I-70 LOOP CORRIDOR PLAN

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01 | EXECUTIVE SUMMARY

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The Loop Corridor Plan was developed as a new vision for the future of the I-70 Business Loop Corridor. The Loop Community Improvement District (C.I.D.) saw the need to improve the Loop's identity and place within the broader Columbia community. The Loop Corridor Plan is a 10-year vision which will allow the corridor to compete in the marketplace for investment and long-term viability. **The plan is conceptual and will require the collaboration and agreement of property owners before any implementation will occur.**

The planning process was initiated with the following goals, as developed by the C.I.D., to lead to a final plan vision:

-Establish an identity for The Loop Corridor
-Long term vision to guide future public/private development
-Improve the aesthetics and attractiveness of the built environment
-Create a multi-modal street for transportation
-Improved vehicular traffic circulation and management
-Increase connectivity to surrounding areas
-Attract business/customers, visitors, and investors

Analysis of existing conditions, public engagement, and extensive discussions with stakeholders led to the development of plan alternatives. Cross checking with the project goals and again with more discussion from key stakeholders, the alternatives were then revised and summarized into a final plan vision. The plan will take many years to implement, with collaboration among many partners. The following lists of improvements include both threshold projects which can be implemented immediately and longer-term projects which will require years. A summary of the project improvements are provided below with more detail within the body of the report.

1: Threshold Projects – Utilizing graphics, landscaping and site furnishings implement threshold projects, easy, quick, and inexpensive to implement, to serve as visible demonstrations of the plan within 1-6 months. The project areas identified in the plan (College Avenue, Providence Road, and Madison Street) are just the initial three areas which can provide a sense of place and foster identity for the Corridor.

2: Graphic Design/Identity Projects – Create corridor identity by incorporating colors, icons and artwork which reflect the history, uniqueness, businesses, and people of the Loop. Utilize existing branding efforts of the C.I.D. of the Loop icon and color palette on signs, street banners building murals, wayfinding signs and temporary signage. Enhance the existing roundabout at the west end with a signature sculpture, lighting, and landscaping to establish a highly visible gateway for the corridor.

3: Bicycle Network Improvement – Improved accessibility and safety for bicyclists was an important goal of many stakeholders and the public. The proposed plan will provide a buffered, on-road bike lane (5' wide) in each direction, within the curb line of the street. A physical barrier was proposed to protect the bike lanes with an intermittent rumble strip between the outer driving lanes and bike lanes, allowing for ease of access to adjacent properties by vehicles.

4: Pedestrian Network Improvements – It is an important goal that ADA-compliant sidewalks are available throughout the entire corridor, on both the north and south sides of the street. This will require replacement of sidewalk in poor condition, adding sidewalk/ramps where there are gaps, replacement or modification of existing ramps, etc….Sidewalk connections from intersecting streets, especially to the south of the corridor should also be implemented, in collaboration with the City of Columbia and their Sidewalk Master Plan. The goal of developing a uniform sidewalk and bikeway plan is more practically achieved if the City advances its commitment to the continued under-grounding of utilities east of Providence Road to College Boulevard.

5: Corridor Stormwater Plan – Develop a corridor wide stormwater plan which will collectively manage stormwater for the Loop, while providing an attractive development incentive for redevelopment. Utilizing off site detention facilities (mainly north of the corridor, next to I-70) the redevelopment properties on the Loop would have more flexibility in layout, programming, and design, thus serving as an incentive for developers to invest in the Loop.

6: Access Management – The street edge of the Business Loop needs a more pronounced edge for better aesthetics, pedestrian networks, and traffic

management. Consolidation of existing driveways and curb cuts is proposed to help alleviate traffic congestion and minimize conflict points between vehicles and pedestrians. Approximately 38% of the existing driveways are proposed to be consolidated, while still allowing access to the properties through existing or newly proposed driveways from adjacent streets. The proposed access management improvements could possibly include proposed roundabouts, on the horizontal alignment of the Loop Road, at the intersections of Rangeline Street and Garth Avenue or improvements to the existing intersections.

7: Streetscape Enhancements – Improve the aesthetics and beautification of the Loop road by implementing a streetscape design of street trees, lighting, landscaping, and public art. Utilize native landscape and hardy species to add color, texture, and seasonal interest to the street. Street trees will provide a green vertical edge and greatly improve the image of the corridor.

8: Placemaking Plans – Collaborate with private and public property owners to create places along the corridor which will be destinations for people of the Loop and greater Columbia communities. These spaces will activate the street with pedestrians creating a more vibrant, economically sound, and safer street. The identified project areas range from smaller initiatives like a Food Truck/Pop Up Festival Lot on the east end and an interpretive garden on the Hickman High School property. The other placemaking areas include larger programs for open space creation at Parkade Center; enhancing the open space at Mizzou North along the Loop road to creating a new gateway park and development at Rangeline Street and North Avenue.

9: Formalized Corridor Plan – Advocate for a Formalized Loop Corridor Plan to be officially adopted by the City of Columbia. The Corridor Plan would serve as a supplemental plan to the city's comprehensive plan, guiding civic planning efforts for the corridor. A formalized plan will allow the Corridor to compete with other areas of the City for grants and municipal funding programs.

10: Redevelopment Plans – Identify properties within the Corridor which are potential redevelopment areas. Collaborate with property and business owners on developing detailed site plans which could propose parcel consolidation, new building footprints, existing building improvements and improved site layouts. Utilize the redevelopment plans to promote economic development and investment opportunities within the Corridor.

Affirmation Statement

The Loop Corridor Plan is a vision for the future of the Business Loop Corridor which will allow the corridor to compete in the 21st century marketplace for investment. The conceptual plan was produced by the Loop Community Improvement District (C.I.D.) with extensive stakeholder input and support. The C.I.D. and it's key stakeholders are committed to implementing the conceptual plan for a more vibrant, sustainable and growing Business Loop Corridor.

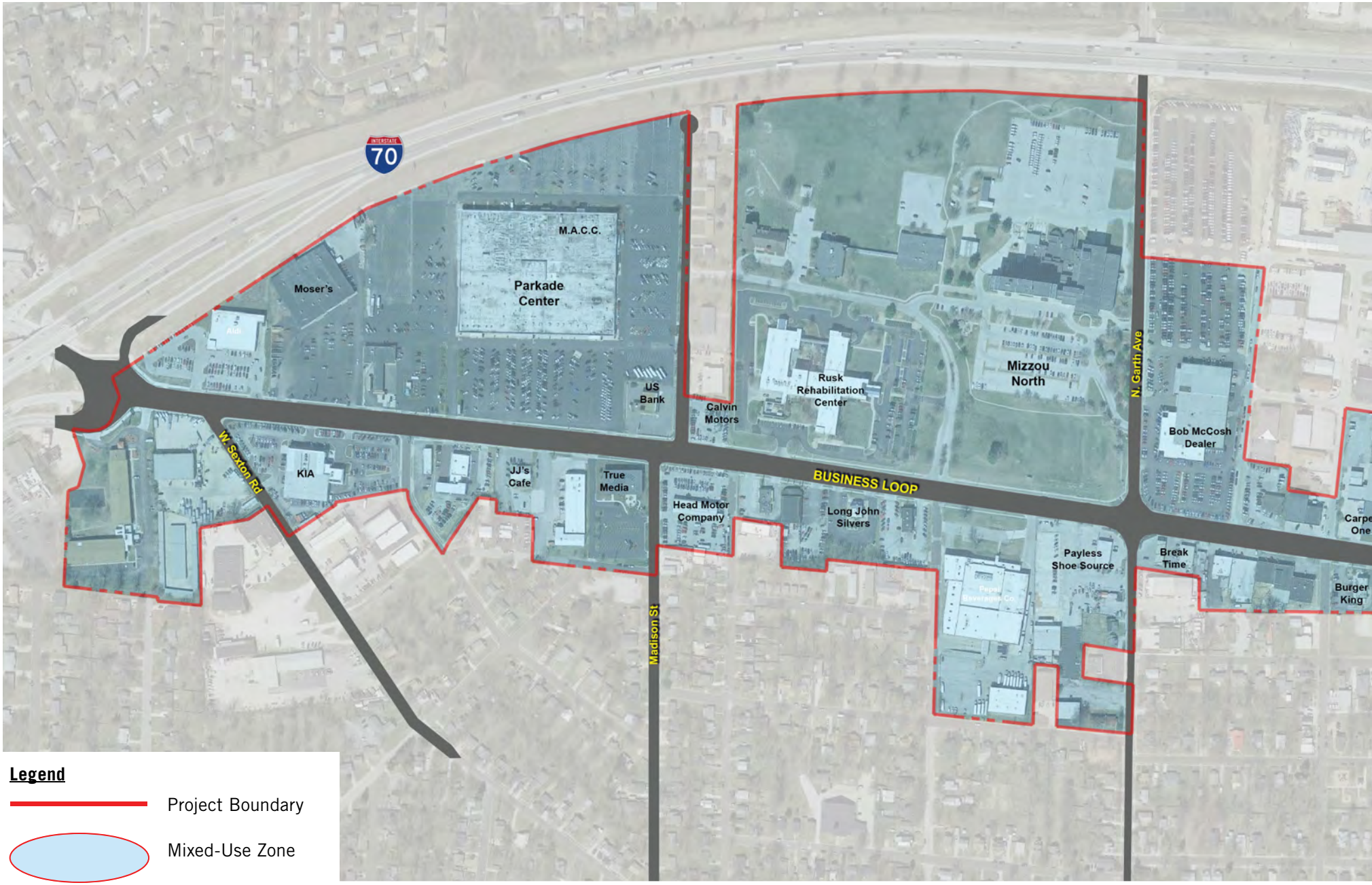
Any proposed improvements will be facilitated to have minimal impacts to private property and will avoid creating "left-over" or parcels which are not usable due to size, access and visibility. All property owners are to be fairly compensated for any property impacts. Any adverse effect on properties will also be mitigated through enhancements such as landscaping, signage and lighting. Infrastructure improvements will only be proposed to help improve the Loop's transportation and circulation, ADA compliance, aesthetics and overall Corridor identity.

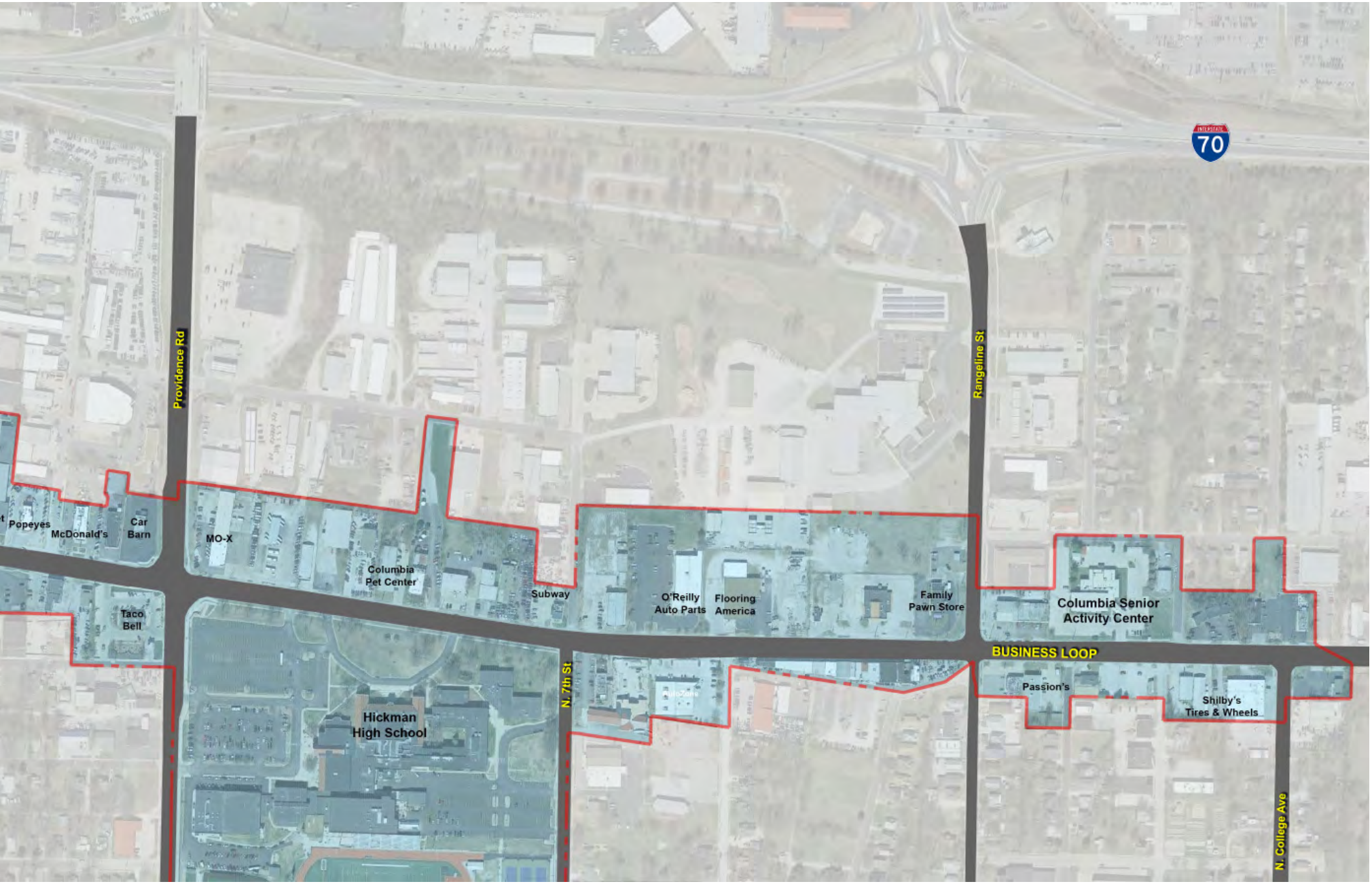
The plan will be implemented with the initial steps of transforming the Planning Committee into a Steering Committee, which will conduct a transparent and open process, implementing the plan. The Steering Committee will collaborate with property owners and institutions on the Loop, to build consensus on initiatives of the conceptual plan.

An action item of the Corridor Plan will be to attain formal adoption of the plan by the City of Columbia. The adoption process will give the plan official classification and recognition as part of the City's land use plan. This recognition is important to compete for future programming and funding initiatives which the City will use for public improvements.

The C.I.D. and Steering Committee are committed to collaborate with the City, within the existing community planning processes, to develop the best classification for the Loop Corridor Plan. The C.I.D. and Steering Committee would also seek flexibility in regulations and codes (i.e. Unified Development Code) to create an attractive development and redevelopment market for the property on the Loop. The ultimate goal of the Loop Corridor Plan and subsequent efforts of the C.I.D. and Steering Committee will be to leverage genuine partnerships and creative planning to transform the Business Loop Corridor into a thriving, attractive and vibrant district in the City of Columbia.

Corridor Conceptual Plan




70
Providence Rd
Rangeline St
Popeyes
McDonald's
Car Barn
MO-X
Columbia Pet Center
Subway
O'Reilly Auto Parts
Flooring America
Family Pawn Store
Columbia Senior Activity Center
Taco Bell
BUSINESS LOOP
N. 7th St
Hickman High School
Passion's
Shilby's Tires & Wheels
N. College Ave

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02 | PLANNING PROCESS

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The planning process for the Loop Corridor Plan was focused around achieving the goals set forth by the Loop Community Improvement District (C.I.D.), with the broader understanding to create a long-term vision for the Corridor.

The planning process started with the project team conducting a full analysis of existing conditions along the Corridor from the west end roundabout at I-70 all the way to College Avenue and the eastern edge of the C.I.D. Notes and photos were taken throughout the project area and then analyzed to determine which areas were in most need for improvement.

The west side of the corridor is more open, with new buildings, underground utilities and many thriving businesses, giving the corridor an updated look and more welcoming feel. The east side of the corridor still has overhead utility poles, some vacant buildings and limited evidence of new investment. The site inventory and analysis revealed a subtle, but growing, dichotomy between the west and east areas of the Corridor. The west end has more stable businesses and more conforming land uses while the east end has many properties for lease or sale, while also containing businesses which don't reflect the best image for the Corridor and the City of Columbia. The east end, as well as the west end, also contains many thriving businesses and institutions which have invested in their respective properties and continue to contribute to the Corridor area. Creating a vision which sustains the quality establishments on the Corridor, while fostering new investment was a primary goal of the planning process.

The C.I.D. had developed goals for the Corridor Plan which seek to address the issues facing the Loop in regard to land use, traffic, bicycle/pedestrian circulation, identity and beautification. Some of the main emphases of improvements to the Loop are to improve traffic circulation, increase connectivity, and to make the road more pedestrian and bike friendly. The project team developed a number of traffic and bike lane alternatives for consideration. Critical to the discussion was the relevance of the bike lanes and how they would be used. Project team and stakeholder discussion determined that an improved bicycle circulation network would be accepted by the community and be an essential component to the plan. Another important element of the plan developed with extensive discussion and evaluation was improving the access management of the roadway. Evaluation of the numerous driveway aprons on the road and how they impact traffic circulation was considered. A proposed consolidation of driveways, coupled with proposed roundabouts at Garth Avenue and Rangeline Street were evaluated as potential options to improve traffic circulation, in addition to pedestrian circulation on the roadway.

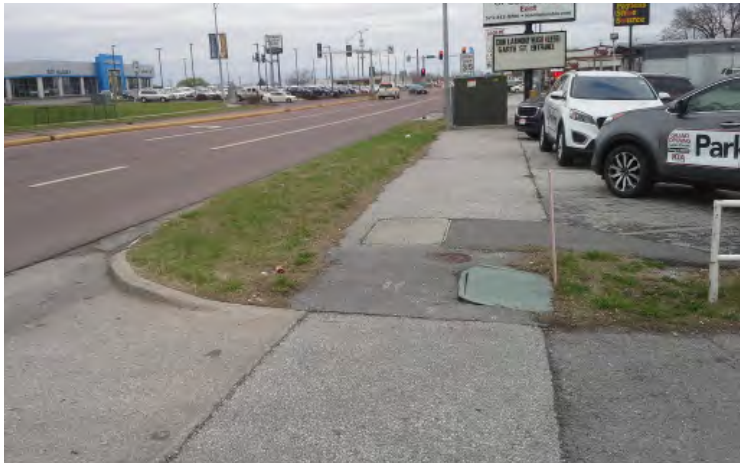
The planning process also developed a future vision on how to address stormwater on The Loop. The management of stormwater is a major development issue in the City of Columbia and the plan looked at numerous ways to address the issue.

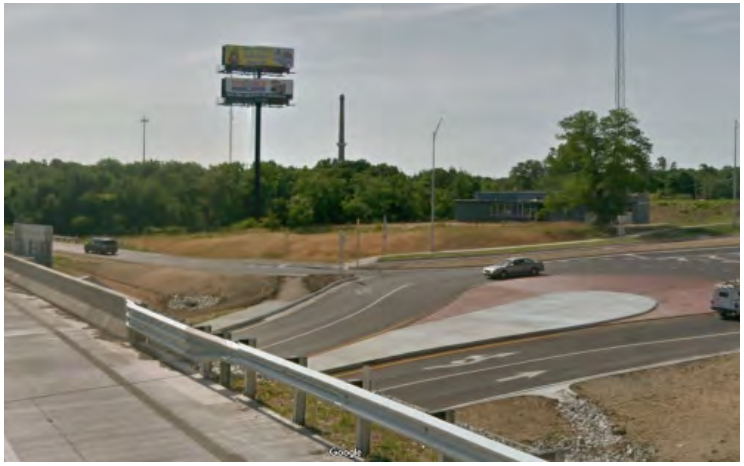
The Loop Corridor Plan also had a stated goal to enhance the identity of the I-70 Business Loop. The project team knew that attracting pedestrians to circulate and gather on the street was critical to enhancing the image of the roadway. A street with activities and spaces, with people, would help to change the image from an auto-centric roadway to a more people and places oriented corridor, with room for vehicles, pedestrians and cyclists. The Corridor Plan identified areas on the roadway where new spaces that are inviting to users of all ages will enliven the corridor and draw users from one end of the Corridor to the other. Various alternatives were developed during the planning process and after much review and discussion from stakeholders and the public, five Placemaking Focus Areas were selected for the plan.

The planning process, utilizing the identified goals from the C.I.D., along with analysis, stakeholder input and sound community planning principles, conducted a 6 month planning study, resulting in a thorough, creative and feasible vision for the Loop Corridor.

EXISTING SITE PHOTOS

- Variety of businesses, institutions and destinations
- High volume of vehicular traffic
- Limited landscape and green space on and off the street
- Lack of pedestrian networks and activity on the street
- Missing a sense of place and identity
- New infrastructure improvements on the west end
- Existing bicycle network facility is below standard and rarely used
- Many properties for lease/sale on east end
- Auto-centric street with limited spaces for pedestrians





Public Meeting Summaries

In an effort to build long term support and increased public awareness for the Loop Corridor Plan, the C.I.D. held public meetings, spoke with stakeholders, and utilized social media to engage their target audience for input on the plan. The goal was to come to a consensus with business and property owners on the needs for the Loop, proposed conceptual improvements and create awareness that a future vision was being created for the Loop.

The initial public meeting was conducted in early July 2017 to solicit input and announce the planning process, with over 70 people in attendance. The C.I.D. and project team hosted the first public open house to share the team's inventory and analysis of the corridor, showcase precedent ideas and listen the public's thoughts for Loop improvements. After the meeting, comments and notes were summarized and utilized in the development of concept plans for the Loop.

A project Visioning Meeting was held in mid August with property owners, business owners and public agency officials to review some of the initial concept plan ideas. The meeting offered key stakeholders the opportunity to comment on the initial plans for improvements. There were also in depth discussions on key issues such as bicycle network facilities, traffic access management and stormwater regulations. The meeting gave very good guidance to the planning team on the development of the concept plan alternatives which were presented at the second public meeting in early November.

The Loop Corridor Plan second public meeting, which attracted over 50 people, was held to allow the public to review and comment on the proposed improvements for the Corridor. Graphic boards showcasing analysis and the conceptual plans gave the public a chance to review the proposed ideas. Attendees also had the opportunity to fill out a comment form at these meetings, listing their respective thoughts on the plans. With even more feedback from the second public meeting, the project team refined the proposed concept alternative plans further, to create the final concept plans of the report.

Both public meetings were advertised using the social media venue of Facebook and the Loop website. Afterwards, these platforms were also used to convey links to an online survey with the graphics and narratives of the public meetings, allowing for additional input. This was utilized by a number of community members who were unable to attend the meetings. Between speaking with members of the community and gathering data from the surveys online, several topics had the most interest. The public saw the need for enhanced pedestrian and bike infrastructure, increased areas of landscaping, better commercial shopping options and creating public spaces to be used by all in the community. These concerns reflected some of the goals of the C.I.D. and were incorporated into the planning of the concept plans and final report.

July Public Meeting

November Public Meeting

November Public Meeting

November Public Meeting

Corridor Analysis and Diagram Overlay

A critical task in the Project Planning Process is developing a Programmatic Overlay Plan which accounts for the plan goals and program, along with the site inventory and analysis, resulting in resources which helps to guide the plan development.

The analysis of existing conditions was documented in a site inventory and analysis plan. This analysis considered many elements of the physical environment along the corridor. Such elements included the bicycle/pedestrian network, connectivity to adjacencies, viewsheds, vehicular circulation, drainage, land uses, landscaping, lighting and wayfinding, among others. Documented in an inventory and analysis plan, the evaluation helped to direct the project team to develop concepts which eventually became alternative plans for proposed improvements.

The project program of goals was developed by the Loop Community Improvement District (C.I.D.) and was confirmed by the project team early in the planning process. These goals which formed the project program were then considered in the context of the physical environment of the Loop. Applying the program as an overly with the site inventory and analysis resulted in a programmatic diagram overlay.

The follow pages illustrate the Programmatic Diagram Overlay plan showcasing important findings and opportunities for the corridor plan.

