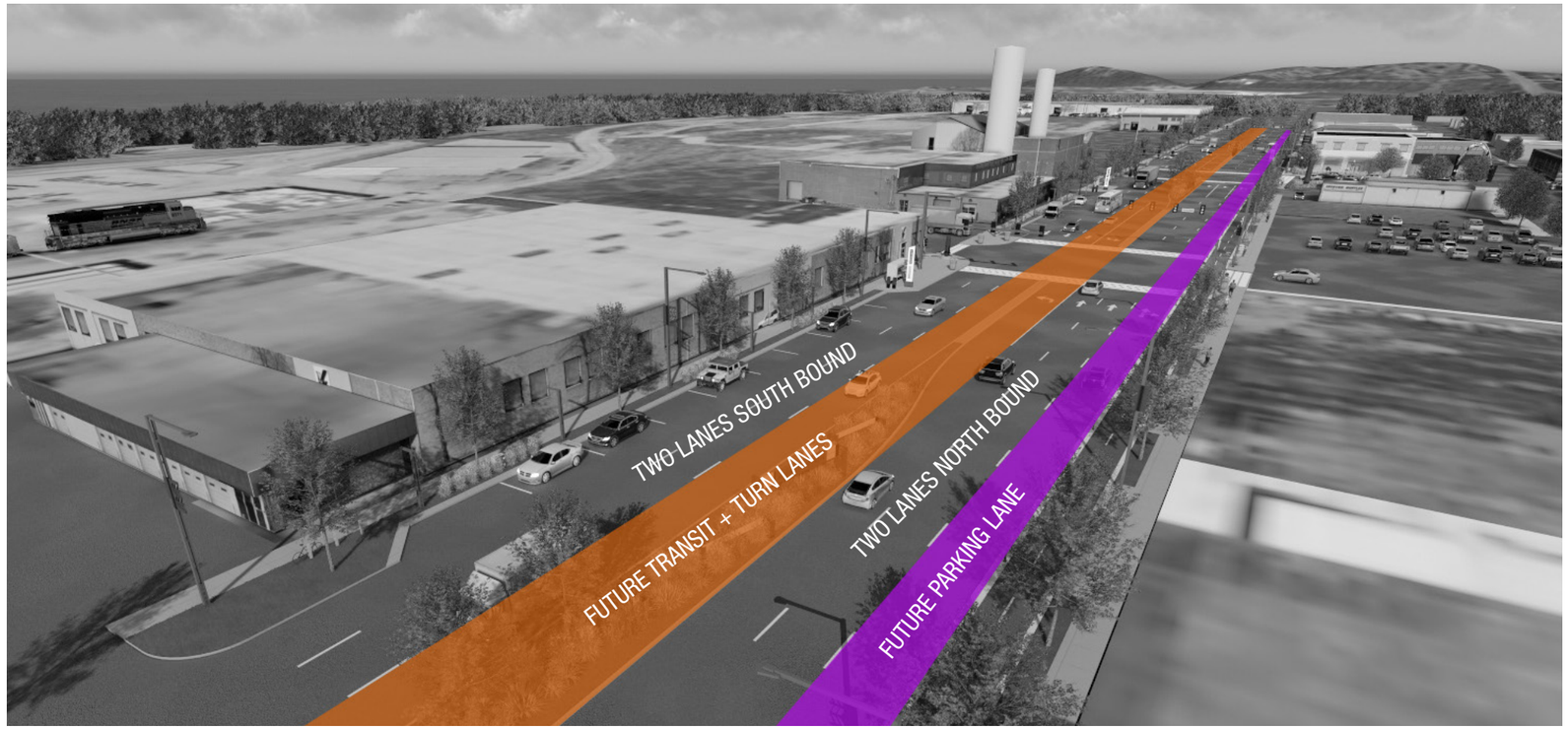


FIGURE 4.22 BURLINGTON CORRIDOR - FUTURE SCENARIO