- Placemaking: The evaluation of land uses and pedestrian circulation networks, along with the identified goal of making the street more attractive for visitors and business, resulted in identifying five areas for enhanced public spaces and potential new development.
- Threshold Projects: The site inventory and analysis noted the lack of landscape, landmarks and general unattractive character of the existing street. Areas for threshold projects, immediate and with limited expense, can be implemented for tangible and impactful change.
- Stormwater: Knowing that stormwater management is an important and sometimes difficult development issue, areas along the street and off of the street were identified for stormwater basins which would benefit economic development and enhance sustainable design opportunities on the corridor.
- Bicycle/Pedestrian Circulation: The evaluation of the existing bike lanes and sidewalk facilities noted several areas which were below standard. Improving these facilities would greatly enhance the Loop to be multi-modal, connect to other areas, and foster an identity of being a more complete street for people as well as vehicles.
- Gateways: The site inventory noted that the linear corridor had numerous areas for major and secondary gateways which would help to define the boundaries and establish identity of the Corridor.
- Public Landscape: The stated goal of improving the aesthetics and attractiveness of the Corridor could be achieved in the public landscape along the parkway areas behind the curb and the broader right-of-way areas allowing for street trees, shrubs and perennials.

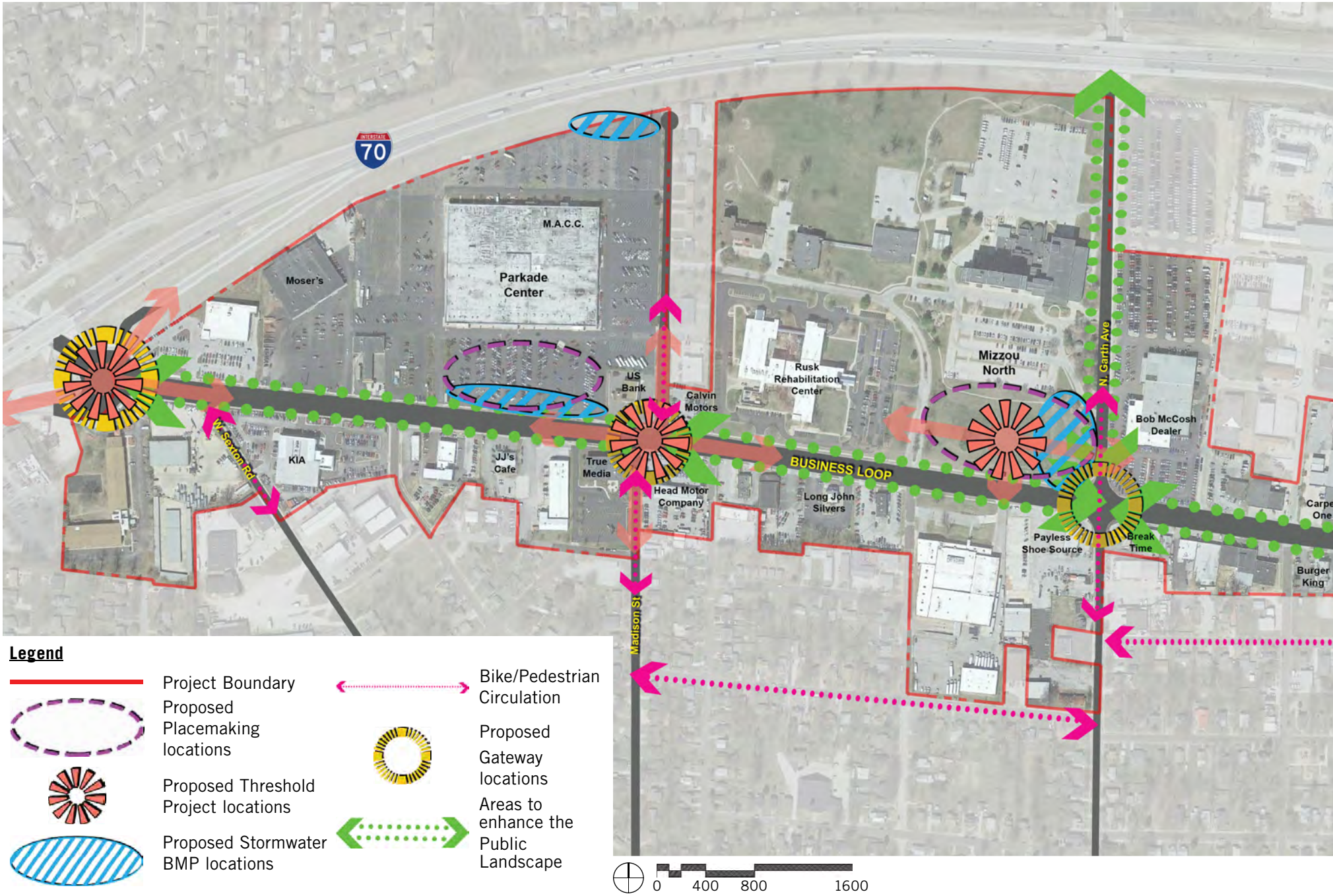
Site Inventory & Analysis Plan Graphic

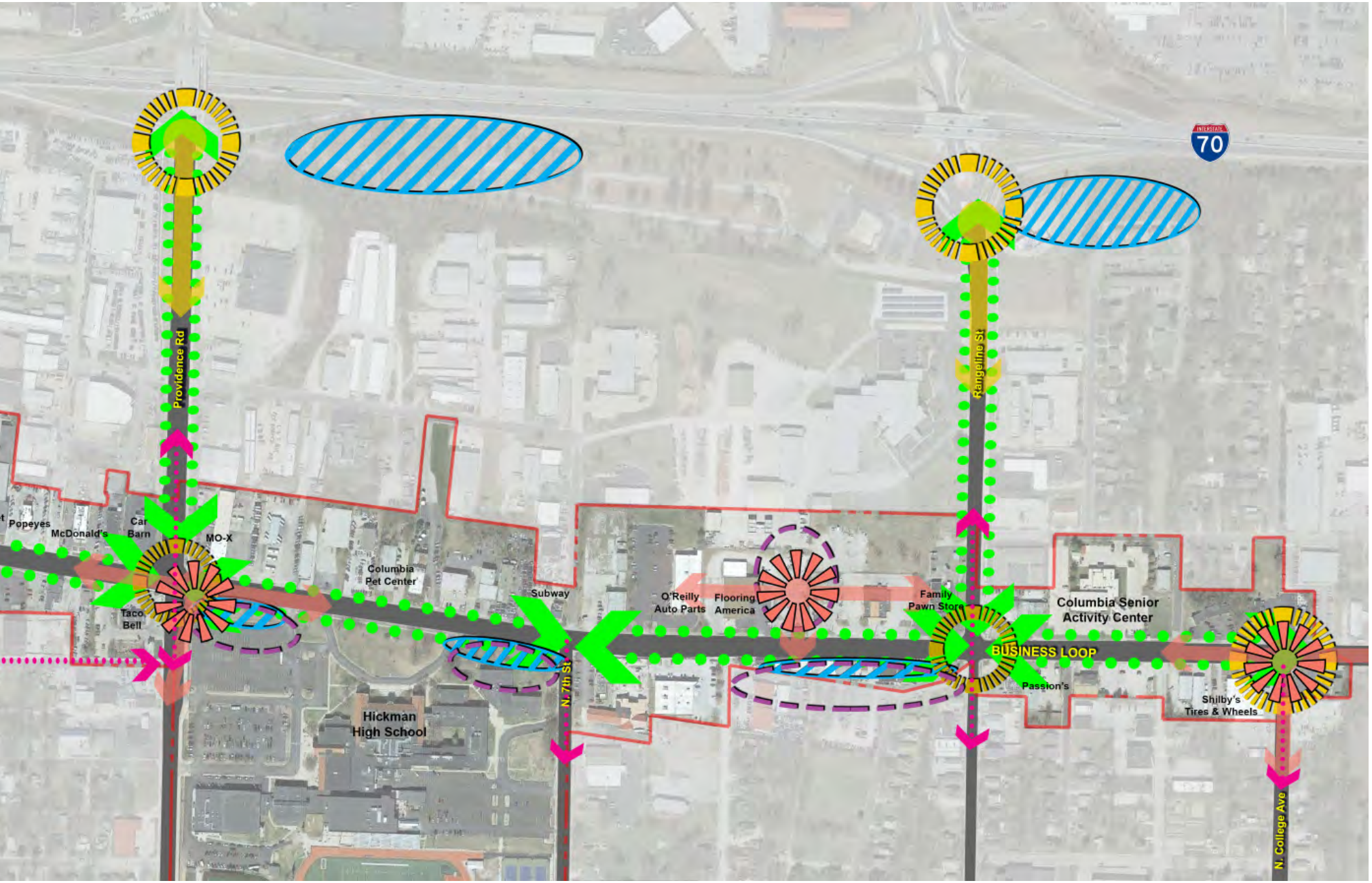
Site Inventory & Analysis Plan Graphic

July Public Meeting Presentation Board

July Public Meeting Presentation Board

Diagram Overlay




Providence Rd
Rangeline St
70
Popeyes
McDonald's
Car Barn
MO-X
Taco Bell
Columbia Pet Center
Subway
O'Reilly Auto Parts
Flooring America
Family Pawn Store
Columbia Senior Activity Center
BUSINESS LOOP
Passion's
Shilby's Tires & Wheels
Hickman High School
N. 7th St
N. College Ave

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03 | ENHANCEMENT PLANS

Bike/Pedestrian Circulation

A new bike/pedestrian network on the Loop is a critical component to activate the street, encourage alternative modes of transportation and will greatly enhance the image and identity of the Corridor. The goal is to strengthen the connection of the east-west transect and create a cohesive and connected system for those on bike and on foot, while still ensuring easy and direct vehicular access to businesses located along the Loop.

Currently, existing bike lanes do not offer a level of safety that is comfortable to most urban cyclists. As a result, the lanes are rarely used. A dedicated bike lane connection on the Loop will connect to north-south bike networks, which cross the Loop and provide for a better connection to points east-west of the Loop such as Stephens Lake Park and Cosmo Park. The existing pedestrian network is improving with the City installing new sidewalks, starting on the west end.

The existing on-road bike lanes on the Loop are painted, but not protected, and are challenging for all but the most experienced riders by the narrow lane widths of the driving lanes, the poor condition of the gutter-pan on parts of the corridor, and the large number of conflicts caused by driveways. Options to provide improved accessibility and safety for bicyclists was an important goal for many that expressed comments at the public meetings. The lack of available right of way (ROW) eliminates the option of off-road bike facilities. On-road bike facilities, with options of lanes on each side of the roadway, and with a two-directional bike lane on one side of the roadway, were reviewed.

It was decided that the preferred approach was to provide a buffered on-road bike lane in both directions. This option was preferred by the public and the perception that safety may be compromised by having bikes moving both directions on one side of the roadway. The factor that loomed largest in this analysis was the high concentration of driveways along The Loop. This issue also influenced the means by which the bike lane would be separated from the driving lane. Having a physical barrier, such as a curb or the use of flexible delineators, was problematic due to the number of breaks that would be necessary. This was expected to result in increased maintenance, and possibly challenge biker safety in a significant, though different, way than the challenge of having no bike lane protection at all. For the purposes of this report, it was proposed to protect the bike lanes with an intermittent rumble strip between the outer driving lanes and bike lanes, with breaks at roadway intersections and other regular locations to allow bikes to cross the street without having to drive over the rumble strips. New sidewalks are proposed to be a minimum of 5'-0" wide to meet ADA compliance.

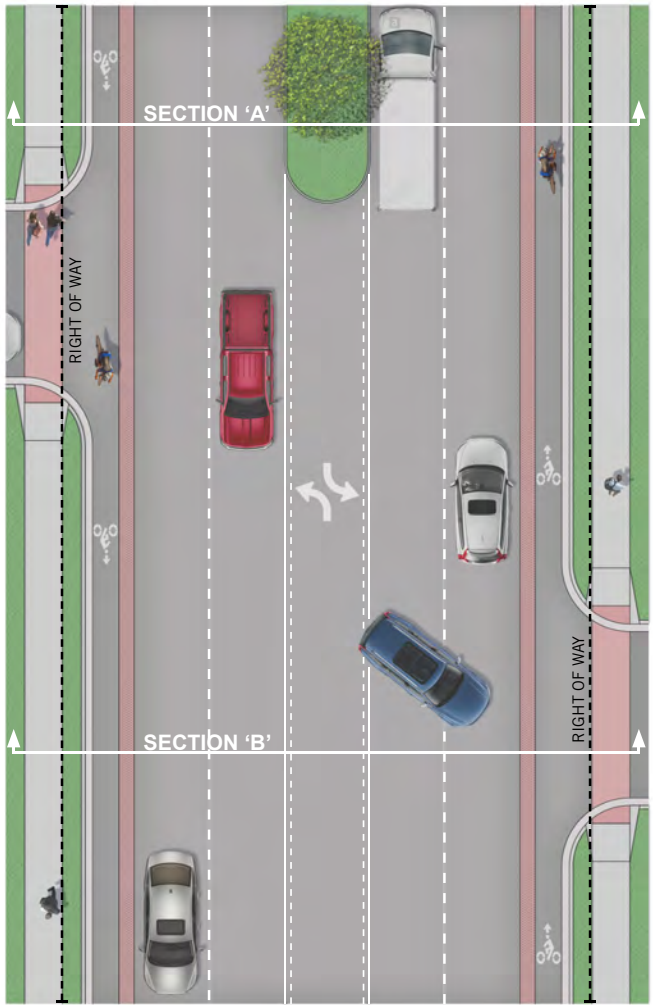
While numerous scenarios were considered, the plan recommendation is to install buffered one-way bike lanes per MoDOT and AASHTO standards. The lanes would be one way, 5' wide running parallel with the direction of vehicular traffic, and include 2'-0" minimum of separation. Several options for separation were considered and the rumble paver strip was favored, allowing for ease of vehicular movements across the bike lane to adjacent businesses and properties. This plan is conceptual and will require collaboration with property and business owners, the City, and MoDOT. An alternate is offered where parcels are smaller and the preferred option is too impactful. The alternate would eliminate the 3' landscape buffer and have the sidewalk abut the back of curb. This would minimize the impact to adjacent properties.

Precedent: Enhanced Pedestrian Network

Precedent: Bike Lane with Rumble Strip

Precedent: Bike Lane with Painted Separator Strip

Bike/Pedestrian Circulation Conceptual Plan
One Way Bike Lanes w/ Rumble Strip Divider



CONCEPTUAL PLAN VIEW

*Conceptual Only - Collaboration with property owners, business owners, City, and MoDOT required for implementation

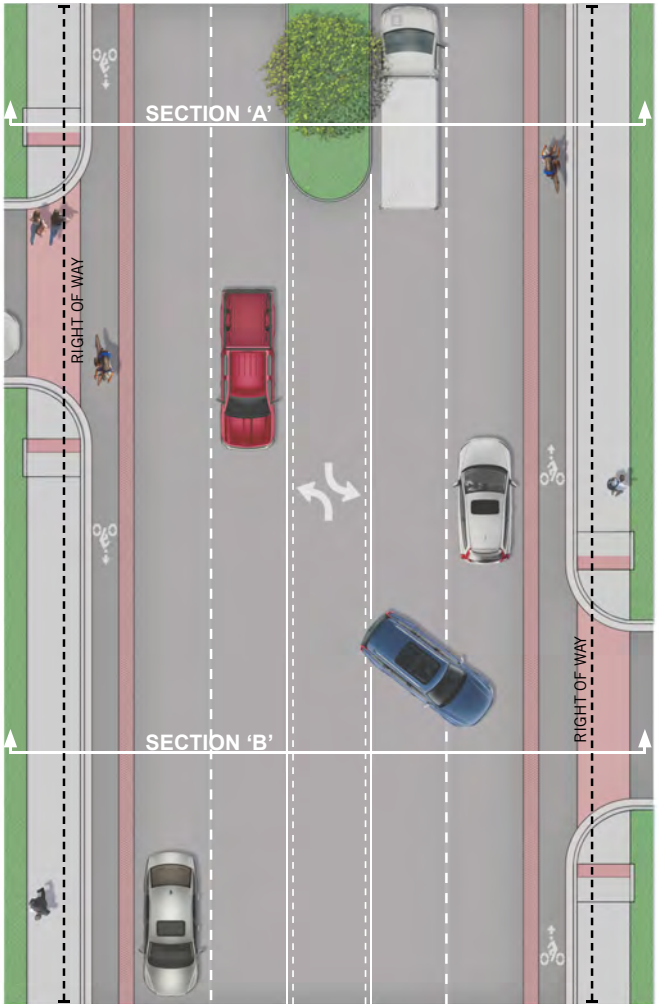
SECTION 'A' - Buffered One Way Bike Lane Each Direction w/ Landscape Median

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

SECTION 'B' - Buffered One Way Bike Lane Each Direction @ Curb Cut w/ Turn Lane

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

Bike/Pedestrian Circulation Conceptual Plan
One Way Bike Lanes w/ Rumble Strip Divider - Alternate Sidewalk Layout



CONCEPTUAL PLAN VIEW ALTERNATE

*Conceptual Only - Collaboration with property owners, business owners, City, and MoDOT required for implementation

SECTION 'A' Alternate - Buffered One Way Bike Lane Each Direction w/ Landscape Median

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

SECTION 'B' Alternate - Buffered One Way Bike Lane Each Direction @ Curb Cut w/ Turn Lane

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

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Threshold Projects

Several areas throughout the Loop Corridor offer an opportunity for small-scale and cost-effective enhancements that will have an immediate impact. Identified as 'Threshold Projects' these spaces can take the form of pop-up installations occurring in underutilized public zones. The projects are meant to be implemented quickly (within a matter of months) as resources and locations are identified.

Amenities such as charging stations and bike repair facilities are meant to increase foot and bike traffic while providing a reason for people to congregate along the street. More pedestrians walking and gathering on the street will activate the corridor, making the Loop more active, more attractive and more safe. Pops of color painted on the ground-plane offer excitement and a visual cue to pedestrians and cyclists that they are near a pocket park. Graphics and wayfinding elements can be integrated into the design of the shelter, resulting in a cohesive design concept for a temporary pocket park. This approach is easily mobile and can move to various locations.

Specific threshold projects which were discussed for The Loop include the following:

- Select and install a signature landscape plant such as a perennial plant which provides seasonal color every year. Plant the perennials in large masses and locations visible from the Loop roadway. Potential plants may include Iris or Daffodils in the Spring or Marigolds or Blazing Star in the Summer. The perennial return of the plants each year will help to give identity to the Loop. Investing in the initial plant stock would not require many resources and could be supplemented each year.

- Banner poles with street banners of the Loop "brand" can be implemented as funding resources allow. These stand-alone poles allow for the street banners to be installed separate from light poles and utility poles, allowing for more control and flexibility regarding the use and maintenance of the banners.

- Temporary signs with the Loop "brand" and graphics, placed on vacant lots or lots seeking redevelopment are a quick and efficient way to establish identity on the Loop.

- Painted crosswalks and sidewalks can be implemented, upon approval from MoDOT and the City, with simple but bold colors and graphics which will enliven the ground plane at the street edge. The graphics would reflect the "brand" of the Loop and allow for a quick way to establish some color to the otherwise mono-chromatic pavement found along the street.

- Shipping containers can be used as pop-up spaces since they are easily retrofitted to become open air shelters that offer built-in seating, tables and chairs.

- Exterior phone charging stands powered by solar panels, in the right location (such as at Parkade Center or the Festival Lot), will attract people to the street. The charging stations coupled with seating, landscaping and shade would start to create a sense of place, giving pedestrians a reason to stay on the street.

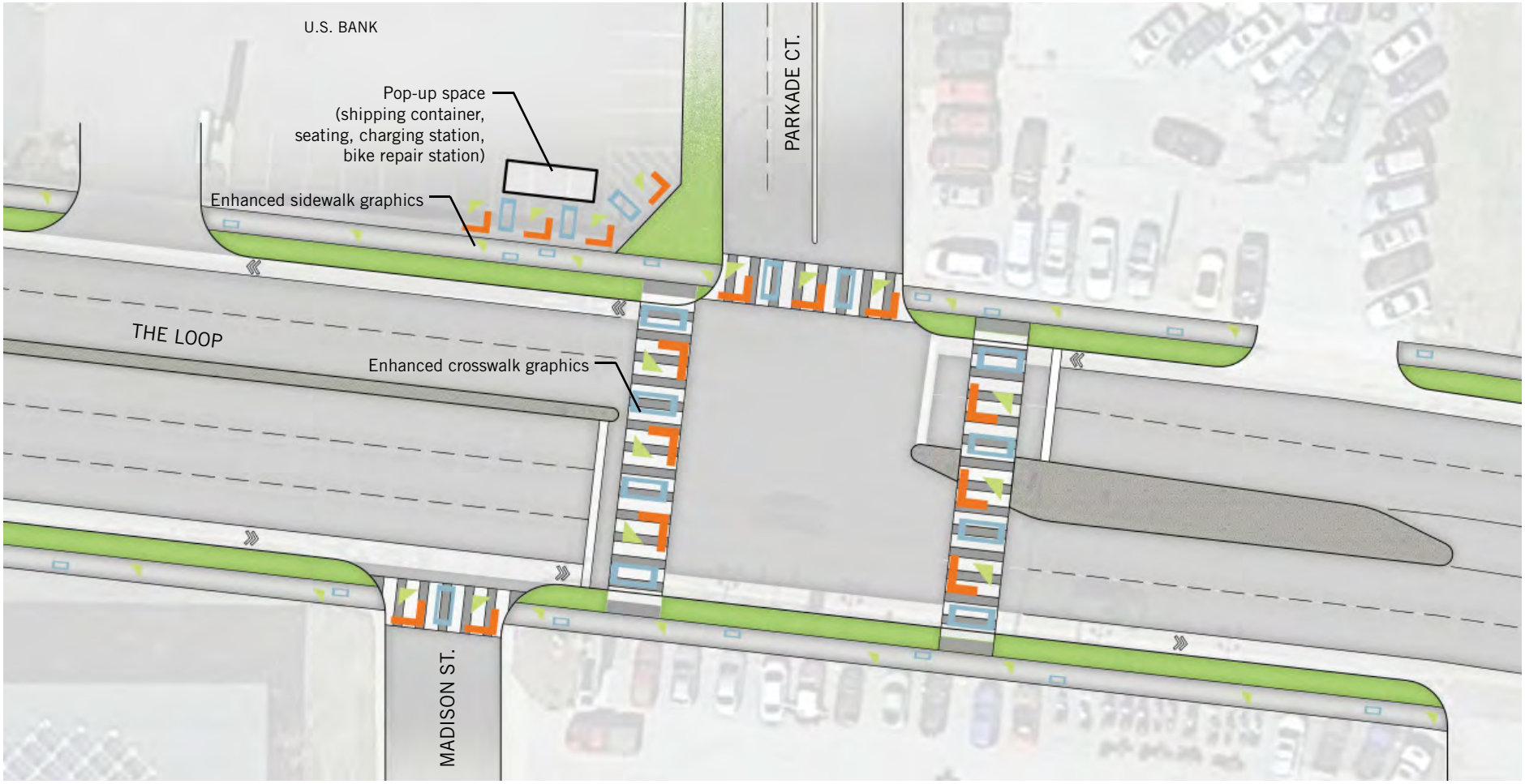
- Create some rain gardens at the curb edge, to capture stormwater from the street. The rain gardens would be a visible sign of sustainable design and a harbinger of the future efforts of the proposed corridor stormwater management plan. The rain gardens would allow surface stormwater runoff to percolate into the subgrade, limiting the volume entering the sewer systems on the street. Interpretive panels would help to educate pedestrians on stormwater best management practices. A good location for the initial rain gardens may be at Parkade Center or at Hickman High School.

Precedent: Temporary Public Art


Precedent: Landscape of Perennials

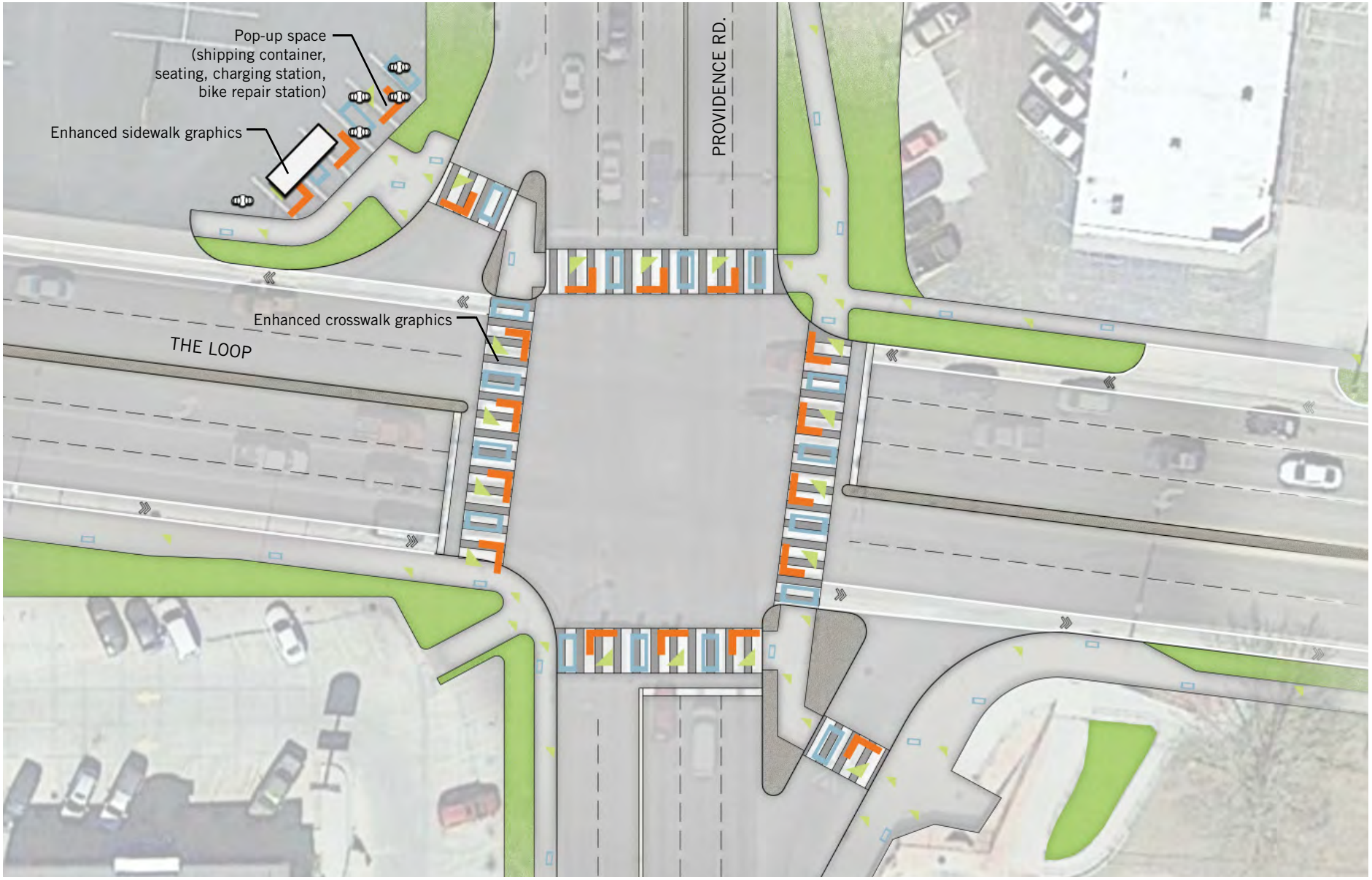

Precedent: Solar Powered Charging Stations

Conceptual Threshold Projects



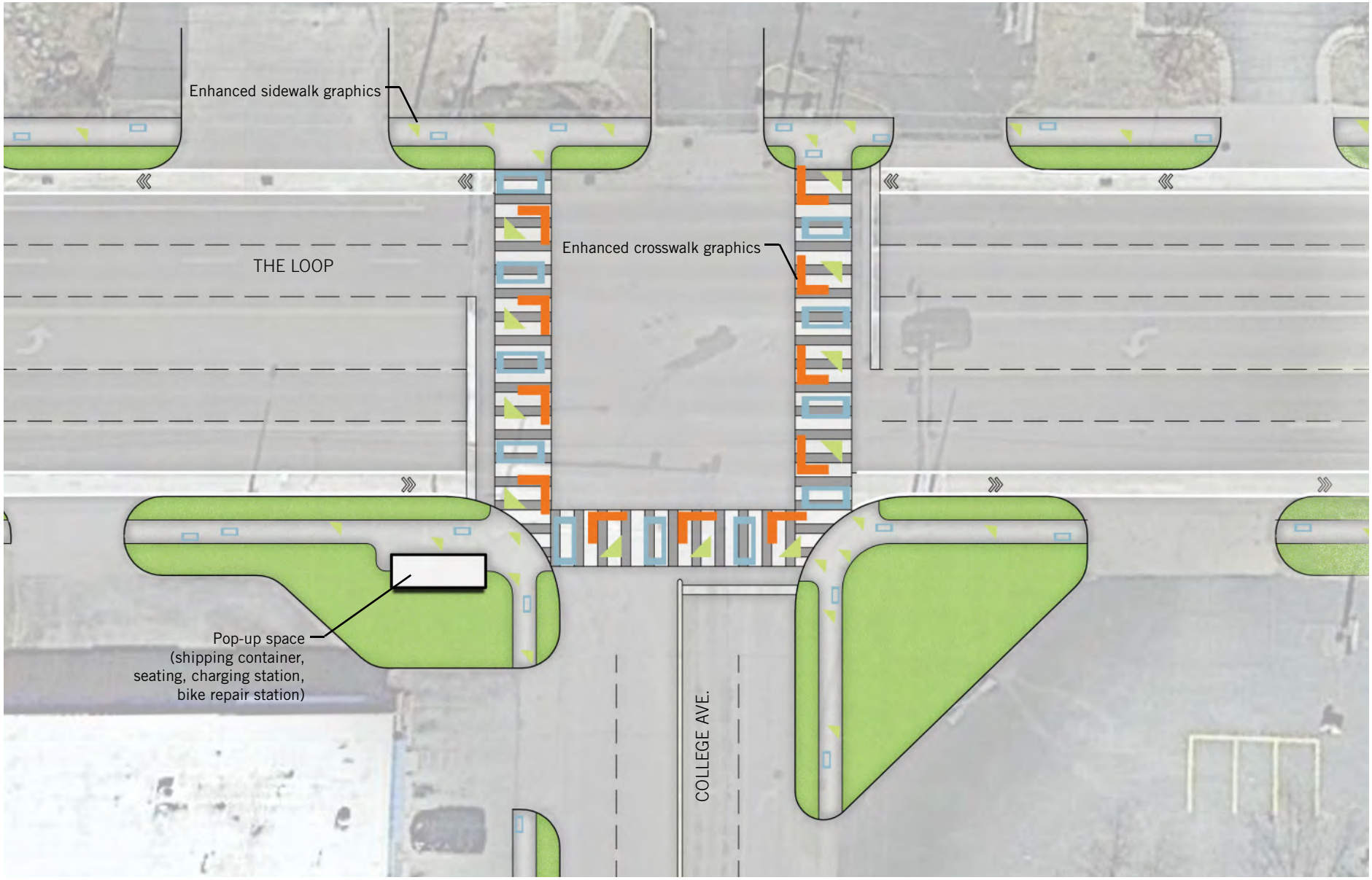
Madison Street Crosswalk

Conceptual Threshold Projects



Providence Road Crosswalk

Conceptual Threshold Projects



College Avenue Crosswalk

0 20 40 80

Conceptual Threshold Projects

Pop-up space with shipping container shelter, seating and landscaping

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Traffic Circulation

The study corridor spans between I-70 on the west, and College Avenue on the east. The Business I-70 "Loop" generally consists of five-lanes in this section and is owned and maintained by the Missouri Department of Transportation (MoDOT).

Historical average daily traffic volumes (AADT) were compiled at three segments along I-70 Business Loop: I-70 Business Loop between I-70 and Providence Road, Providence Road to Range Line Street, Range Line Street to Paris Road. These counts show relativity stable traffic volumes over this time.

The corridor has numerous curb-cuts that cause traffic conflicts for both vehicular traffic on the I-70 Business Loop as well as for bicyclists and pedestrians along the corridor. The many curb-cuts also create an undefined edge to the street, with numerous pavement types in various states of quality. Access is controlled near intersections with raised medians, which are all paved.

While the traffic volumes are stable, the improvements to the US 63 North interchange, east of the corridor, are expected to add more traffic volume in the future, especially at the Rangeline Street intersection.

Traffic operational analysis was completed using Synchro 10 (for traffic signals) and SIDRA (for roundabouts). The traffic operations analysis includes measures of effectiveness generated by the Synchro and SIDRA software packages. The operating conditions were graded in accordance with six levels of traffic service (Level A "Free Flow" to Level F "Fully Saturated"). Levels of service (LOS) are measures of traffic flow which consider such factors as speed, delay, traffic interruptions, safety, driver comfort, and convenience. Based on the character of this area, we believe that LOS D would be an appropriate target for peak period traffic operations. **Table 1** summarizes the LOS thresholds used in this analysis.

Table 1: LOS Thresholds

Level of Service (LOS)	Control Delay per Vehicle (sec/veh)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Table 2. Range Line Street Intersection

Movement	Existing Conditions (Traffic Signal)		Add Westbound Right-Turn Lane to Traffic Signal		Roundabout	
	AM	PM	AM	PM	AM	PM
EB	C (31.5)	C (28.9)	C (32.1)	C (23.9)	B (13.8)	B (12.9)
WB	D (40.5)	D (44.7)	C (30.2)	C (26.2)	A (5.7)	B (11.9)
NB	C (24.6)	D (45.7)	C (23.8)	D (45.7)	A (9.2)	D (27.7)
SB	B (13.3)	C (23.1)	B (12.6)	C (23.1)	C (18.2)	C (15.2)
Overall	**C (25.4)**	**D (35.6)**	**C (22.3)**	**C (27.6)**	**B (13.3)**	**C (15.1)**

Table 3. Garth Avenue Intersection

Movement	Existing Conditions (Traffic Signal)		Roundabout	
	AM	PM	AM	PM
EB	C (32.3)	C (30.9)	A (8.2)	B (11.8)
WB	C (31.1)	D (40.5)	A (7.8)	C (15.7)
NB	A (9.3)	C (21.1)	A (7.6)	C (16.0)
SB	B (11.6)	C (20.6)	B (13.1)	C (17.2)
Overall	**C (25.4)**	**C (31.9)**	**A (9.0)**	**B (14.6)**

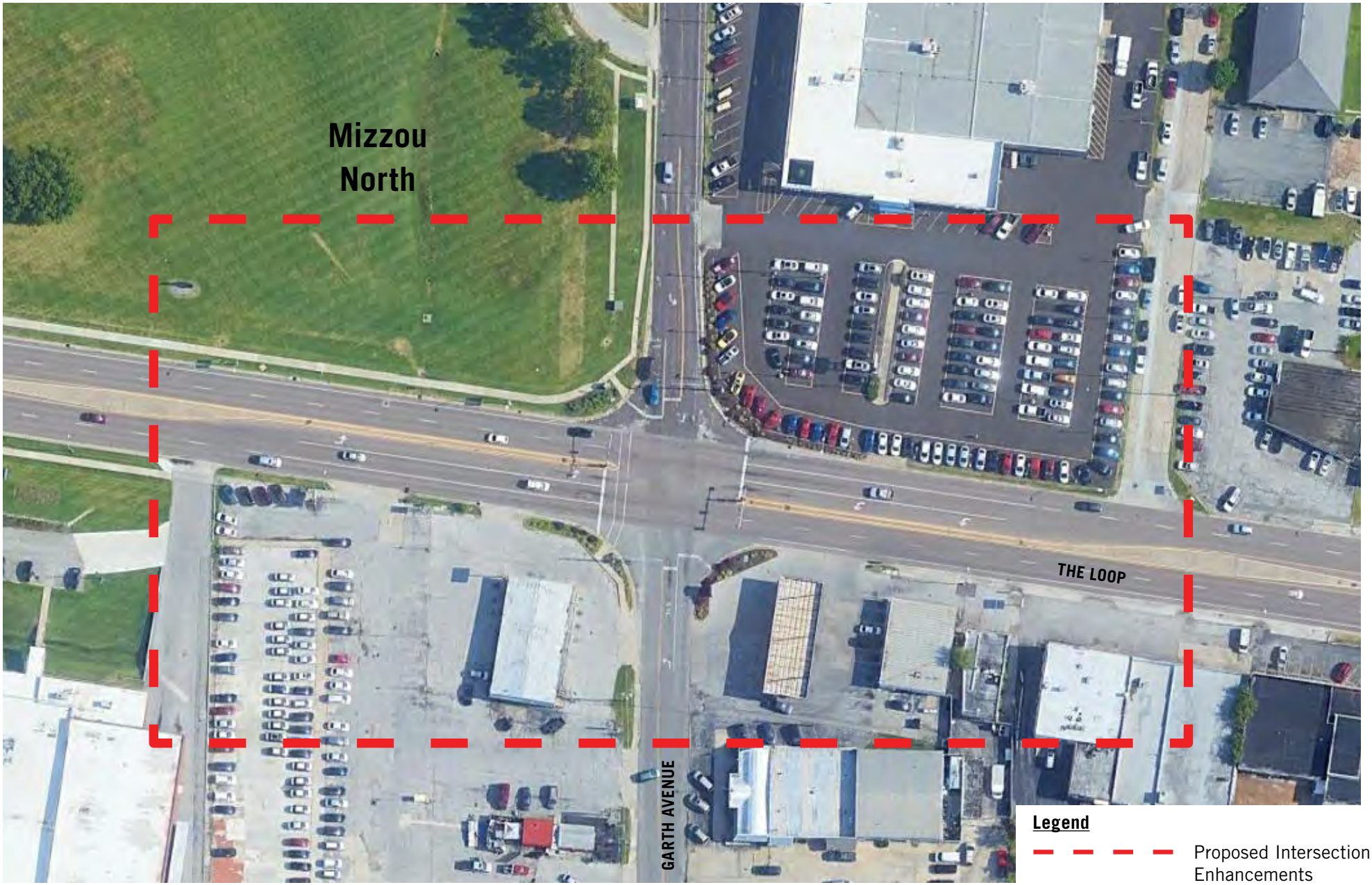
The operational analysis was completed with traffic volume counts provided by MoDOT. Based on these counts, the analysis results provided in **Table 2** show that LOS would improve marginally at Range Line Street with the addition of a westbound right-turn lane in a four way intersection. However, the results in **Tables 2 and 3** show that roundabouts could improve the traffic operations at both locations, however there would be potential greater impacts to private property. Any improvements to intersections to enhance vehicular circulation, pedestrian circulation and infrastructure should try to minimize impacts to property and not create "left-over" parcels, which are not usable due to size, access and visibility. Any impacts should also be mitigated through aesthetic enhancements and allow for fair compensation to the property owner.

Precedent: Urban Roundabout

Precedent: Sculpture in Roundabout

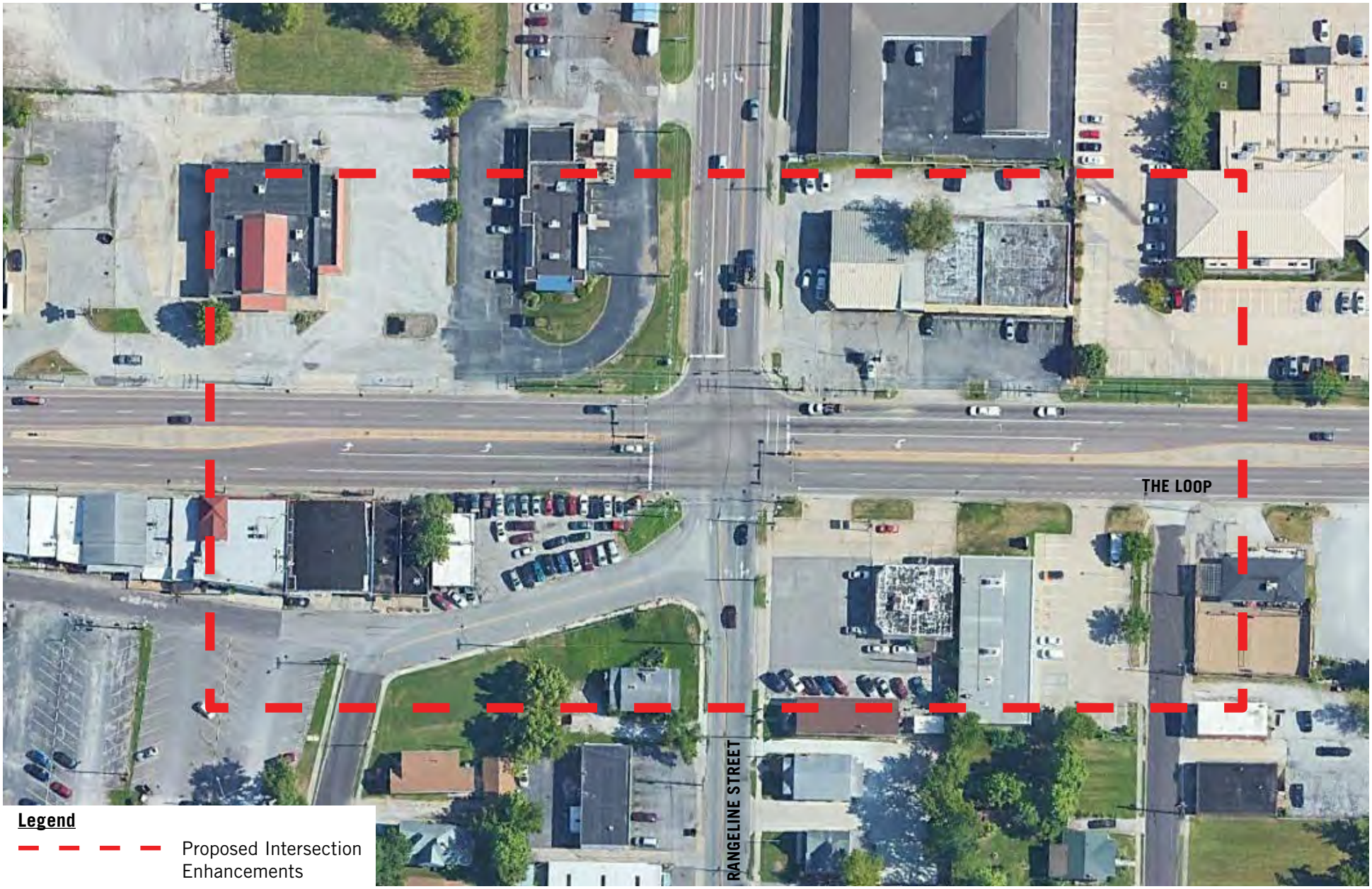
Precedent: 4-Way Intersection

Garth Avenue Intersection Concept



Proposed intersection of Garth Avenue and the Loop

Rangeline Street Intersection Concept



Proposed intersection of Rangeline Street and the Loop

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Corridor Stormwater Management Conceptual Plan

Stormwater and how it is conveyed is a major issue in today's cities. The use of stormwater as an element of sustainable design, aesthetic enhancement and even identity is a growing design practice and is proposed for the Loop Corridor Plan. The plan proposes to incorporate sustainable design solutions that enhance identity and create a purposeful and educational landscape through the use of Stormwater Best Management Practices (BMPs). The BMPs will add to the aesthetic beauty of the street, while fostering a progressive image of sustainability. The Loop Corridor Plan also proposes the development of a corridor specific stormwater plan, which would allow the conveyance of stormwater off the street right of way to larger bio-detention basins. This plan would allow developers and businesses to fully develop their properties, without the difficulty of on-site detention. The stormwater plan would be funded through an option of sources compliant with city regulations.

For redevelopment to occur on The Loop, stormwater detention and water quality treatment will be required for each property over an acre and for roadway, sidewalk, and other improvements. These features can be expensive to install and can impact the developable area of a property, potentially utilizing 10% to 30% of a parcel's land area. Since approximately 76% of The Loop's area consists of properties greater than one-acre, and with the expectation that redevelopment may consolidate smaller parcels into larger ones, it is recommended to evaluate the development of a corridor-wide stormwater management plan for Loop.

This approach will allow for the following:

1. Efficient consolidation of detention, allowing for entire parcels to be redeveloped without the loss of land to stormwater detention.

2. Reduced cost of construction and maintenance of BMPs and detention basins.

3. Potential to gain additional improvement in stormwater management to downstream areas.

4. An opportunity to provide educational/interpretive exhibits on stormwater that will likely not occur with private BMPs and detention.

5. An incentive for redevelopment of the Loop by providing property that will not require the costly on-site stormwater management, as required in other areas of the city.

A corridor-wide approach would require an initial investment for construction of stormwater detention to serve proposed improvements to the Loop and the private redevelopment on the Loop. Due to the upfront investment, it is proposed to implement this plan using a phased approach. The corridor is located in four distinct sub-watersheds (three discharging to Bear Creek and one discharging to Flat Branch Creek; refer to next page). In each watershed, detention is proposed to reduce the peak runoff rates. In addition, several locations for BMPs are identified in smaller sub-basins upstream of the detention basins.

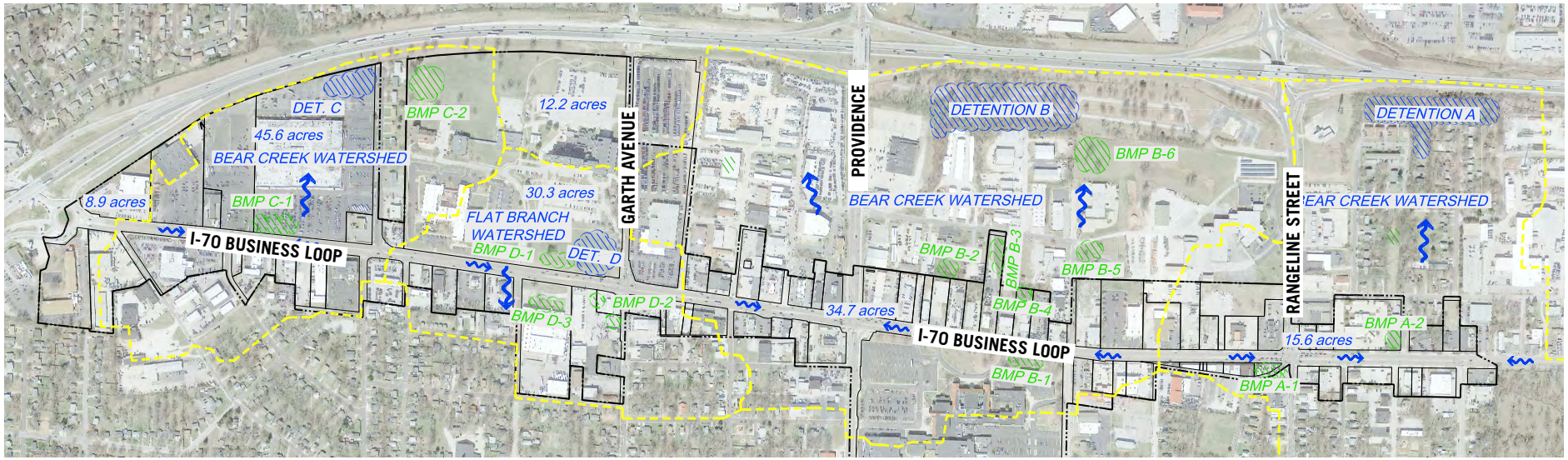
The implementation of the stormwater improvements are proposed to be approved as a stormwater master plan with the City, creating a custom standard for stormwater management tailored to the needs of The Loop. This conceptual plan will require phased construction over many years, with the ultimate goal of providing detention and improved water quality to the redevelopment of 50% of the Loop corridor. Implementation will require collaboration with property and business owners, the City, and MoDOT.

Precedent: Curbside Rain Garden Graphic

Precedent: Parking Lot Bio-Swale

Precedent: Bio-Swale Interpretive Panel

Corridor Stormwater Management Conceptual Plan



Site-Specific Stormwater Facilities
BMPs focus on the water quality of stormwater. Some water quality benefits include: lower amounts of contaminants such as oils or greases from parking lots, reduced soil erosion, trash removal and reduced sediments. BMP's can also consist of infiltration or filtering practices. These allow the stormwater to infiltrate into the soil over an extended period of time and/or pass through a filter bed made up of materials such as sand or organic matter.

Regional Stormwater Facilities
Basins for temporary storage of stormwater runoff designed to control runoff from heavy rainfall. These dedicated areas help prevent flooding of downstream locations, properties, streams and stormwater pipes.

Notes:
- Total drainage area within the Loop boundary = 147.3 acres
- Acre labels given above account for the land areas within the Loop boundary in their respective watershed.

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

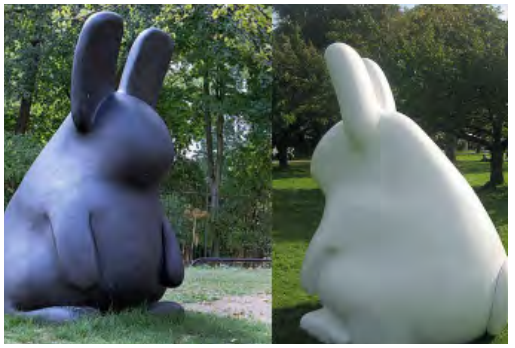
Gateways

Gateways define boundaries and establish identity at key intersections. The use of public art, landscape and lighting are common streetscape elements which can compose a gateway. The Loop Corridor, due to its scale, length and variety of land uses should have a hierarchy of gateway treatments. The major intersections at the west end, Providence and Rangeline interchanges and the College Avenue intersection are areas for major gateways, while smaller street intersections would be secondary gateways. Currently, a roundabout exists at the west end of the Loop Corridor near the I-70 interchange. The island of the roundabout is a pedestal which offers opportunities for art, landscaping and lighting. The initial gateway proposed for the existing west end roundabout would have a signature sculpture, landscaping, lighting and signage. Secondary gateways would reflect the same narrative and materials.

The potential gateway proposed for the west end of the Corridor, at the existing roundabout, is proposed to be a large, sinuous, unique sculpture with a signage composition of freestanding letters (approximately 8'-10' tall) which spell out the word "LOOP", with a smaller "THE" nearby. The gateway would be very visible from surrounding streets, including I-70, creating a dynamic entrance into the Corridor. The gateway would serve as a landmark for wayfinding as well as helping to define the identity of the Corridor. A gateway, similar in scale and materials, would be located at the east end of the Corridor near College Avenue, as well as near the I-70 Interchanges with Providence Road and Rangeline Street.

Secondary gateways would be of similar design style and materials, however much smaller in scale. The narrative and materials would be similar to the major gateways, just at a smaller scale, yet visible to motorists and pedestrians in the Loop.

Another gateway opportunity to explore would be painting the Loop "brand" of colors, graphics and name on the tall smokestack of the City of Columbia electrical power plant, just to the east of the C.I.D. boundaries on the Loop Corridor. The smokestack is visible for many miles in all directions and is located directly on the Loop Corridor. A smokestack with a new, bold and colorful aesthetic would also reflect the power plant's new strategy of using more renewable and sustainable fuel sources, thus reflecting the sustainable message and identity of the Loop.



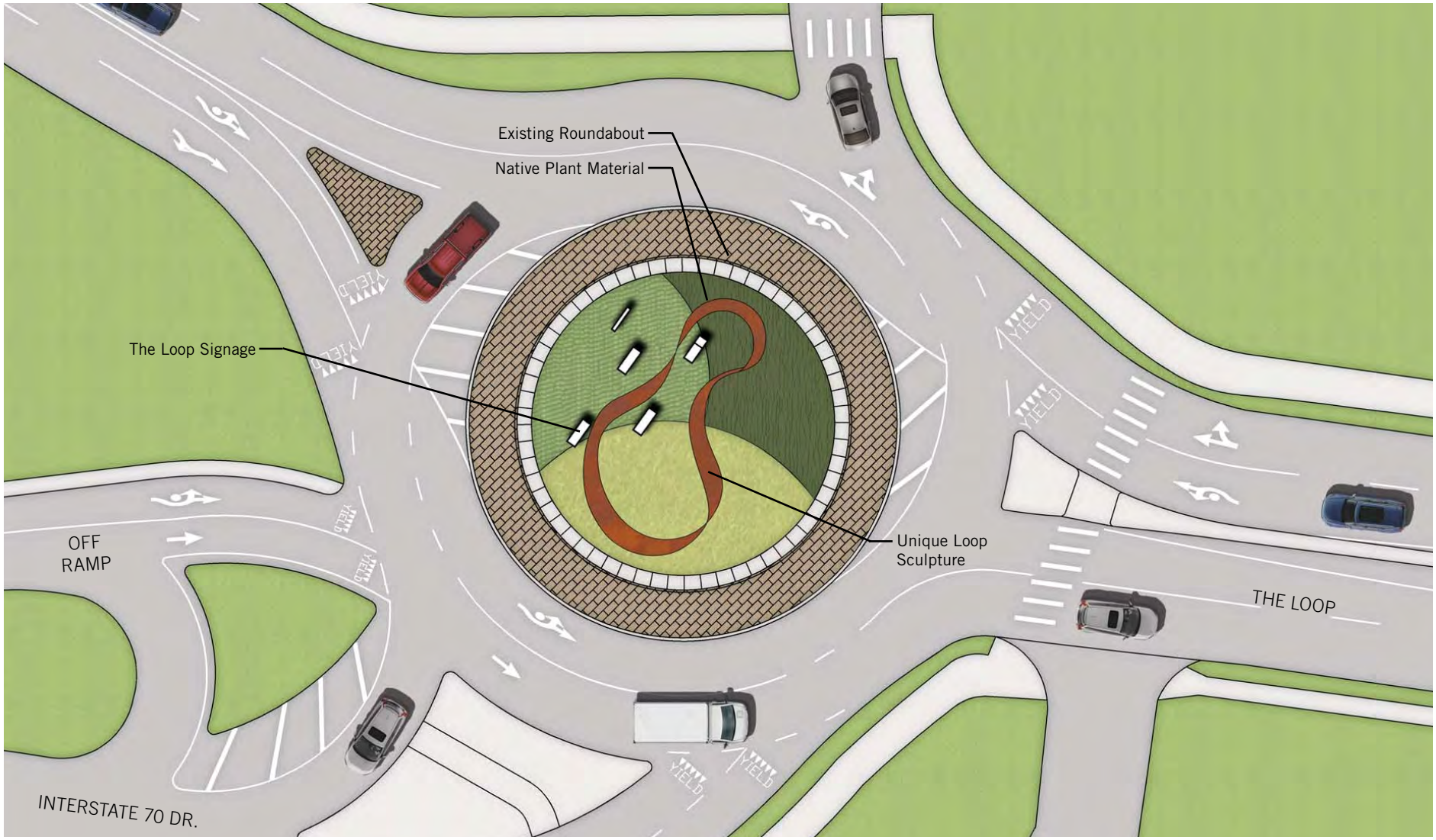
Precedent: Public Art

Precedent: Graphic Design

Precedent: Streetscape Gateway

Precedent: Enhanced Smokestack

West End Gateway Concept



Plan view of the west end roundabout at I-70 and the Loop

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

Gateway Concepts - Continued

West end roundabout gateway elevation

Typical street section with gateway at intersection

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

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Public Landscape

The Loop Corridor is a major arterial roadway that, over time, has become nearly devoid of landscape and green space. Enhancing the corridor with streetscape plantings, stormwater area landscaping and 'borrowed' landscapes from adjacent properties would greatly improve the aesthetics and identity of the corridor.

Roadway corridors are difficult environments for plants, but good design and selection of plant species can help ensure the longevity of the landscape. The landscape proposed for the Loop Corridor Plan emphasizes the use of native landscape materials and hardy non-natives, which are proven streetscape plantings. Detailed listings and graphics of the proposed plant materials are listed in the Landscape Palette section of this report.

The landscape within the public right of way of the street can utilize the parkway between the back of curb and the sidewalk. There are also larger medians within the street which can be planted, which would greatly diffuse the visual glare on the street due to the large expanse of pavement. In each of these areas, low growing perennial flowers, grasses and shrubs would visually enhance the roadway.

As noted in the Threshold section of this report, a signature perennial, planted along the Corridor would add to the identity of the roadway. A massing of perennial color and texture within the parkway area adjacent to the curbline, medians within the street and in larger planting areas would add a seasonal color to the street. Operation Brightside in St. Louis, MO. utilizes massings of yellow and white daffodils along the major highways to provide a 2-3 week burst of color announcing the arrival of Spring. A similar effort takes place in Kansas City, MO., where Tulips on Troost has enhanced a major urban roadway with a seasonal, colorful landscape.

A vertical edge for the street can be established by the planting of street trees along the Loop Road. The street trees, especially ones with columnar, upright habits would provide some landscape buffering and continuity to the roadway viewshed, which has too much visual clutter. The trees would add some seasonal color and texture as well as shade. The tree layout, spaced approximately 60' on center, would need to account for driveway aprons, signage and other elements along the roadway. Critical to the tree layout is ensuring that visibility of the adjacent stores, businesses and institutions are not blocked by the trees.

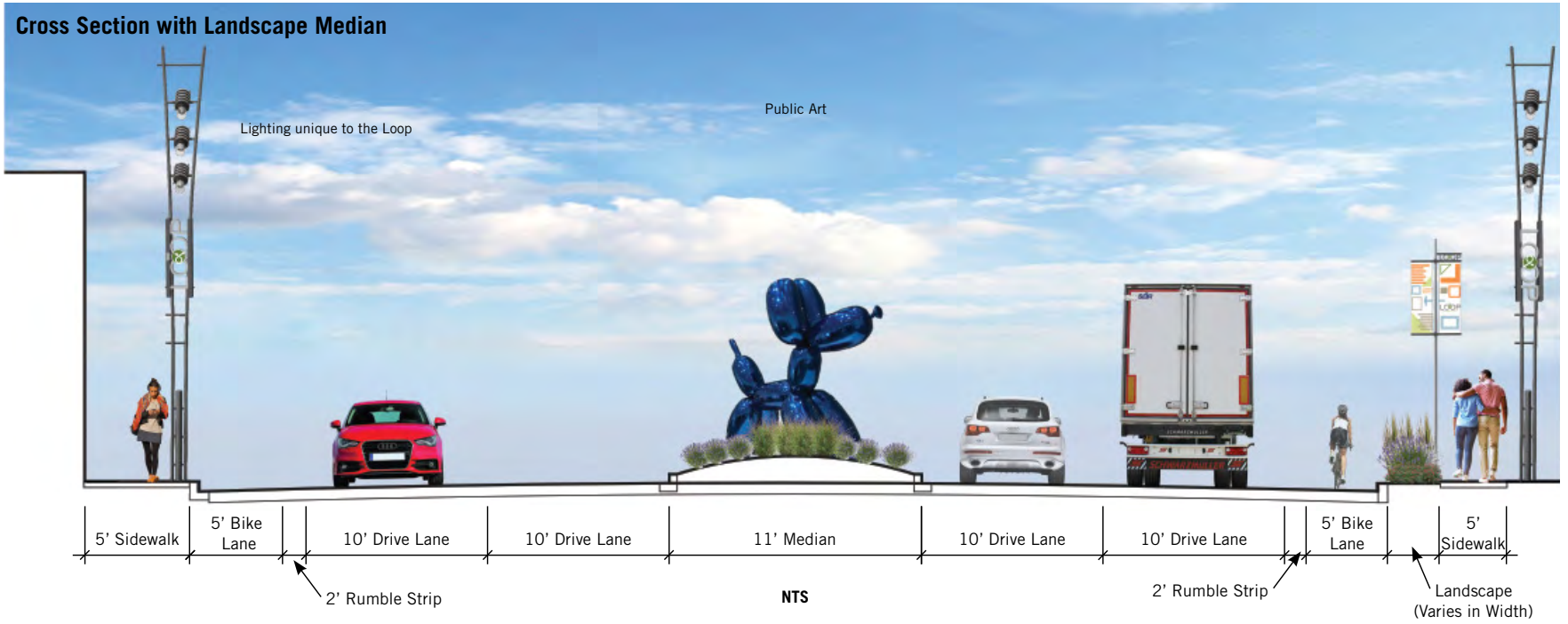
All landscape would also need to account for the sight triangle of motorists entering and exiting the roadway. Perennials, shrubs and trees cannot block the view of drivers on the road. Proper reviews of all site plans and construction would ensure the proper location of plant materials.

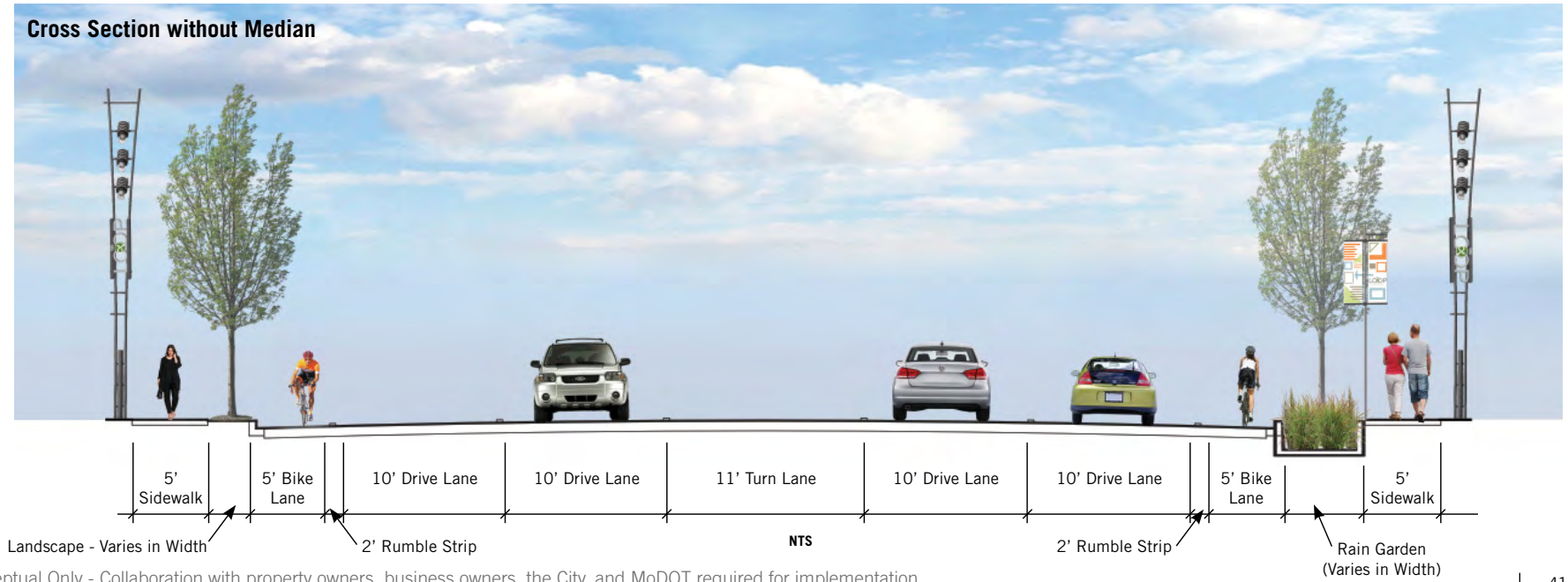
Precedent: Perennial Landscape

Precedent: Stormwater Bio-Swale

Precedent: Landscape Median in a Street

Conceptual Streetscape Cross Sections with Landscape





*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

Conceptual Streetscape Elevation with Landscape

Typical street section with landscape median, street trees and enhancements

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

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Identity, Graphics & Placemaking

One of the most critical needs for the corridor is to establish a cohesive identity for the Loop. Currently, the west side of the corridor is rife with auto dealerships, franchise restaurants, and shopping opportunities. On the east end, there is the juxtaposition of Hickman High School, the Senior Center, and the Boys and Girls Club with tattoo parlors, pawn shops, and adult-only establishments. All of these companies bring unique branding and identities to the Loop.

An identity created through a cohesive structure of graphics and branding efforts can be an effective way to create positive and immediate change for the corridor. Strengthening the identity of the Loop Corridor includes establishing a hierarchy of messaging applications and implementing a consistent branding application. This could take many different forms, and can be included as temporary or permanent installations. Unique and functional placemaking graphics can also be used to create interest in underutilized lots, helping to bolster the number of businesses and bringing more users to the Loop.

Crosswalks, street signs and banners, sculptural elements, murals and furnishings can be thoughtfully curated to present a unified concept representative of the Loop Corridor. These graphics and branding opportunities will require careful collaboration with property and business owners. Signage and placemaking elements are strategic ways to pull the Loop brand and color palette throughout the corridor and unify the two ends. Likewise, a street banner system would provide repetition of color, messaging, and imaging.

In addition to signage and placemaking elements, an organized mural graphics program can foster identity for the Loop. Bringing in local artists will help showcase their work and strengthen ties to the surrounding community in Columbia. These artists could even be a catalyst to increasing the perception that the Loop is a makerspace and is full of opportunity for artists, fabricators, and other creative arts.

Similarly, establishing public spaces throughout the corridor with enhanced graphics and placemaking will help draw users into the space. This will help bring more revenue to the businesses on the Loop, creating a cycle of growth to benefit not only property and business owners, but residents of the surrounding area as well.

Precedent: Sidewalk Branding

Precedent: Banner Pole Graphics

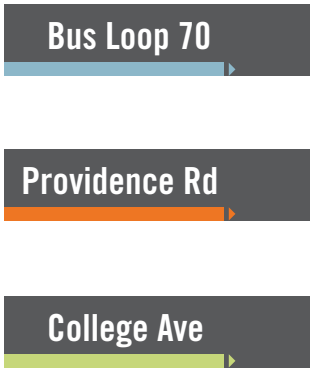
Precedent: Public Art

Conceptual Identity & Graphics

Brand - “Maker’s” Pattern

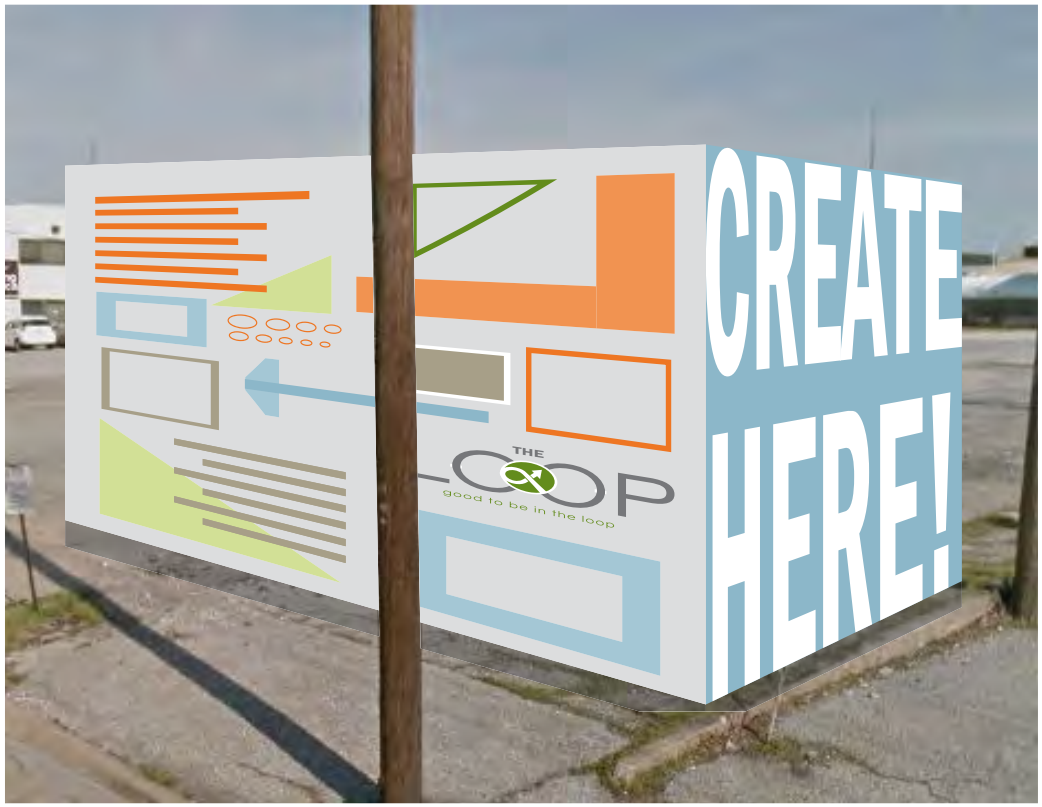
“Doers” Campaign

Street Banners



Street Signs

Placemaking- Bike Infrastructure



*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

Conceptual Identity, Graphics & Placemaking

Examples of mural art in collaboration with property owners

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

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Furnishing Palette

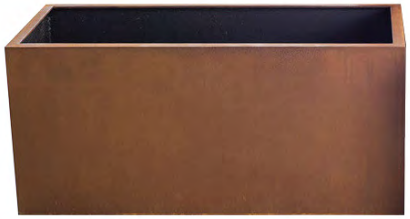
The above graphic is a key for the site furnishings listed on the opposite page

Furnishing Palette

F1

BENCHES
Manufacturer: Anova
Style: Metrix
Color: Textured Pewter

F2



PLANTER - OPTION 1
Manufacturer: Form and Fiber
Style: Corten Steel Box
Color: Corten

F3

PLANTER - OPTION 2
Manufacturer: Anova
Style: Element
Color: Embossed Textured Bronze

F4

RECEPTACLES
Manufacturer: Anova
Style: Element
Color: Embossed Textured Bronze

F5

TABLES
Manufacturer: Maglin
Style: Ancora
Color: Various

F6

CHAIRS
Manufacturer: Maglin
Style: BTC1800
Color: Various

F7

LOUNGE CHAIRS
Manufacturer: Maglin
Style: MCL720-M
Color: Various

F8

PEDESTRIAN LIGHTING
Manufacturer: Hess
Style: Tanella
Color: Silver Grey

Landscape Palette

The landscape palette proposed for the Loop Corridor is composed of mainly native landscape species of perennials, shrubs, ornamental trees and shade trees. Species selected from the City of Columbia's Street Tree list should be given priority. Durability and long term viability/maintenance must also be considered due to the harsh conditions for landscape on a roadway. Debris, salt spray, poor soil conditions, and lack of irrigation are all conditions which landscape plantings must contend with along a busy street like the Loop.

Native landscape species such as perennials of Big Blue Stem grasses and Black-Eyed Susan flowers are hardy and will establish quickly. Shrub massings of Gro-low Sumac and Inkberry will provide year round color and texture along the street, while Hawthorn and Hophornbeam trees will provide a vertical green edge. Non-native species such as Russian Sage or Zelkova trees are recommended because of their proven success as streetscape plants.

- Landscape plantings can provide seasonal color and interest to the streetscape
- Threshold projects of perennials plantings can be an immediate and low expense project to show quick implementation of the plan
- Landscape would enhance the street aesthetics, cut down on visual glare and improve the Corridor

Big Bluestem

Black-Eyed Susan

Gayfeather

Gro-low Sumac

Andorra Juniper

Inkberry

Purple Coneflower

Hophornbeam

Russian Sage

European Hornbeam

Iris

Redtwig Dogwood

Winter King Hawthorn

Blue Rug Juniper

Serviceberry

English Oak

Zelkova

Formalized Corridor Plan

The Loop Corridor Plan (LCP) is a proposed plan of infrastructure and land use improvements for the Business Loop Corridor. The conceptual ideas in the plan were based on sound analysis, stakeholder engagement and creativity. The plan is envisioned to be a 10 year vision to guide future development and affect positive change for the Loop area. Critical to the long term success of the plan is a broad level of support from both stakeholders and civic leaders throughout the Columbia community. An important first task in achieving that support would be a formal resolution by the City of Columbia.

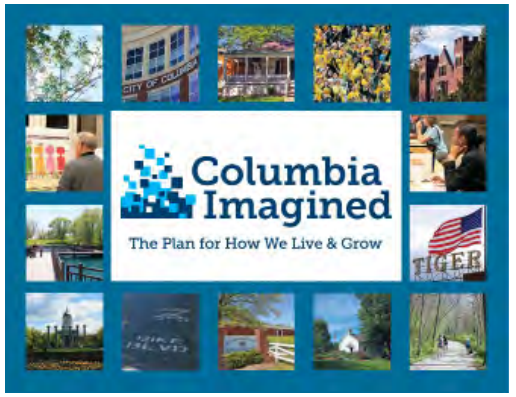
The existing community planning processes and approval protocols of the City offer the format for official adoption. Utilizing the Unified Development Code, of the City of Columbia, a designation which best reflects the plan would be a M-C Mixed Use – Corridor District. The classification of the overlay plan as a Mixed Use – Corridor District allows for certain flexibility development, especially if approved for transit standards. The transit standards, which apply to arterial and collector streets such as the Loop, promote the use of transit and alternative means of transportation. The base zoning district designation of a Mixed Use Corridor will allow for flexibility in building standards and lot standards. Most importantly, the designation is a land use category of the Unified Development Code, which would allow the Loop Corridor Plan a defined process towards formal adoption by the City. The adoption of the plan can be justified by the fact that it meets many of the objectives of the City's comprehensive plan, Columbia Imagined, adopted by the City in 2013. The comprehensive plan also offers the Future Land Use Map (FLUM) as a policy tool to guide future development in the City. The Loop Corridor Plan is an example of how the FLUM can be utilized due to the fact that the Corridor Plan proposes solutions for numerous corridor issues regarding land use, sustainability, infrastructure and community. The Loop Corridor Plan directly addresses all of the "Big Ideas" as defined in Chapter Three of the comprehensive plan, including the following goals of the Columbia Imagined Plan:

- Land Use and Growth Management: The LCP advocates for infrastructure, placemaking and environmental design improvements to encourage infill development and investment. These improvements will attract higher and better land uses/businesses to the Corridor, discouraging sprawl.

- Environmental Management: The LCP proposes the redevelopment of various parcels for infill development, an improved bicycle/pedestrian network and improved infrastructure to attract investment in the built environment of the Corridor, thus limiting potential sprawl.

- Infrastructure: The LCP reflects this collaboration with a proposed corridor stormwater management plan, which would be supplemented by development and efficiently accommodate the stormwater regulations for the corridor.

- Mobility, Connectivity and Accessibility: The LCP proposes an improved bicycle/pedestrian network on the Loop to foster a greater east-west connectivity to the Loop and beyond. The improved network would connect to adjacent neighborhoods providing improved linkages to jobs, goods/services and recreation.

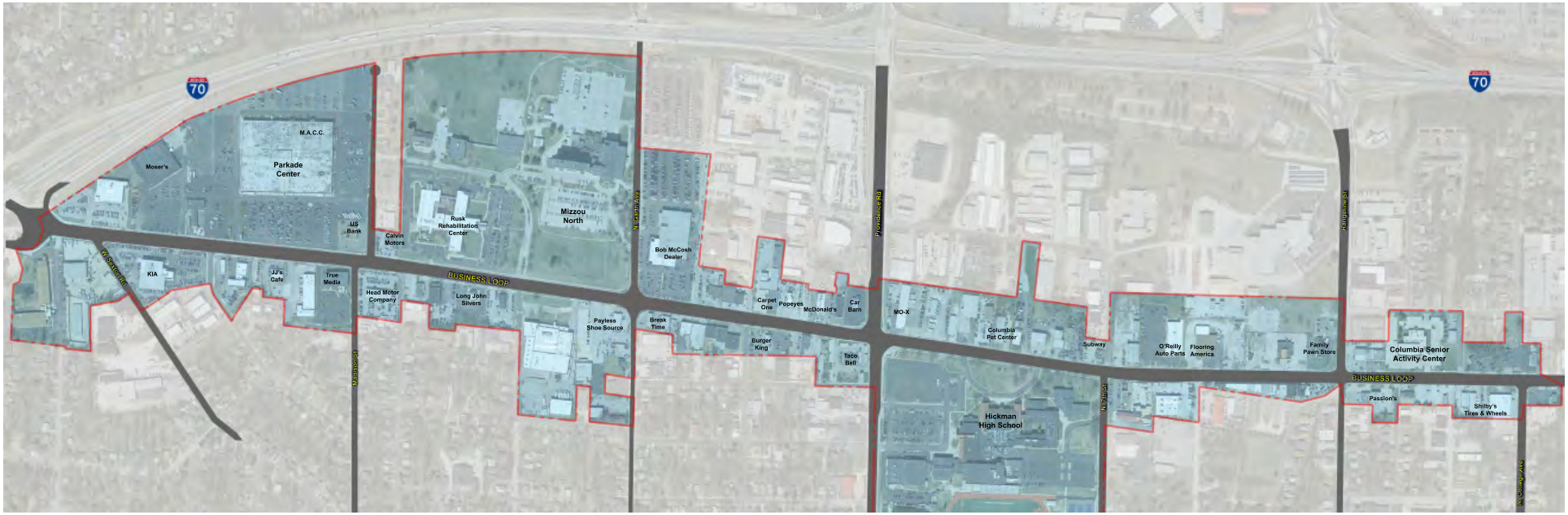


Precedent: The City's Comprehensive Plan

Precedent: City Hall in Columbia


Precedent: Council Meeting in City Hall

Formalized Corridor Plan



- Economic Development: The LCP seeks to attract investment through a variety of methods, including the Corridor Stormwater Management Plan which offers “shovel-ready” properties for development and potential flexibility to the Unified Development Code.

- Inter-Governmental Cooperation: The LCP advocates for a transparent Plan Process, improved infrastructure across multiple jurisdictions and leveraging improvements off of the Corridor, for proposed improvements on the Corridor.

- Livable and Sustainable Communities: The LCP proposes enhanced public spaces, better connectivity from neighborhoods to commercial/employment centers and a more stable and sustainable corridor.

The adoption of the Loop Corridor Plan, by the City, will allow the plan to be formally recognized as an official document of the city planning vision. Such designation will give the stakeholders of The Loop a chance to advocate and compete for public investment funding for improvements. These public dollar investments will in turn attract private dollar investments for property on The Loop.

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04 | PLACEMAKING FOCUS AREAS

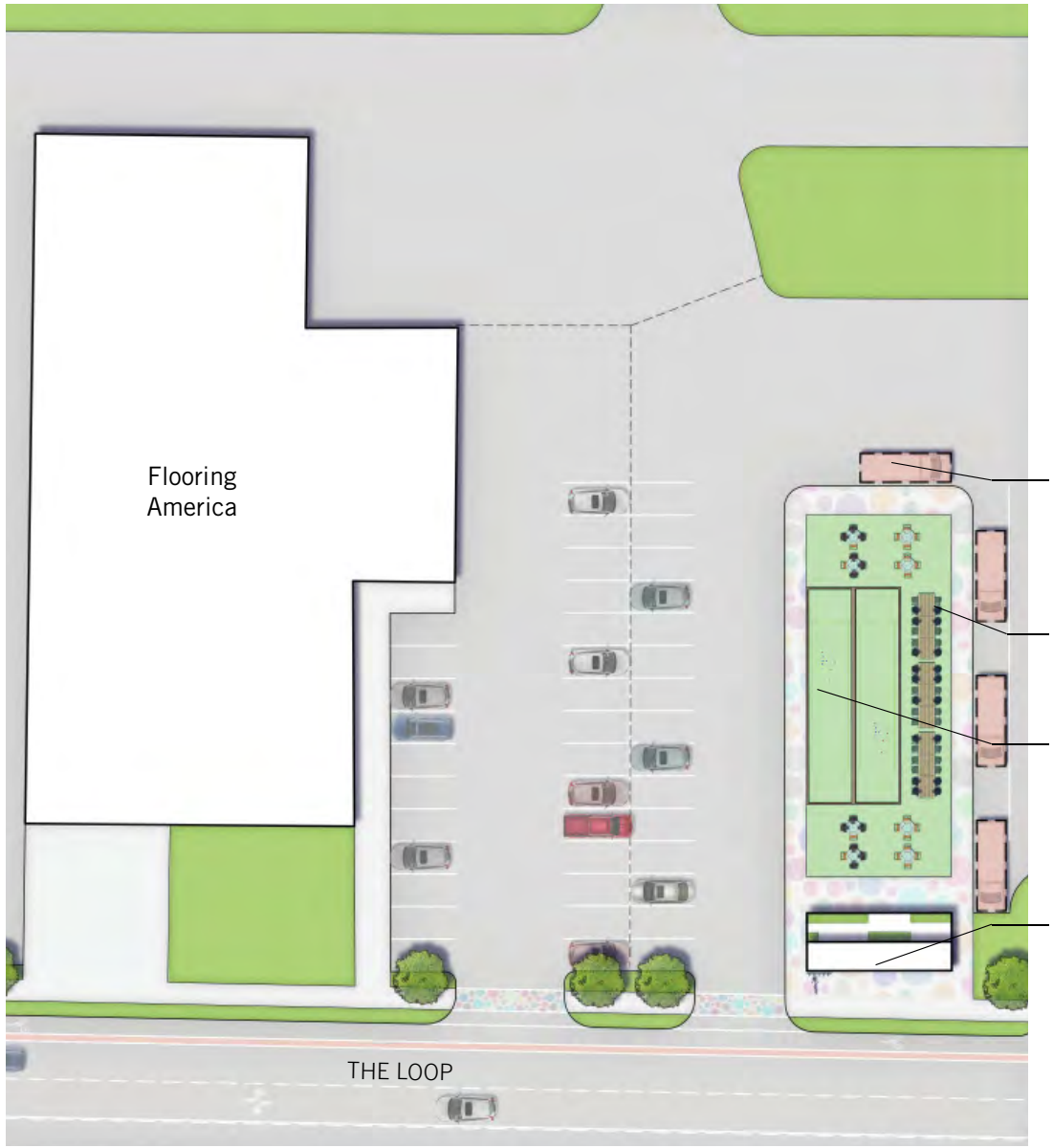
Placemaking

A critical element of the Loop Corridor Plan is to create spaces along the road, where people can gather as a community. More people on the street will give activity to the roadway and enhance the identity of the Corridor. Some of the proposed improvements for these places also recommend redevelopment scenarios for certain properties. Since, these proposed places occur on private and public institution property, collaboration with the property owners is important for success.

Conceptual plans were developed to initiate the conversation and help the public to visualize the proposed new spaces on the Corridor. The following five areas were identified for potential placemaking opportunities, due to location and the potential for collaboration with the property owners. The five placemaking focus areas are listed below and illustrated in detail on the following pages.

- Festival Lot: Creating a seasonal space on the east end of the Corridor, near Griggs Flooring America, on a parcel which is currently vacant and underutilized.
- Rangeline Street Intersection: The intersection of Rangeline Street and the Loop is proposed to include intersection improvements and potential redevelopment parcels.
- Hickman High School Front Lawn: Enhancing the frontage of the high school property along the Loop, between Providence Road and 7th Street.
- Mizzou North: Improving the large open space along the Loop, between Garth Avenue and Jewell Ave.
- Parkade Center Plaza: Leveraging the successful redevelopment with a gathering space along the street.

Placemaking Focus Areas - Festival Lot



Festival Lot Concept Plan

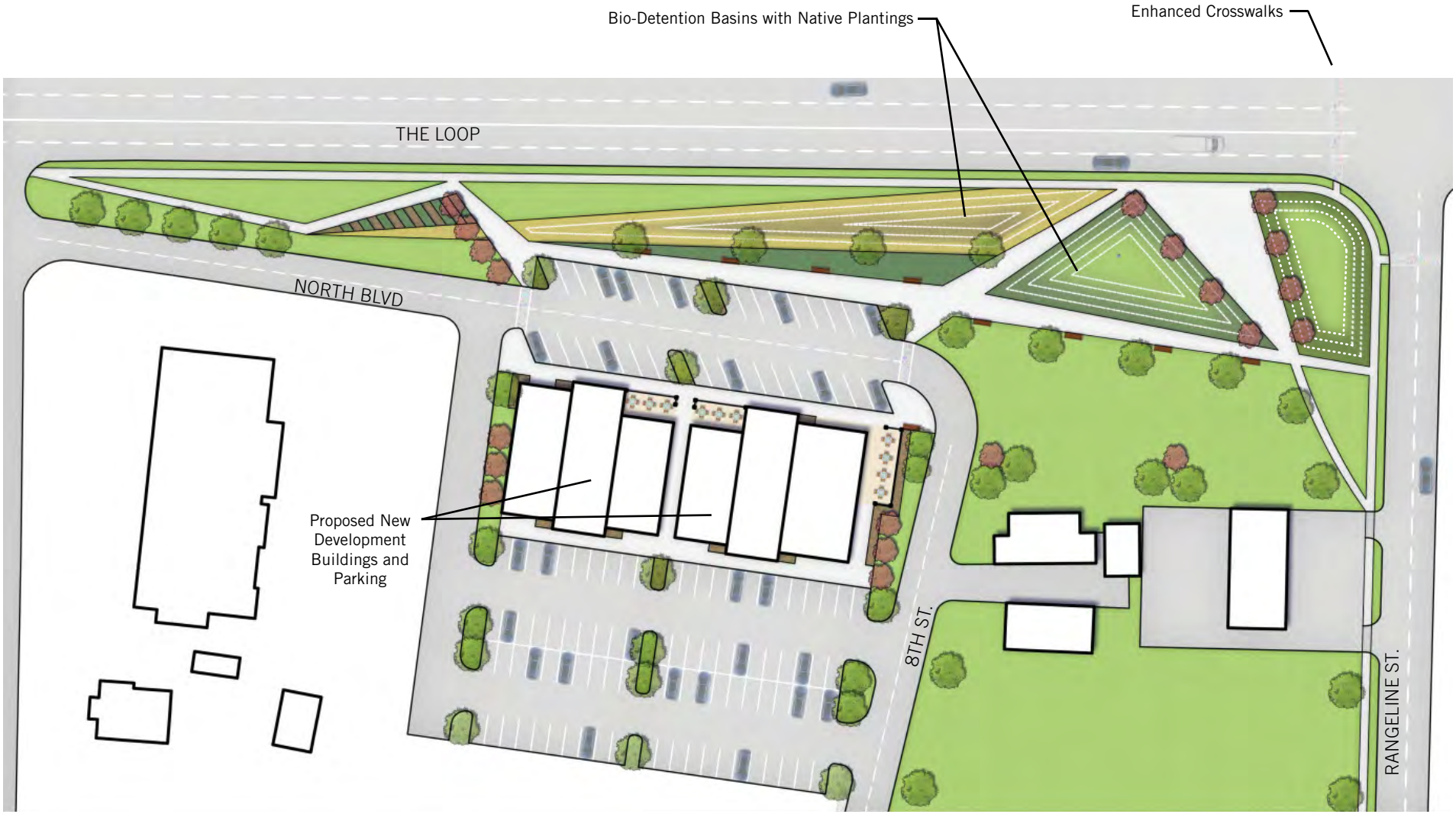
*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of proposed Festival Lot serving as a gathering space for the Loop Corridor community

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of existing corridor

Placemaking Focus Areas - Rangeline Street Intersection



Rangeline Street Intersection Concept Plan

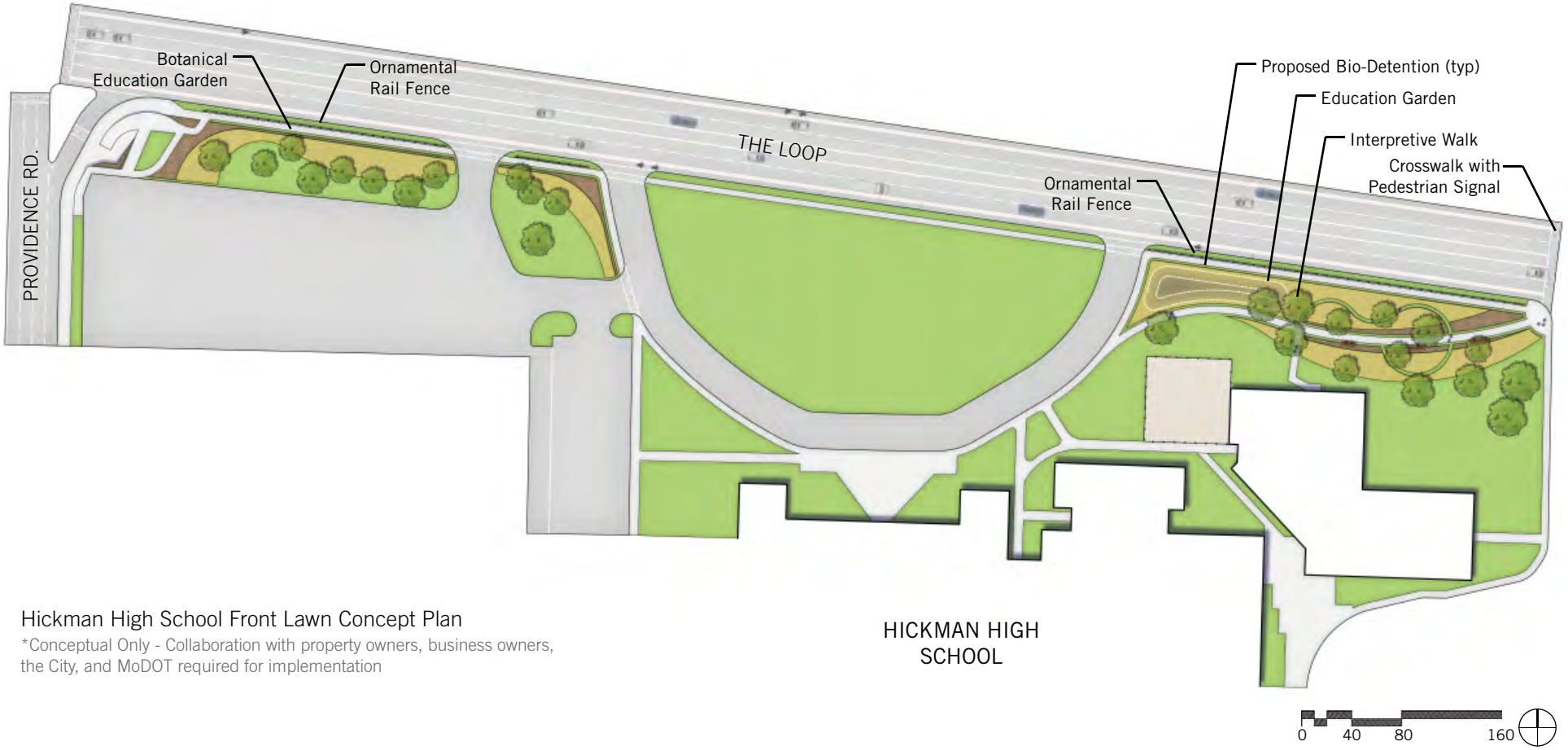
*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of proposed improvements at the intersection of the Loop and Rangeline Street, serving as a new gateway to the Corridor and City

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of existing corridor

Placemaking Focus Areas - Hickman High School Front Lawn



Hickman High School Front Lawn Concept Plan

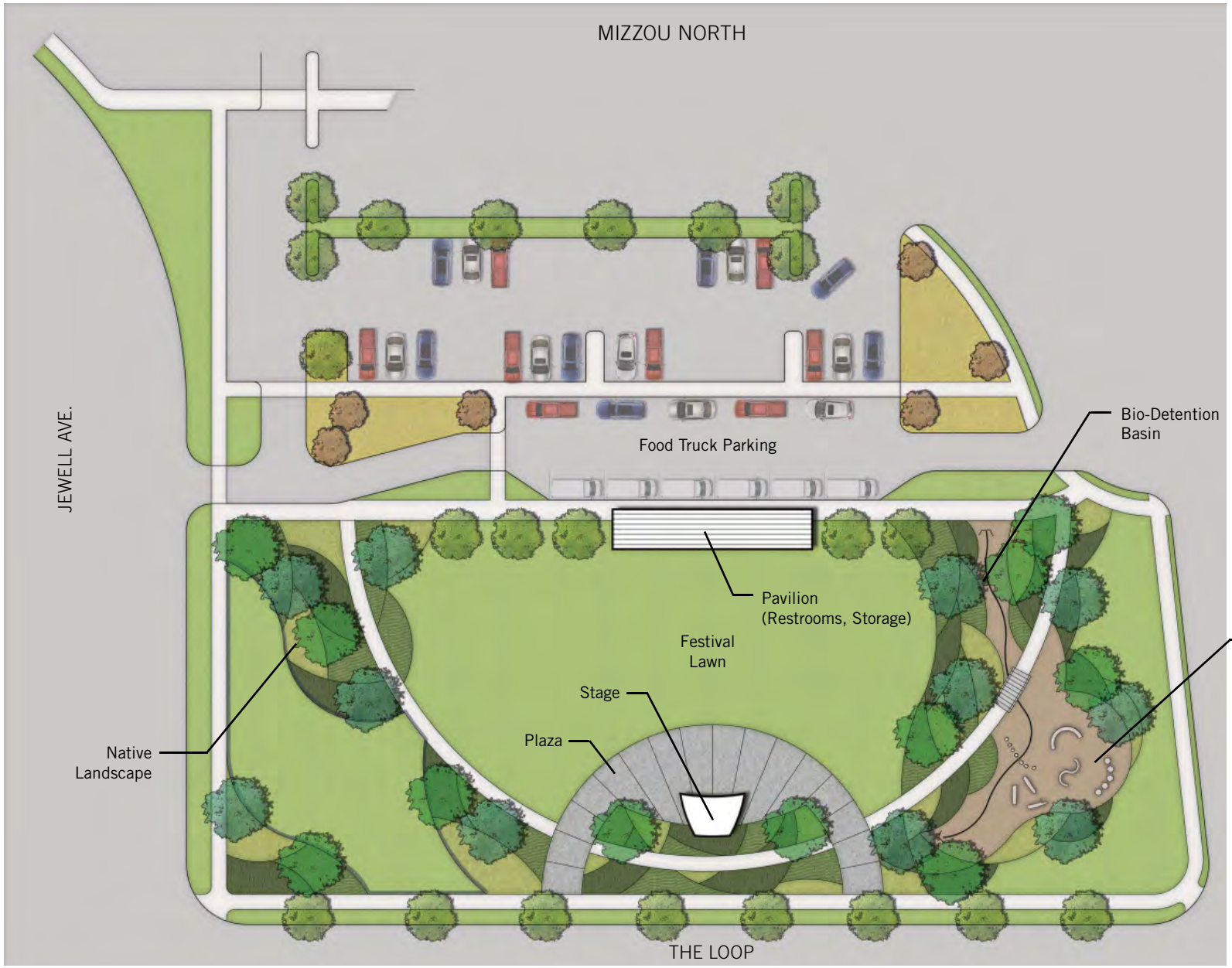
*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of proposed improvements at the Hickman High School Front Lawn with education garden and streetscape enhancements

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of existing corridor

Placemaking Focus Areas - Mizzou North



Mizzou North Concept Plan

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

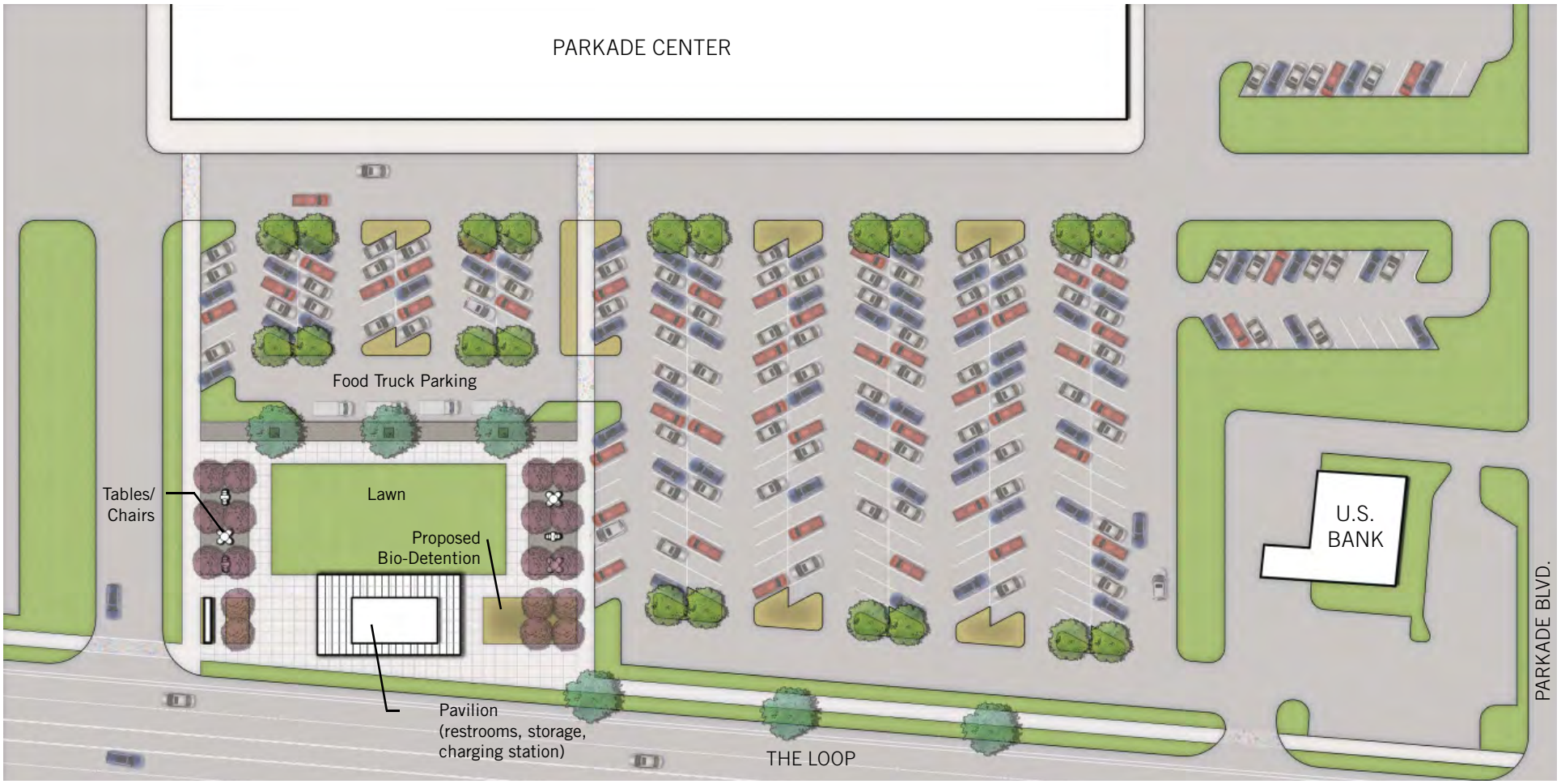
0 20 40 80

View of proposed improvements to the Mizzou North lawn with amphitheater, natural playground and native landscape

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of existing corridor

Placemaking Focus Areas - Parkade Center Plaza



Parkade Center Plaza Concept Plan

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of proposed improvements at Parkade Center Plaza with a pavilion, lawn space and streetscape

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

View of existing corridor

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05 | IMPLEMENTATION

05 | IMPLEMENTATION

The implementation of the Loop Corridor Plan will take the collaboration of numerous entities and property owners collectively working to improve the corridor over a 10-year time frame. This conceptual plan will be implemented in stages, with continual updates. The Loop Corridor Plan is a conceptual long-term plan, and will require periodic input from stakeholders and the public as concepts progress towards implementation. Utilizing input from multiple user groups will strengthen ties to the community and foster a sense of ownership in the enhancements taking place throughout the corridor.

The proposed improvements of the plan occur within the street right of way and on various private/public properties. These enhanced public spaces will be located throughout the corridor to draw users through the space and activate the streetscape. They are intended to unify The Loop and be inviting spaces for both locals and visitors.

The many goals of The Loop Corridor Plan will require numerous partnerships and initiatives to help progress the plan into implementation. A variety of funding sources will be needed and utilized to achieve the proposed enhancements. The table below lists some examples of potential funding sources.

The Plan Implementation Process graphic on the facing page is intended to highlight the stages necessary for implementation of the conceptual plans discussed in this report. The process encompasses several steps, and leads the C.I.D. towards the next steps of verifying funding and budgets, and beginning the initial phases of planning and design.

The table on the following pages offer an approximate Opinion of Probable Construction Costs (OPC) for the larger improvement plans. See pages 68-71 for project element locations. The OPC's were developed at a master plan conceptual level and much further research into costs will be required in future phases of planning and design.

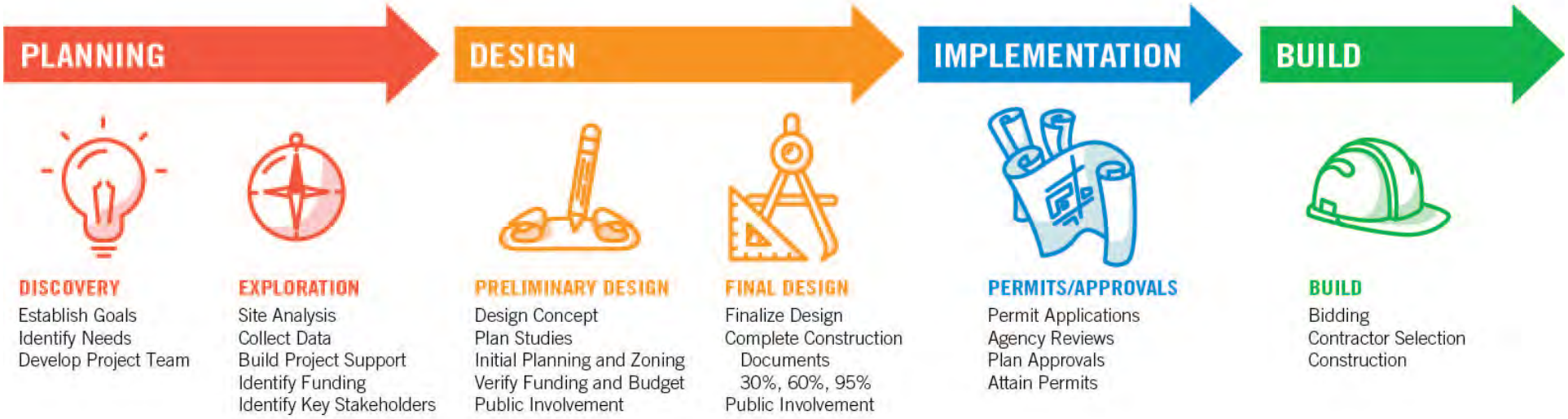
Precedent: Pop-Up Space

Precedent: Amphitheater


Precedent: Public Space

Funding Program/Agency:	Description:
Missouri Development Finance Board	Funds can be used for public infrastructure projects.
City of Columbia Office of Cultural Affairs	The public art program allows for 1% of project funds to be used for public art.
MAP-21 Trans. Alternatives Program (TAP)	Reimbursable grant through FHWA/MoDOT/Minimum of 20% local match.
NEA Our Town Grant	Funds for placemaking and public art.
ArtPlace America	Multiple step submittal process; amount requested must be $50k-$500k.
TIGER Grant	Transportation Investment Generating Economic Recovery (TIGER) program of Federal Highways; used for infrastructure improvements.

Plan Implementation Process



Cost Opinion

BICYCLE LANES	DESCRIPTION	FROM	TO	COST OPINION	NOTES	SHORT TERM VS. LONG TERM*
Segment 1	Improvements to add one-way bike lanes to east bound and west bound vehicular lanes and occasional median landscape islands in center of street.	West Project Limit	Parkade Blvd.	$354,000 - $370,000		Long Term
Segment 2		Parkade Blvd.	Garth Avenue	$166,000 - $175,000		Long Term
Segment 3		Garth Avenue	Providence Road	$226,000 - $245,000		Long Term
Segment 4		Providence Road	Rangeline Street	$496,000 - $520,000		Long Term
Segment 5		Rangeline Street	College Avenue	$255,000 - $275,000		Long Term
STREETSCAPE ENHANCEMENTS	**DESCRIPTION**	**FROM**	**TO**	**COST OPINION**	**NOTES**	**SHORT TERM VS. LONG TERM***
Segment 1	Streetscape enhancements include pedestrian lighting, identity branding and signage, and street trees on both sides of the corridor. Cost estimates are estimated by segment, as delineated on pgs. 68-71 of the report.	West Project Limit	Parkade Blvd.	$782,375 - $810,000		Short Term
Segment 2		Parkade Blvd.	Garth Avenue	$655,875 - $680,000		Long Term
Segment 3		Garth Avenue	Providence Road	$653,125 - $675,000		Long Term
Segment 4		Providence Road	Rangeline Street	$1,141,250 - $1,200,000		Long Term
Segment 5		Rangeline Street	College Avenue	$602,250 - $630,000		Short Term
INTERSECTION IMPROVEMENTS	**DESCRIPTION**			**COST OPINION**	**NOTES**	**SHORT TERM VS. LONG TERM***
West End Roundabout Gateway	Signature sculpture, signage, lighting and landscaping for existing roundabout at west end of the Business Loop.			$985,000 - $1,225,000	*Real Estate Acquisition not included in costs	Short Term
Garth Avenue	Proposed improvements at the intersection of Garth Avenue & Business Loop.			$1,132,000 - $1,200,000		Long Term
Rangeline Street	Proposed improvements at the intersection of Rangeline Street & Business Loop.			$1,242,000 - $1,300,000		Long Term
REGIONAL STORMWATER FACILTIES	**DESCRIPTION**			**COST OPINION**	**NOTES**	**SHORT TERM VS. LONG TERM***
Detention A	Detention basin opportunity located north of the east end of Business Loop. This basin would collect stormwater runoff from the 15.6 acre drainage area on the east end of Business Loop. This area drains north to the Bear Creek Watershed.			$351,000 - $370,000		Long Term
Detention B	Detention basin opportunity located at the southeast corner of Providence Road and I-70 junction. This basin would collect stormwater runoff from the 34.7 acre drainage area along the Business Loop and it drains north to the Bear Creek Watershed.			$425,000 - $445,000		Long Term
Detention C	Detention basin opportunity located in the northeast corner of Parkade Plaza's parking lot. This basin would collect stormwater runoff from the 45.6 acre drainage area on the west end of Business Loop and it drains north to the Bear Creek Watershed.			$317,000 - $340,000		Long Term
Detention D	Detention basin opportunity located on Mizzou North's lawn, it would collect stormwater runoff from the 30.3 acre drainage area along Business Loop. This location is a potential BMP opportunity as well as a potential placemaker opportunity.			$127,000 - $150,000		Long Term

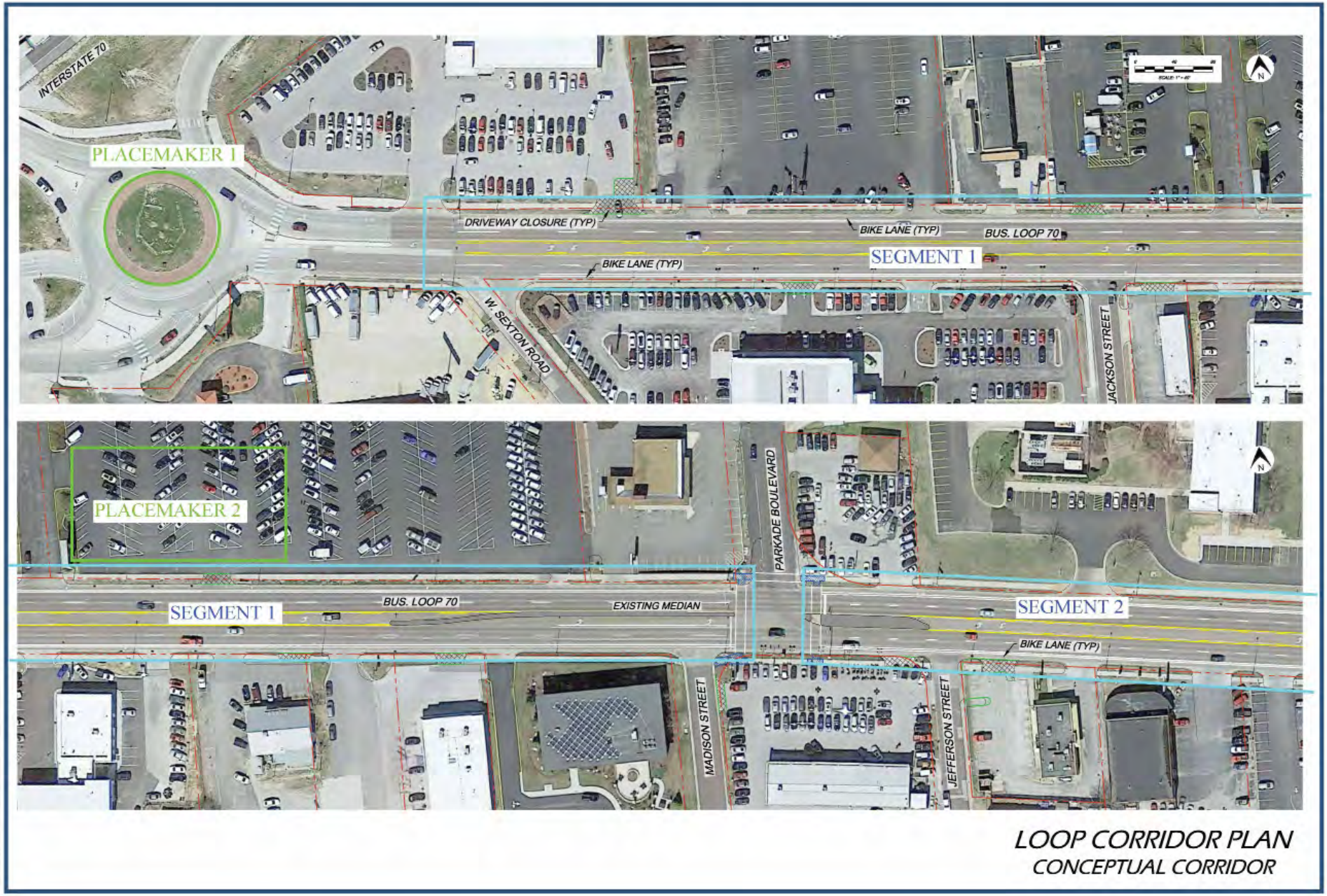
*Short Term (1-5 Years)
Long Term (5-10 Years)

Cost Opinion

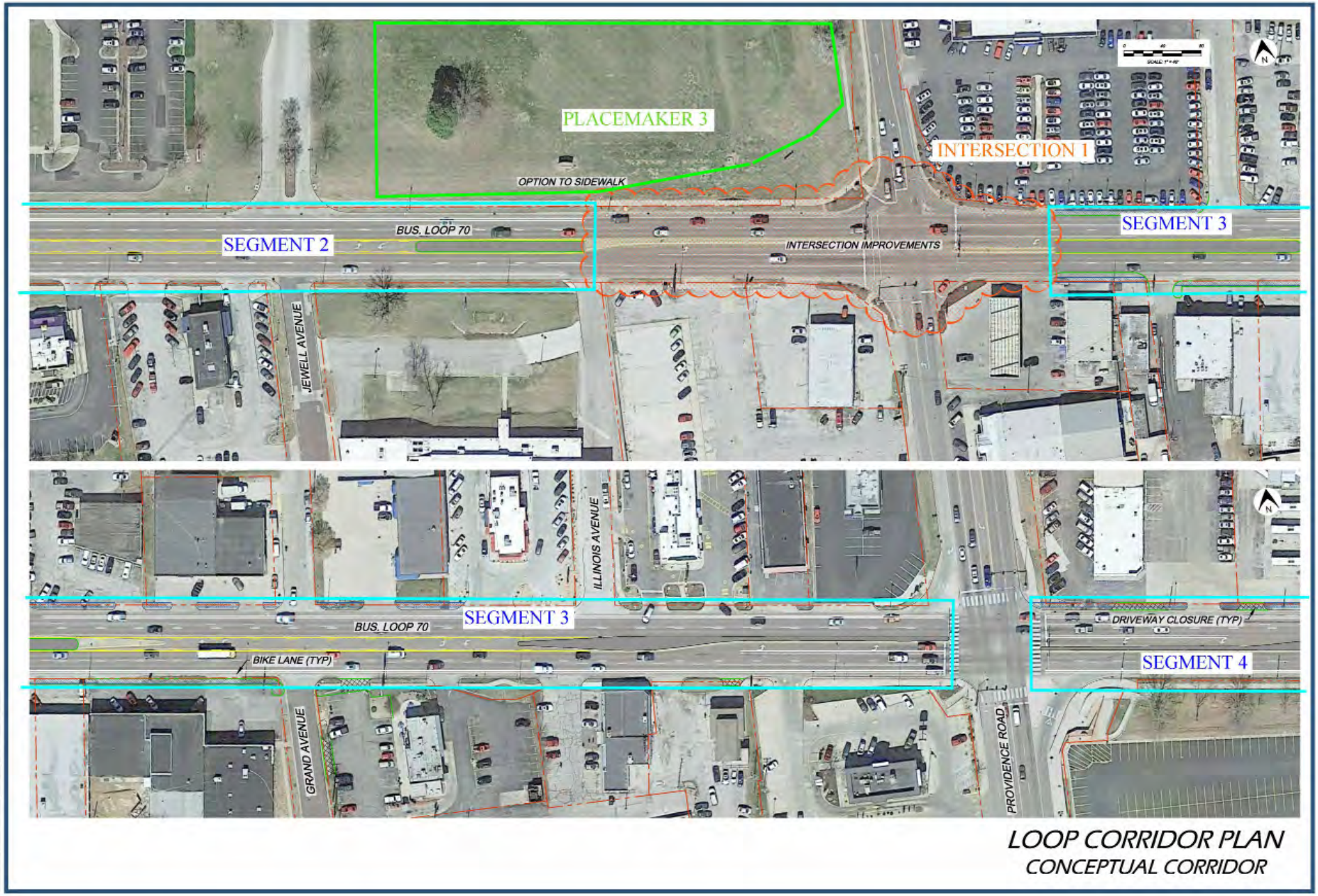
SITE-SPECIFIC STORMWATER FACILITIES	DESCRIPTION	COST OPINION	NOTES	SHORT TERM VS. LONG TERM*
BMP A-1 thru D-3	BMP opportunities within the Corridor drainage area as labeled on pg. 31 of the report. BMPs could include detention basins, rain gardens, or bioswales.	$270,000 - $330,000		Short Term
PLACEMAKING FOCUS AREAS	**DESCRIPTION**	**COST OPINION**	**NOTES**	**SHORT TERM VS. LONG TERM***
Parkade Center Plaza	Concept for a community area that would include: food truck parking, landscaping, charging station, benches, tables, chairs, restrooms, storage building and stormwater detention BMP. The area would be located in Parkade Plaza's south parking lot along the Business Loop.	$515,000 - $545,000	Real Estate Acquisition and Development costs not included	Short Term
Mizzou North	Concept for a community area with a stage located on Mizzou North's lawn. It would include: stage platform & canopy, festival lawn, restrooms, food truck parking, natural playground, native landscape and stormwater detention BMP.	$945,000 - $1,100,000	Real Estate Acquisition and Development costs not included	Long Term
Hickman High School Front Lawn	Concept for landscaping and stormwater BMP opportunities on Hickman High School's lawn along Business Loop. It would include: a BMP, botanical educational garden(s), ornamental fence along the street and a decomposed granite walk that leads a path from Hickman High School to the proposed pedestrian crosswalk signal at the intersection of the Loop and 7th Street.	$350,000 - $500,000	Easement costs not included	Short Term
Festival Lot	Concept for a festival lot located on the plot of land to the east of Flooring America along Business Loop. It would include an outdoor gathering and eating area with tables, benches and chairs, as well as a shipping container café with electricity, restrooms and storage.	$115,000 - $140,000	Real Estate Acquisition and Development costs not included	Short Term
Rangeline Street Intersection	Concept for redevelopment of parcels between the Loop and North Boulevard. Open space and stormwater BMPs would be used to create a gateway for the Corridor. New development would front on North Boulevard.	$1,150,000 - $1,500,000	Real Estate Acquisition and Development costs not included	Long Term
CORRIDOR ENHANCEMENTS, TOTAL COST				
		$13,255,875 - $14,725,000		

*Short Term (1-5 Years)
Long Term (5-10 Years)

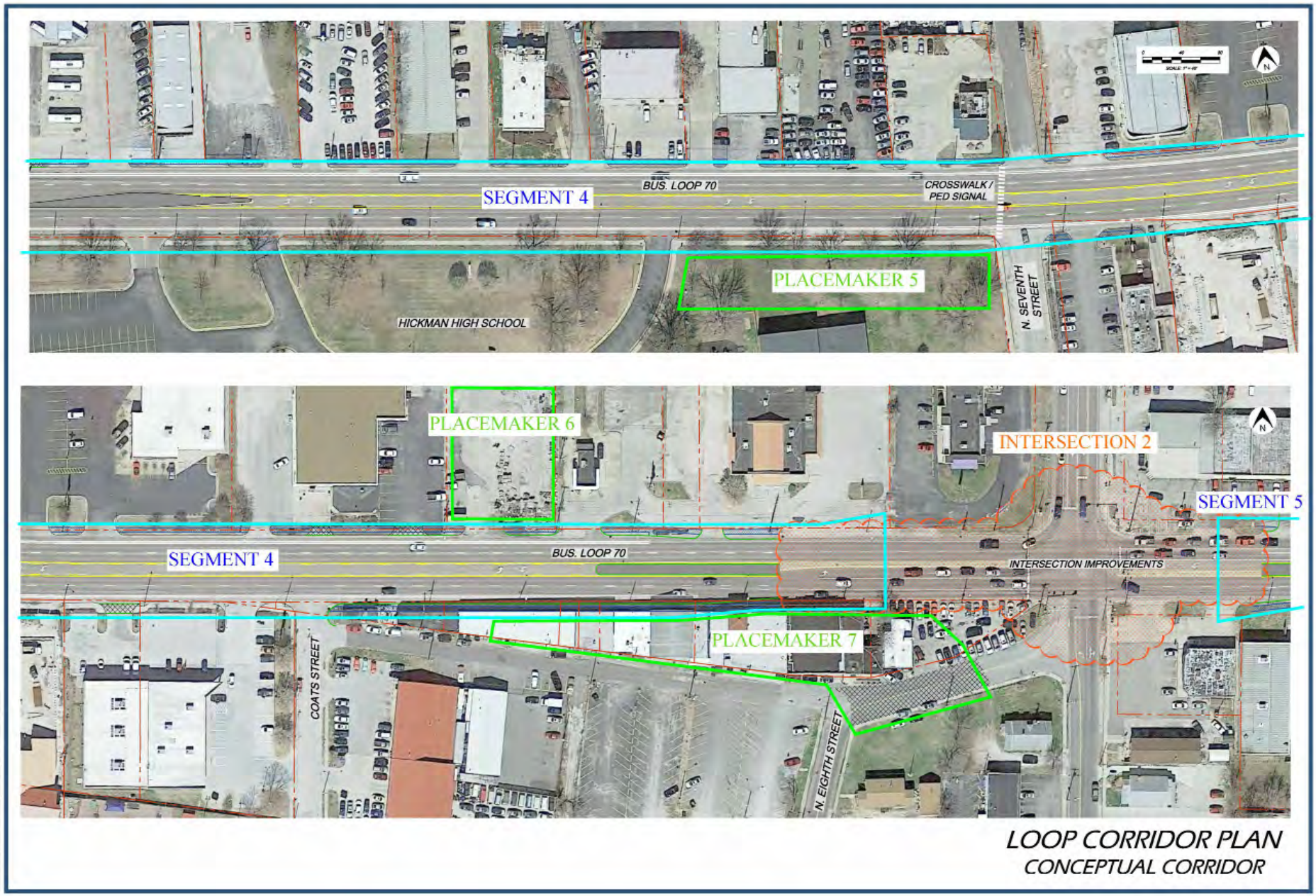
Cost Opinion



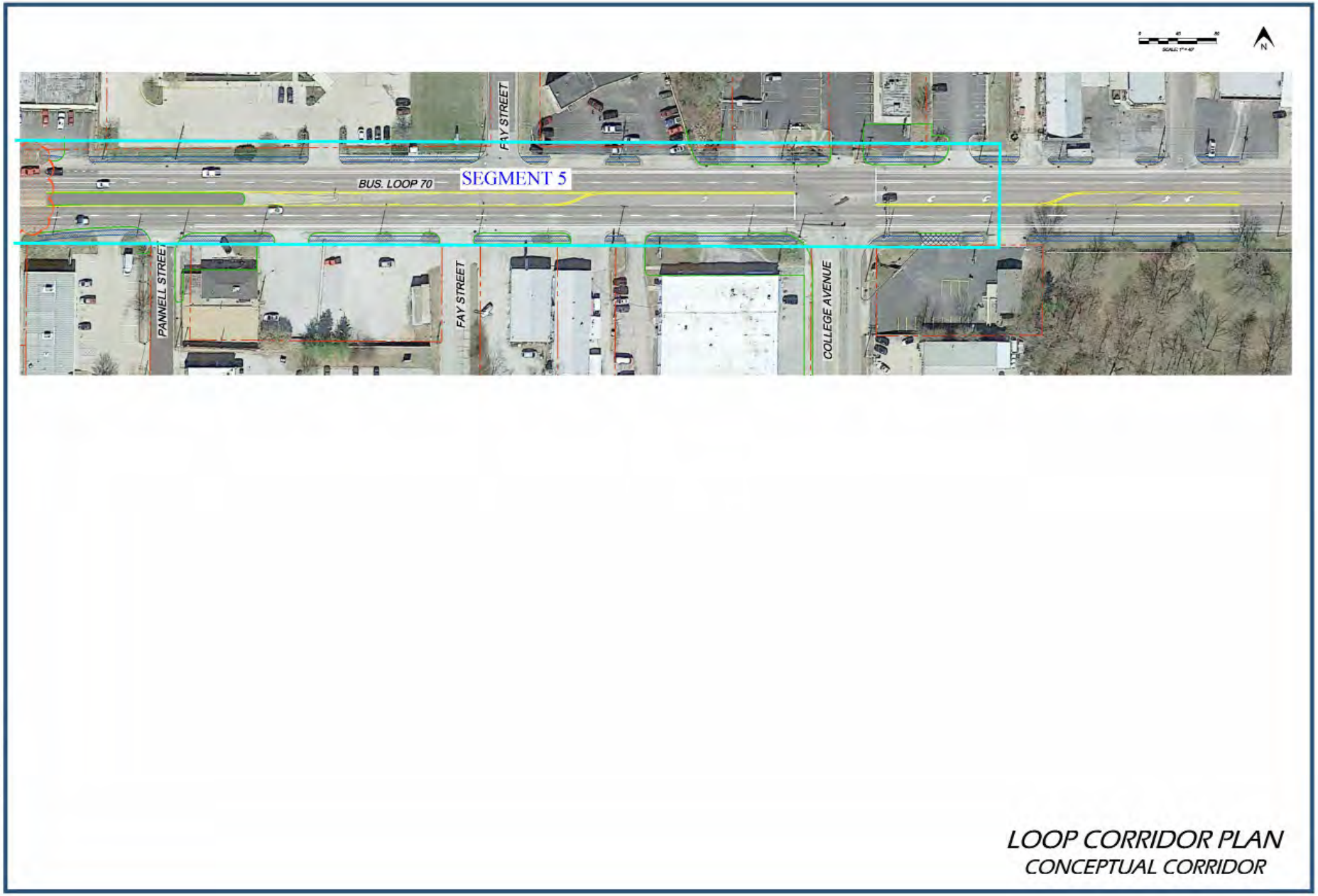
Cost Opinion



Cost Opinion



Cost Opinion



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06 | APPENDIX

06 | APPENDIX

EXHIBIT 1: CBB Technical Memo

EXHIBIT 2: ESS Technical Memo

EXHIBIT 1

I-70 Loop Corridor Enhancements Plan
December 19, 2017

CBB worked with Arcturis to identify ways to enhance the identity of the Columbia I-70 Business Loop, as well as to improve the safety and traffic operations for all modes of transportation. The study corridor spans between I-70 in the West, and College Avenue in the East (**Figure 1**). The Business I-70 "Loop" generally consists of five-lanes in this section and is owned and maintained by the Missouri Department of Transportation (MoDOT).

This technical memorandum provides observations on existing conditions along the corridor and offers alternatives for the roadway cross section and intersection improvements at the intersections with Range Line Street and Garth Avenue.

Figure 1: Business Loop 70 Corridor

Traffic Volumes: Historical average daily traffic volumes (AADT) were compiled at three segments along I-70 Business Loop. **Figures 2, 3, and 4** shows the AADT on I-70 Business Loop between I-70 and Providence Road, Providence Road to Range Line Street, Range Line Street to Paris Road. These counts show relativity stable traffic volumes over this time.

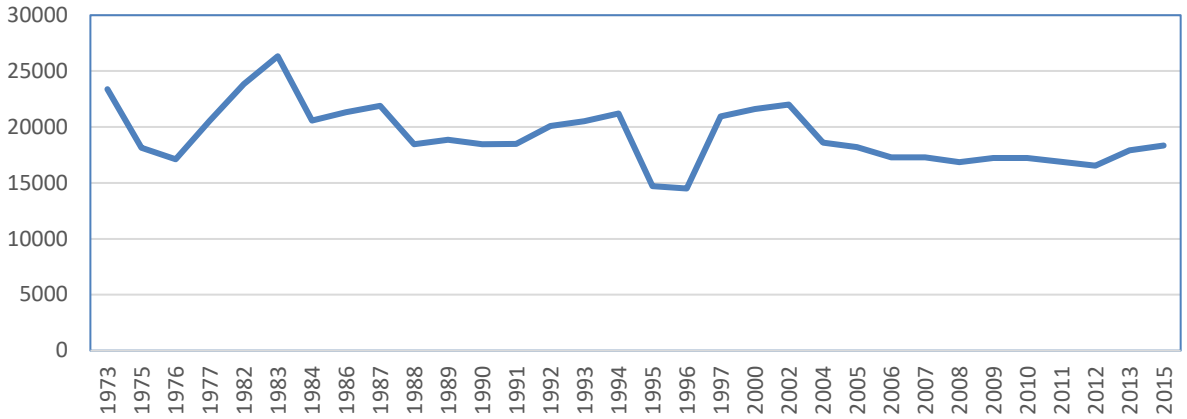


Figure 2: AADT of Business Loop 70 between I-70 and Providence Road

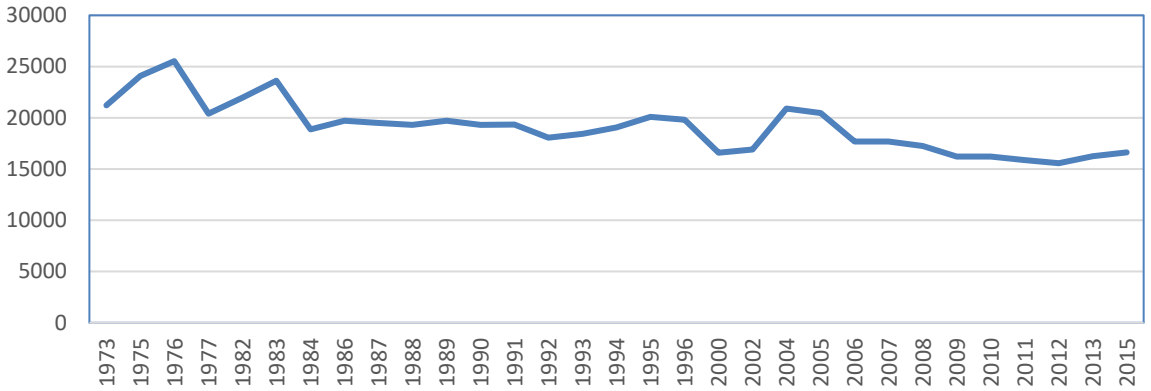


Figure 3: AADT of Business Loop 70 between Providence Road and Range Line Street

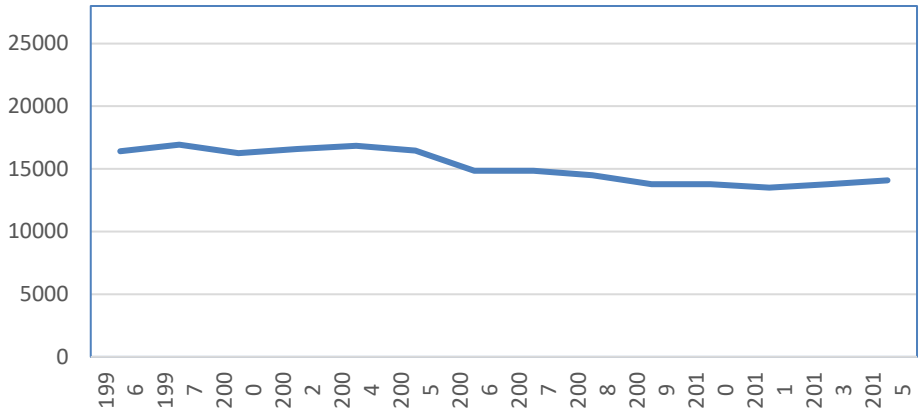


Figure 4: AADT of Business Loop 70 between Range Line Street and Paris Road

Bike lines are currently provided along both sides of the Business Loop 70 corridor. At the signalized intersections, the bike lanes merge with the right-most through lanes. A section of the I-70 Business Loop Bicycle Lane is shown in **Picture 1**.

Picture 1: Bike lane on I-70 Business Loop

The existing bicycle lanes are relatively narrow, include the gutter section, and are adjacent to relatively high-speed traffic on the Business Loop. Because of this, many bicycle users ride on the sidewalks as is shown in **Picture 2**.

Picture 2. Bicyclist on the Sidewalk

Sidewalks intermittently span both sides of the length of the Business Loop 70 corridor. **Picture 3** shows the sidewalk near Jefferson Street. However, many sections of sidewalk are missing. **Picture 4** shows a sidewalk along the corridor that ends abruptly. In some cases, the sidewalks are narrow and in poor maintenance, as shown in **Picture 5**.

Picture 3. Sidewalk near Jefferson Street

Picture 4. Sidewalk ends Abruptly

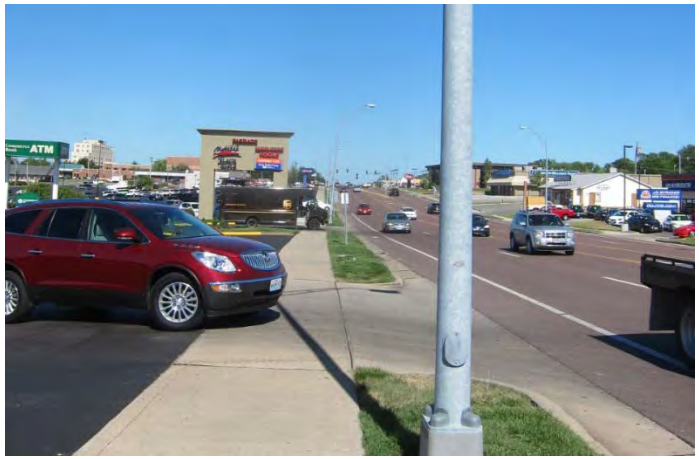
Picture 5. Sidewalk in Poor Condition

Signalized intersections along the corridor generally have crosswalks, but many do not have protected pedestrian crosswalks with pedestrian heads and push buttons. A typical intersection is shown in **Picture 6**. The Providence Road intersection was recently updated and includes pedestrian heads and push buttons, as shown in **Picture 7**.

Picture 6. Typical Pedestrian Crossing (at Parkade)

Picture 7. Pedestrian Traffic Signals at Providence Road

Access Management: The corridor has numerous curb-cuts that cause traffic conflicts for both vehicular traffic on the I-70 Business Loop as well as for bicyclists and pedestrians along the corridor. **Picture 8** shows a section of Business Loop near the west end of the corridor and **Picture 9** shows an open curb-cut near the center of the corridor. Access is controlled near intersections with raised medians as shown in **Picture 10**.



Picture 8. Driveways near West end of the Business Loop Corridor

Picture 9. Open Curb Cut

Picture 10. Access Control Intersection at Intersection

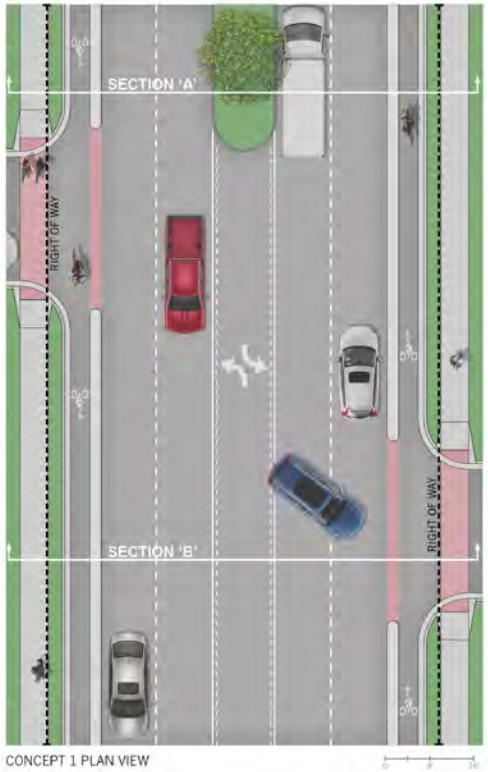
Cross Section Alternatives: Three concepts are proposed for the cross section of the Business Loop Corridor. The first concept, **Exhibit 1**, consists of two 10 foot lanes travelling in both East and West directions, separated by an 11-foot median. On either side of the roadway, there is a bike lane which is separated from the roadway by a 2-foot protection. Then, a 3-foot buffer separates the bike lane from a sidewalk. Concept 2 (**Exhibit 2**) is like concept 1; however, instead of a 2-foot protection separating the bike lane from the travel way, there is a 2-foot rumble strip divider separating the bike lane from the travel way. Concept 3 (**Exhibit 3**) shows two travel lanes in each direction, separated by a 10-foot median. One side of the roadway contains a 10-foot two-way bike lane separated from the travel way by a 3-foot protection. There is a 3-foot buffer between the two-way bike lane and the sidewalk. On the other side of the roadway, there is also a 3-foot buffer between the sidewalk and travel way.

It is important to note that it is not necessary to use only one of these cross-sections along the corridor. Rather, the various concepts can be used in different sections of the corridor. It would be desirable, however, to limit the number of changes between one-way and two-way bicycle facilities on either side of the street to minimize the number of times that bicyclists would need to cross the I-70 Business loop to travel along it.

I-70 LOOP CORRIDOR ENHANCEMENTS

THE LOOP
good to be in the loop

Bike/Pedestrian Circulation
Concept 1: Protected One Way Bike Lanes



CONCEPT 1 PLAN VIEW

SECTION 'A' - Protected One Way Bike Lane Each Direction w/ Landscape Median

SECTION 'B' - Protected One Way Bike Lane Each Direction @ Curb Cut w/ Turn Lane

ARCTURIS Engineering Surveys & Services

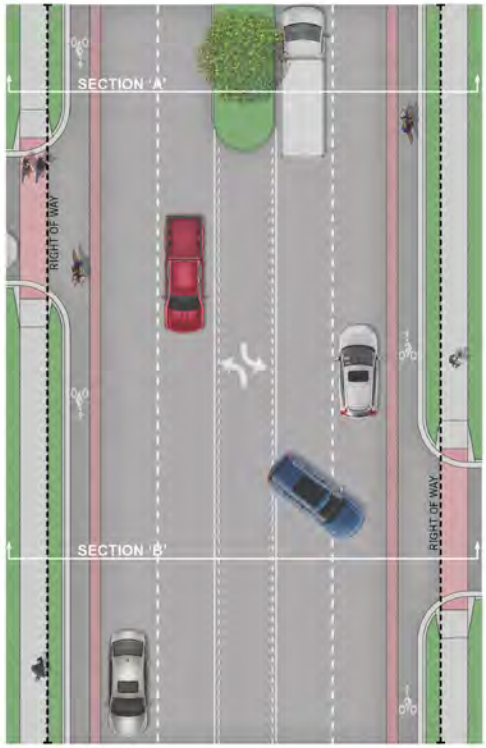
Exhibit 1: Concept 1 – Protected One Way Bike Lanes

I-70 LOOP CORRIDOR ENHANCEMENTS

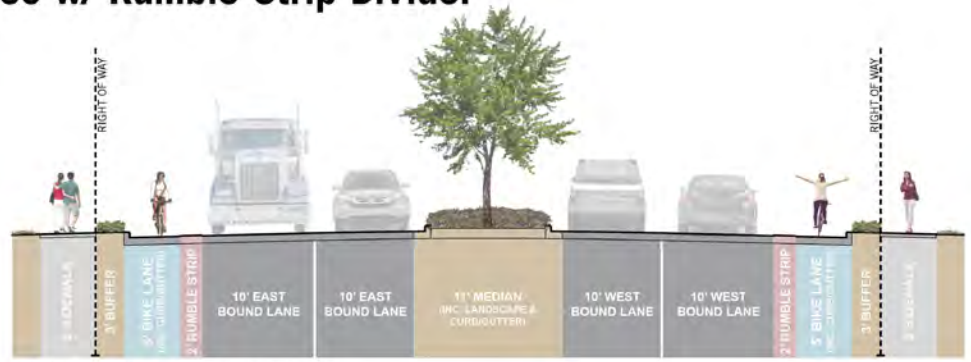
THE LOOP

good to be in the loop

Bike/Pedestrian Circulation
Concept 2: One Way Bike Lanes w/ Rumble Strip Divider



CONCEPT 2 PLAN VIEW



SECTION 'A' - One Way Bike Lane w/ Landscape Median

SECTION 'B' - One Way Bike Lane @ Curb Cut w/ Turn Lane

ARCTURIS Engineering Surveys & Services

Exhibit 2: Concept2 – One Way Bike Lanes with Rumble Strip Divider

Exhibit 3: Concept 3 – Protected Two Way Bike Lanes

Intersection Design Concepts: Roundabout concepts were developed for the intersections of both Range Line Street and Garth Avenue. Because of the heavy westbound right-turn traffic movement at Range Line Street, the addition of a westbound right turn lane was explored at that location as well.

The first concept at the intersection of Business Loop 70 and Range Line Street is a roundabout, shown in **Exhibit 4**. The concept maintains access to the businesses surrounding the proposed roundabout. The second concept, **Exhibit 5**, consists of adding a right turn lane to the westbound approach at Business Loop 70 and Range Line Street.

The first concept at the intersection of Business Loop 70 and Garth Avenue is a roundabout, depicted in **Exhibit 6**. The layout maintains access to the businesses in the northeast, southeast, and southwest quadrants.

CONCEPTUAL ONLY
FINAL PLAN WILL REQUIRE COOPERATION OF PEROPERTY OWNERS AND OTHER STAKEHOLDERS

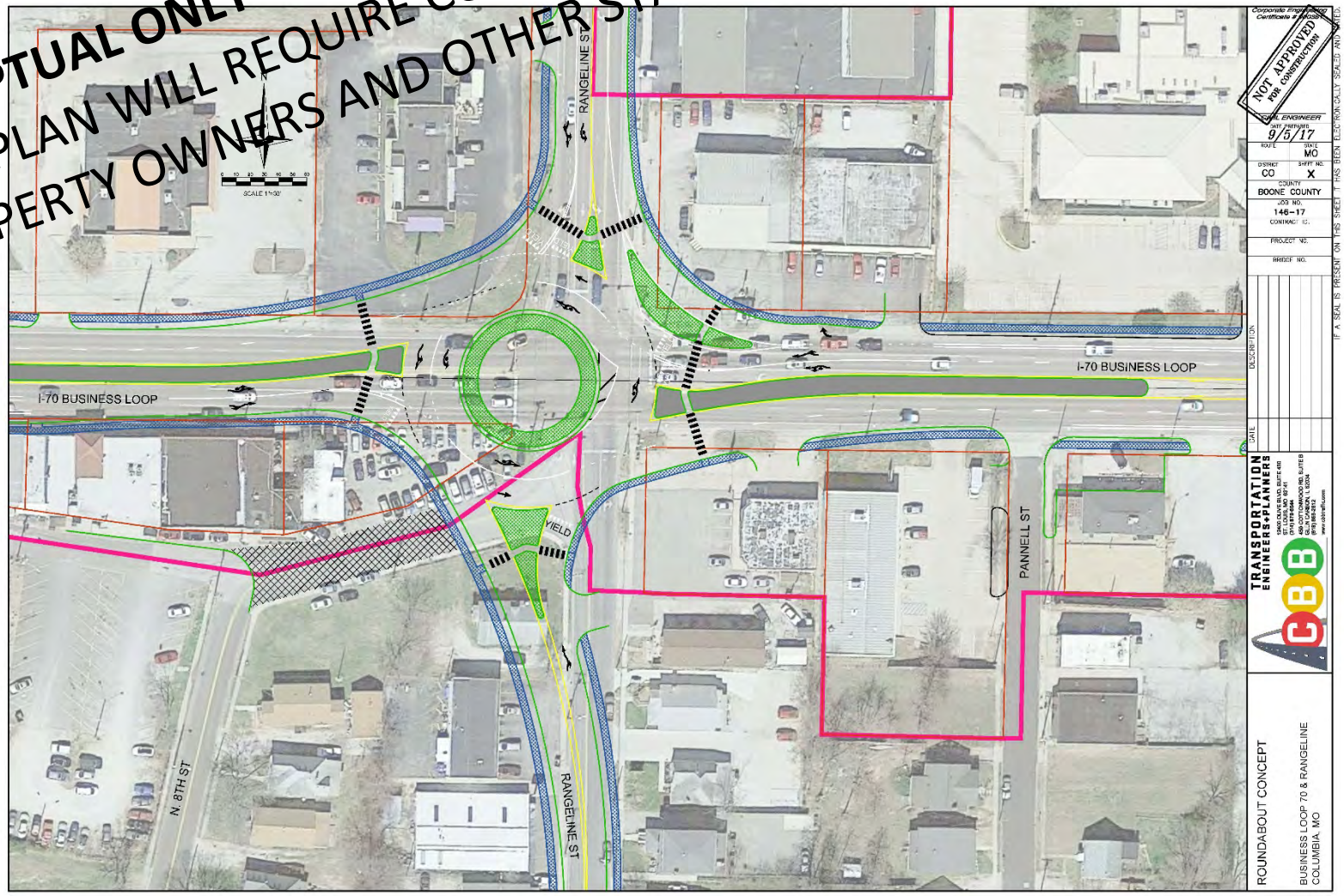


Exhibit 4: Proposed Roundabout at Range Line Street

Exhibit 5: Proposed Westbound Right-Turn Lane at Range Line Street

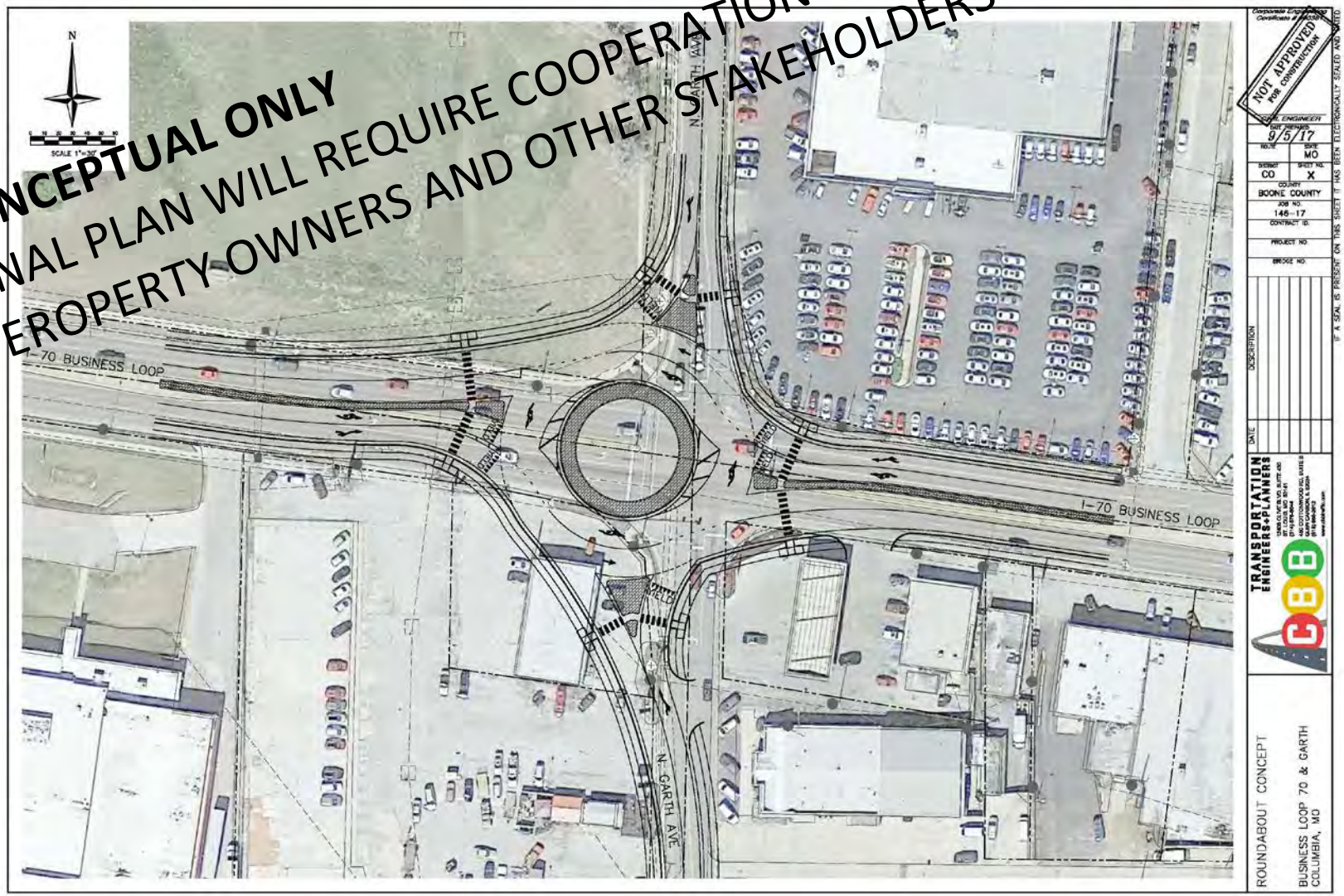


Exhibit 6: Proposed Roundabout at Garth Avenue

Traffic Operations: Traffic operational analysis was completed using Synchro 10 (for traffic signals) and SIDRA (for roundabouts). The traffic operations analysis includes measures of effectiveness generated by the Synchro and SIDRA software packages. The operating conditions were graded in accordance with six levels of traffic service (Level A "Free Flow" to Level F "Fully Saturated"). Levels of service (LOS) are measures of traffic flow which consider such factors as speed, delay, traffic interruptions, safety, driver comfort, and convenience. Based on the character of this area, we believe that LOS D would be an appropriate target for peak period traffic operations. **Table 1** summarizes the LOS thresholds used in this analysis.

Table 1: LOS Thresholds

Level of Service (LOS)	Control Delay per Vehicle (sec/veh)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

The operational analysis was completed with traffic volume counts provided by MoDOT. Based on these counts, the analysis results provided in **Table 2** show that LOS would improve marginally at Range Line Street with the addition of a westbound right-turn lane. However, the results in **Tables 2 and 3** show that roundabouts could improve the traffic operations at both locations.

Table 2. Range Line Street Intersection

Movement	Existing Conditions (Traffic Signal)		Add Westbound Right-Turn Lane to Traffic Signal		Roundabout	
	AM	PM	AM	PM	AM	PM
EB	C (31.5)	C (28.9)	C (32.1)	C (23.9)	B (13.8)	B (12.9)
WB	D (40.5)	D (44.7)	C (30.2)	C (26.2)	A (5.7)	B (11.9)
NB	C (24.6)	D (45.7)	C (23.8)	D (45.7)	A (9.2)	D (27.7)
SB	B (13.3)	C (23.1)	B (12.6)	C (23.1)	C (18.2)	C (15.2)
Overall	**C (25.4)**	**D (35.6)**	**C (22.3)**	**C (27.6)**	**B (13.3)**	**C (15.1)**

Table 3. Garth Avenue Intersection

Movement	Existing Conditions (Traffic Signal)		Roundabout	
	AM	PM	AM	PM
EB	C (32.3)	C (30.9)	A (8.2)	B (11.8)
WB	C (31.1)	D (40.5)	A (7.8)	C (15.7)
NB	A (9.3)	C (21.1)	A (7.6)	C (16.0)
SB	B (11.6)	C (20.6)	B (13.1)	C (17.2)
Overall	**C (25.4)**	**C (31.9)**	**A (9.0)**	**B (14.6)**

EXHIBIT 2

LOOP CORRIDOR PLAN

Engineering Surveys & Services Text Narrative

BIKE/PED CIRCULATION

A consistent expectation from corridor stakeholders, as well as a stated goal from a significant number of community leaders and the general public, is to provide much better accommodation of bicycle and pedestrian users on The Loop. Existing conditions are sub-standard, with several breaks in pedestrian accessible routes (PAR) throughout the CID boundary. Due to a combination of recent projects on commercial properties, and work by the City of Columbia to move overhead electric distribution lines underground, the existing sidewalk availability and condition is better overall on the west side than the east side.

Future Sidewalks

It is desired that ADA-compliant sidewalks are available throughout the entire corridor. This will require replacement of sidewalk in poor condition, adding sidewalk where gaps in PAR existing, addition of sidewalk ramps, replacement or modification of existing ramps, etc. There are also areas where future planning and design efforts will require more detailed evaluation to determine how best to move forward with improvements, such as:

- The slope and condition of street crossings and driveways, and determination of upgrades needed to meet ADA tolerances
- Locations where there are obstructions in the typical location of proposed sidewalks, and determination of upgrades needed to meet ADA tolerances
- Identify the need for and cost of addition ROW in order to provide upgrades needed for ADA compliance; this will influence prioritization of sidewalk segments
- Identify those segments of sidewalk identified by the City of Columbia's *2012 Sidewalk Master Plan Update*
- Cost-sharing for improvements that are off-ROW, such as where pavement upgrades may need to be expanded to meet longitudinal or cross-slope limits

Driveway Consolidation

One of the primary features of the Loop Corridor Plan is the addition of a more pronounced corridor edge. This would be accomplished by consolidating many of the existing driveway access points, creating a more prominent greenspace between the curb and sidewalk, and opening opportunities for placemaking along the Loop. This will also benefit the flow of vehicular and bike/ped traffic, with a significant reduction in conflict points corridor-wide. The displays provided in the report represent an approximate removal of 38% of existing driveways. It is expected that fewer drive consolidations will actually be accomplished due to issues that come up with individual property owners during the implementation design process, but this number does not include drive openings to parcels that are off the Business Loop on side streets.

LOOP CORRIDOR PLAN

Engineering Surveys & Services Text Narrative

It should be noted that, for the purposes of developing cost opinions for the report, the drive consolidations assume replacing infrastructure (curb, gutter, inlets, etc.) only to fill in driveway gaps, not constructing new curb along the full corridor.

Protected Bike Lanes

Options to provide improved accessibility and safety for bicyclists was an important goal for many that expressed comments at the public meetings. The lack of available right-of-way (ROW) eliminates the option of off-road bike facilities. On-road bike facilities, with options of lanes on each side of the roadway, and with a two-directional bike lane on one side of the roadway, were reviewed. The existing on-road bike lanes are painted, but not protected, and are challenging for all but the most experienced riders by the narrow lane widths of the driving lanes, the poor condition of the gutter-pan on parts of the corridor, and the large number of conflicts caused by driveways.

It was decided the preferred approach was to provide a protected, on-road bike lane in both directions. This option was preferred by the public and the perception that safety may be compromised by having bikes moving both directions on one side of the roadway. The factor that loomed largest in this analysis was the high concentration of driveways along The Loop. This issue also influenced the means by which the bike lane would be separated from the driving lane. Having a physical barrier, such as a curb or the use of flexible delineators, was problematic due to the number of breaks that would be necessary, even with the consolidation of a number of driveways. This was expected to result in increased maintenance, and possibly challenge biker safety in a significant, though different, way than the challenge of having no bike lane protection at all. For the purposes of this report, it was proposed to protect the bike lanes with an intermittent rumble strip between the outer driving lanes and bike lanes, with breaks at roadway intersections and other regular locations to allow bikes to cross the street without having to drive over the rumble strips.

STORM WATER BMPS

Development on Business Loop 70 (The Loop) occurred at a time when storm water management consisted of conveying runoff as quickly and efficiently as possible, often causing unintended consequences for areas downstream. The storm water management of The Loop currently consists of a combination of surface, sheet flow and enclosed pipe systems to convey storm water to nearby creeks and streams, and other public storm sewers. Little to no control of storm water discharge rates and volume (provided by detention facilities) or treatment of storm water (provided by water quality facilities) exists on The Loop.

In 2007, the City of Columbia (City) adopted a revised storm water management standard for all property greater than 1-acre. This standard requires storm water detention of up to the “100-year storm” to predeveloped rates, including redevelopment of existing property assuming a predeveloped condition of “Meadow (CN=78)”. In addition, mitigation of impacts to storm water quality must also be provided for in both new development and redevelopment in the form of Best Management Practices (BMPs). This includes such facilities as bioretention basins, extended detention, storm water filtration and infiltration, and other similar measures. This mitigation is scored by a “Level of Service” standard defined in the “Manual of Best Management Practices for Stormwater Quality” (hereafter references as the “MARC Manual”), a publication of the Mid-American Regional Council (MARC), which serves as the Kansas City region’s metropolitan planning organization. The MARC Manual compares post-development impervious cover to predeveloped impervious cover. The greater the change in impervious

cover, the more intensive the treatment required. The City requirements allow for redevelopment to implement these standards over 3 to 4 redevelopments, no matter the change in the impervious area or scale of the improvements, to meet the requirements of new development assume a predeveloped condition of meadow. Despite this phased approach and the limited expense of the first redevelopment, the cost of the second phase and onward often exceeds the cost of storm water management for equivalent new development. Furthermore, the phased expense can often cause cost to be two times or more of that required for new development.

For redevelopment to occur on The Loop, storm water detention and water quality treatment will be required for each property over an acre in size and for roadway, sidewalk, and other improvements. These features can be expensive to install and can impact the developable area of a property, potential utilizing 10% to 30% of a parcel's land area. Since approximately 76% of The Loop area consists of properties greater than one-acre, and with the expectation redevelopment may consolidate smaller parcels in parcels greater than one acre, it is recommended to evaluated a corridor-wide approach to provide storm water management for redevelopment of the Loop. This approach will allow for the following:

1. Efficient consolidation of detention and water quality, allowing for entire parcels to be redeveloped without the loss of land to BMPs and detention.
2. Reduced cost of construction and maintenance of BMPs and detention.
3. Potential to gain additional improvement in storm water management to downstream areas.
4. An opportunity to provide education regarding storm water management that will likely not occur with private BMPs and detention.
5. An incentive to redevelopment the Loop by providing property that will not require the cost of storm water management that is not available in other areas of the community.

A corridor-wide approach would require an initial investment into the construction of storm water detention and BMPs that will be able to serve proposed improvements to the Loop, as well as the private redevelopment on the Loop. Due to the upfront investment, it is proposed to implement this plan using a phased approach. The attached "Storm Water Management" exhibits highlights four potential locations for "regional" (i.e. corridor-wide) storm water detention and locations for potential BMP installation. The corridor is located in four distinct sub-watersheds (three discharging to Bear Creek, one discharges to Flat Branch Creek). In each watershed, detention is proposed to reduce the peak runoff rates from each watershed. In addition, several locations for BMPs are identified in smaller sub-basins upstream of the detention basins.

We envision the implementation of the storm water improvements be approved as a storm water master plan with the City, effectively creating a custom standard for storm water management tailored to the needs of The Loop. This plan will allow phased construction of improvements over many years, based on the level of actual redevelopment on The Loop, with the ultimate goal of providing detention and water quality to the redevelopment of 50% of the entire Loop corridor, equivalent to City standards, including the infrastructure improvements. Unlike the redevelopment standard adopted by the City, this standard will not require reconstruction of previously completed storm water improvements and can be applied to multiple properties. Figure 1 provides a map of the potential detention and BMP

opportunities to reach this goal. The actual locations may vary. For each location, we have prepared a Preliminary Opinion of Probable Construction Costs (OPC) and a table table summarizing the cost of each location can be found in the body of the report.

As noted, we envision the construction of these improvements will occur over many years, likely beyond the ten-year scope of this plan. As currently envisioned, it is proposed that regional detention and BMPs associated with other projects be constructed first, in conjunction with the placemaking opportunities. These basins and BMPs will provide capacity to offset improvements anywhere in The Loop. As the capacity is utilized for detention and BMPs, additional detention and BMPs can be constructed.

Site-Specific Stormwater Facilities
BMPs focus on the water quality of stormwater. Some water quality benefits include: lower amounts of contaminants such as oils or greases from parking lots, reduced soil erosion, trash removal and reduced sediments. BMP's can also consist of infiltration or filtering practices. These allow the stormwater to infiltrate into the soil over an extended period of time and/or pass through a filter bed made up of materials such as sand or organic matter.

Regional Stormwater Facilities
Basins for temporary storage of stormwater runoff designed to control runoff from heavy rainfall. These dedicated areas help prevent flooding of downstream locations, properties, streams and stormwater pipes.

Notes:
- Total drainage area within the Loop boundary = 147.3 acres
- Acre labels given above account for the land areas within the Loop boundary in their respective watershed.

*Conceptual Only - Collaboration with property owners, business owners, the City, and MoDOT required for implementation

Figure 1: Corridor Stormwater Management Conceptual Plan

FY 2018 Overall Summary: 3-5 Years Projects

	Project Name	Ward	Current Funding Request
Streets, Sidewalks and Major Maintenance - Streets Total Current Funding Request = $19,690,000			
1	Ash Street 4-Way Stop Removal [ID: 1525]	1	$2,600,000
2	Discovery Parkway: Gans to New Haven - 00633 [ID: 1155]	6	$4,860,000
3	Forum Blvd-Green Meadows to Nifong - 00653 [ID: 1979]	5	$2,200,000
4	I-70 Dr & Keene Roundabout 00658 [ID: 1998]		$850,000
5	Nifong -Providence to Forum 4 Lane - 00643 [ID: 97]	5	$9,130,000
6	Providence - Broadway Turn Lane [ID: 2067]	1	$50,000
7	Vandiver Drive & Paris Road 00522 [ID: 1523]	3	
Streets, Sidewalks and Major Maintenance - Sidewalks Total Current Funding Request = $171,850			
1	Leslie Ln Sdwlk - N Garth Av to Newton Dr [ID: 238]	2	$171,850
Parks and Recreation - Parks Projects Total Current Funding Request = $4,595,000			
1	Again Street Park Improvements [ID: 1952]	1	$100,000
2	ARC Gym/Fitness Expansion [ID: 297]	1	$420,000
3	Battle Park Phase I Development [ID: 1959]	3	$320,000
4	Clary-Shy Community Park Improvements: Phase II [ID: 2030]	1	$350,000
5	Cosmo Rec Area: Parks Mgmt Center Improvements [ID: 457]	2	$200,000
6	Cosmo Rec Area: Rainbow Softball Center RS086 [ID: 1994]	2	$450,000
7	Cosmo Rec Area: Shelter Replacement [ID: 2029]	2	$275,000
8	Cosmo-Bethel Park Improvements [ID: 1953]	5	$125,000
9	Fairview Park/Bonnie View: Phase II Improvements [ID: 309]	4	$125,000
10	Founders Park at Flat Branch [ID: 2017]	1	$750,000
11	Gates Park Development [ID: 2028]	5	$275,000
12	MKT Wetlands/Forum Nature Area Restoration [ID: 1956]	5	$80,000
13	Rock Bridge Park Improvements [ID: 1657]	5	$125,000
14	Rock Quarry Park Improvements [ID: 308]	6	$350,000
15	Stephens Lake Park: E. Walnut Development [ID: 313]	3	$300,000
16	Strawn Park: Phase II [ID: 1637]	4	$200,000
17	The Vinyards/El Chapparal Lake/Park Development [ID: 1950]	6	$75,000
18	Worley St Park Improvement [ID: 1633]	1	$75,000
Parks and Recreation - Greenbelt/Trails Total Current Funding Request = $3,370,000			
1	Chapel Hill Connector - Perche Creek Trail [ID: 1949]	4	$500,000
2	Hinkson Creek Trail: Stephens to Clark Lane [ID: 1188]	3	$950,000
3	Perche Cr Trl Ph I: MKT to Gillespie Bridge- 00699 [ID: 427]	4 & 5	$1,020,000
4	Perche Crk Trail Ph 2: Gillespie to Broadway [ID: 1285]	4	$900,000
Public Safety - Fire Total Current Funding Request = $6,200,000			
1	Replace 2003 Quint (14 years old) 00661 [ID: 1400]		$950,000
2	Replace 2006 Quint (14 years old) [ID: 1407]		$1,100,000
3	Replace 2006 Quint (15 years old) [ID: 1408]		$1,150,000
4	Replace/Remodel Fire Station 6 [ID: 1409]	4	$3,000,000
Electric Total Current Funding Request = $20,100,000			
1	Brushwood Lake Road Loop Closure - E0185 [ID: 1602]	5 & Outside City	$750,000
2	Business Loop 70 - Phase 5 Undergrounding - E0140 [ID: 689]	1 & 3	$2,450,000
3	McBaine Substation Upgrades - E0196 [ID: 1840]		$2,500,000
4	Mill Creek & McBaine Interconnection - E0195 [ID: 1839]		$10,000,000
5	Warehouse & Enclosed Equipment Parking - E0176 [ID: 1593]	3	$4,400,000
Water Total Current Funding Request = $60,086,300			
1	16" Main - Barberry to Worley - 4,300 FT - W0244 [ID: 1495]	1 & 2	$1,400,000
2	16" Main-Hwy63 - West Crossing to Stadium-W0229 [ID: 1283]	3	

Business Loop 70 - Phase 5 Undergrounding - E0140

Description:
Business Loop 70 project to convert 3,600 feet of overhead line to underground between Providence Rd and College Ave.

Ward	Begin Design	Begin Construction
1 & 3	2021	2022

Eligible for Percent for Arts?	No
Current Funding Request:	$2,450,000
Total Appropriated:	$0
Total City Project Cost:	$2,450,000

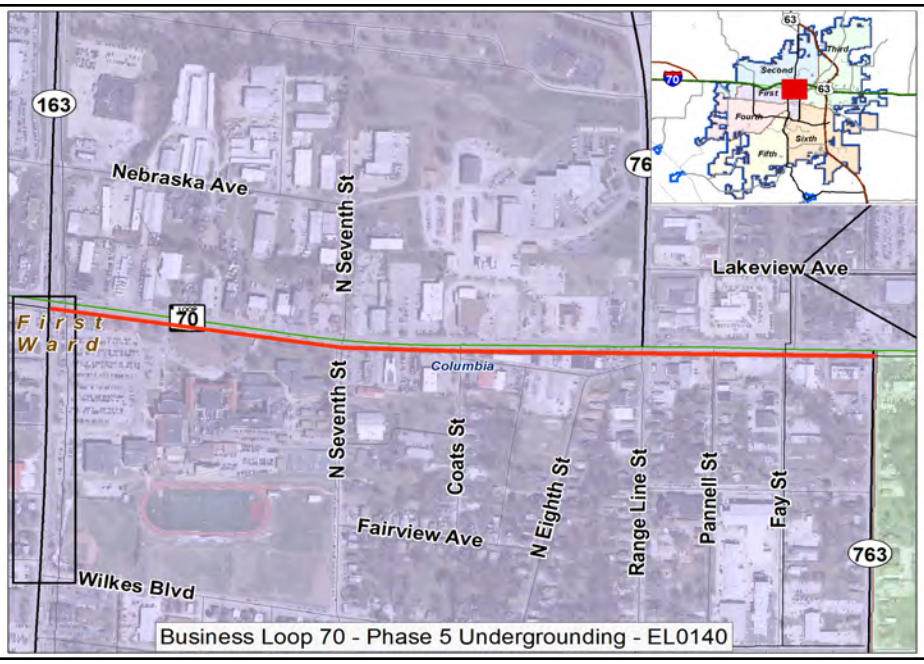
Current Status:
Funding targeted for FY 2021

Factors Effecting Timing/Completion of Project:
Funding, easements, weather, coordination with other utilities (phone, cable)

Eligible Funding Sources:
Enterprise revenue, Future Ballot

Master Plan:

FY	Eligible Funding Sources	Amount
2021	Unfunded	$2,450,000
		$2,450,000



FY 2018 Overall Summary: 6-10 Years Projects

	Project Name	Ward	Current Funding Request
Parks and Recreation - Parks Projects Total Current Funding Request = $13,669,000			
36	Twin Lakes Rec Area: Aquatic Facility-Pool [ID: 1635]	4	$1,500,000
37	Twin Lakes Rec Area: Lake & Misc Park Improvements [ID: 1636]	4	$411,500
38	Valleyview Park Improvements [ID: 1640]	2	$130,000
39	Waters-Moss Develop Phase II: Waters & Jones Bldgs [ID: 1632]	6	$125,000
40	Westwinds Park Improvements [ID: 1639]	4	$75,000
Parks and Recreation - Greenbelt/Trails Total Current Funding Request = $21,290,500			
1	Bear Creek Trail Renovation: Creasy to Skatepark [ID: 1098]	2	$1,075,000
2	Bear Creek Trail: Albert-Oakland Park to Lange [ID: 380]	2	$950,000
3	Bear Creek Trail: CCRA to Blackfoot Rd. [ID: 1659]	2	$500,000
4	Bear Creek Trail: Hard Surface Wash/Problem [ID: 447]	2	$710,000
5	Bear Creek Trail: Lange to Fairgrounds [ID: 437]	2,3	$2,600,000
6	COLT RR Trail Ph 1: Columbia College to Vandiver [ID: 1273]	3	$3,000,000
7	Cosmo Park Bear Creek Boardwalk Renovation [ID: 378]	2	$125,000
8	Cosmo Park Trail-Stadium Diverging Diamond to BCT [ID: 1581]	2	$700,000
9	Cow Branch: Providence to Auburn Hills [ID: 448]	2	$1,820,000
10	Hinkson Creek Trail: Clark Lane to Vandiver [ID: 1961]	3	$1,750,000
11	Hinkson Creek Trail: Vandiver pedway to Colt RR [ID: 1661]	3	$1,300,000
12	Hominy Creek Trail: Old 63 to Green Valley [ID: 1660]	6	$800,000
13	MKT Bridge Replacements: #10 [ID: 1816]	4 & 5	$320,000
14	MKT Trail: New Restroom at Flat Branch Park [ID: 1669]	1	$200,000
15	MKT Trail: Scott Blvd Improvements [ID: 1676]	5	$40,500
16	N Fork Grindstone Trail: Confluence to Eastport Pk [ID: 433]	6,3	$2,700,000
17	Perche Creek Trail Ph 3: Broadway to I-70 [ID: 1663]	2,4	$2,600,000
18	Trail restroom: Location TBD [ID: 1648]	TBD	$100,000
Public Safety - Police Total Current Funding Request = $7,000,000			
1	Police Headquarters Building [ID: 1192]	1	$7,000,000
Public Safety - Fire Total Current Funding Request = $10,953,000			
1	Remodel Admin. & Meeting/Conf. Room [ID: 1795]	1	$1,500,000
2	Replace 1996 Bomb Squad [ID: 1405]		$800,000
3	Replace 1999 Foam Truck [ID: 1401]		$600,000
4	Replace 2009 Quint (11 years old) [ID: 1406]		$1,200,000
5	Replace 2009 Quint (14 years old) [ID: 1410]		$1,200,000
6	Replace 2009 Quint (15 years old) [ID: 1404]		$1,250,000
7	Replace 2009 Squad (15 years old) [ID: 1414]		$750,000
8	Replace 2010 Quint [ID: 1801]		$1,153,000
9	Replace/Remodel Fire Station 4 [ID: 1403]		$2,500,000
Other General Government Total Current Funding Request = $4,740,000			
1	Addl Salt Storage Bldg (Mun Serv Center S) - 00632 [ID: 1831]		$2,740,000
2	Garage and fueling station (Mun Serv Center S) [ID: 1832]		$2,000,000
Electric Total Current Funding Request = $3,700,000			
1	Broadway Undergrounding - E0120 [ID: 549]	1	$2,200,000
2	Business Loop 70 - Phase 6 Undergrounding - E0141 [ID: 690]	1 & 3	$1,500,000
Water Total Current Funding Request = $4,547,000			
1	Broadway Main Replacement Garth to W Blvd - W0141 [ID: 575]	1 & 4	$730,000
2	Gibbs Road/Dawn Drive - W0272 [ID: 1934]		$1,424,000
3	Waco Rd - Brown Station to Oakland - W0251 [ID: 1502]	3	$1,292,000
4	Waco Rd - Route B to Rogers - W0252 [ID: 1503]	3	$1,101,000

Business Loop 70 - Phase 6 Undergrounding - E0141

Description:
Business Loop 70 project to convert overhead line to underground, between College Ave and Power Plant.

Ward	Begin Design	Begin Construction
1 & 3	2022	2023

Eligible for Percent for Arts?	No
Current Funding Request:	$1,500,000
Total Appropriated:	$0
Total City Project Cost:	$1,500,000

Current Status:
Proposed project

Factors Effecting Timing/Completion of Project:
Funding, easements, weather

Eligible Funding Sources:
Enterprise revenue, Future Ballot

Master Plan:

FY	Eligible Funding Sources	Amount
2022	Unfunded	$1,500,000
		$1,500,000