

BICYCLE & TRAIL SUMMARY SHEETS

BICYCLE & PEDESTRIAN PROJECT OVERVIEW

SIDEWALK PRIORITY HEAT MAP

Through the Connect Muskogee process, a pedestrian priority heat map was created to help quide future investment in pedestrian facilities. This map was created using data collected from the online map survey conducted during the public engagement phase of the project.



BICYCLE & TRAIL PROJECTS





BICYCLE PROJECTS (pages 3-8)

N 12th St / N 11th St from MLK St to N 6th St

2

- Main St from W Southside Blvd to Shawnee Bypass
- 3 Columbus Ave / E Cincinnati Ave from 7th St to **Spaulding Park**



Reference the *Muskogee Trails Master Plan* for additional information on other future trail projects.

TRAIL PROJECTS (pages 9-14)

Coody Creek Trail from S 2nd St to Gulick St Trail

Gulick St Trail from Robison Park to Burbank St

Neighborhood Trail from S York St to Hilltop Ave



BICYCLE & TRAIL SUMMARY SHEETS

BICYCLE & PEDESTRIAN POLICY RECOMMENDATIONS

POLICY & PRACTICE RECOMMENDATIONS

A central goal of this plan is to encourage residents and visitors in Muskogee to utilize the active transportation modes more often: walking, bicycling, and transit use. It is well established that this can provide many benefits to individuals and to the community as a whole related to personal health, air guality, and economic benefits.

COMPLETE STREETS ACCOMMODATION

1. Expand the Complete Streets (CS) routine accommodation program. Some of the least expensive complete street improvements can be implemented when other roadway work is going on, including routine paving and striping projects. For example, FHWA has provided guidance on how on-street bicycle facilities can be incorporated during resurfacing work. The following are specific activities that might support continued CS work:

- Staff training, such as paving and painting crews, on simple CS opportunities.
- Simple routine maintenance and paving checklist; checks on possible CS improvements during routine work.
- Publication of pending routine work locations and any special street work (utilities, new construction).
- Identify staff with formal responsibility to share pending work and get public feedback on CS opportunities.

2. Neighborhood pop-up demonstration program.

Pop-up demonstrations are low cost, reversible improvements designed to offer users a sense of how a more permanent treatment will look and alter the behavior of users. It provides not only a qualitative experience, such as whether traffic is slowed or more likely to yield for a pedestrian an a crosswalk.

- Create simple educational content (summary sheet, YouTube video) explaining simple traffic calming and safety enhancements.
- Provide a simple application for residents, neighborhood or community groups to apply for and pursue low-cost demonstration projects at specific locations.
- Provide guidance and support in collecting objective measures of a demonstration's performance, for example before and after measures of vehicle, pedestrian, and bicyclist counts, user behaviors (such as vehicle yielding), and vehicle speeds.





TRAILS PROMOTION & AMBASSADOR PROGRAM

Muskogee has committed to building a great trail network, as is illustrated by the progress on many of the goals laid out in the 2004 trails plan. The maturity of the trail network, as well as additions and connections being proposed in this plan, suggest that it is prime for two additional support activities to continue the momentum, including:

1. Launch a trail ambassador program.

Citizen volunteers will walk, bike, or otherwise move under their own power on trails to do any or all of the following:

- Provide information, maps, and answer questions
- Lead community or neighborhood walks such as health and fitness, bird watching, history, and culture walks
- Do simple clean-up
- Report on trail conditions and activities to city staff as necessary

2. Adopt-a-trail program.

This program allows citizens and organizations to adopt sections of the trail for routine clean-ups and care. This in-kind labor frees up funds for other improvements such as tree planting, benches, trash bins, wayfinding signage, trailheads, etc.

- Possible organizations & groups:
 - School sports teams
 - Community service groups (Rotary, Lions, Kiwanis)
 - Churches
 - Businesses.









1. N 12TH ST / N 11TH ST from MLK St to N 6th St

PROJECT DESCRIPTION

This proposed off-street 8-foot wide super sidewalk connects bicyclists and pedestrians across the major thoroughfare, Shawnee Bypass, and to the entrance to a major shopping center to the north for better access to the groceries and other services via N 11th St.

COST ESTIMATE

\$997,500

See reverse side for cost breakdown

BENEFITS

- Connects to the existing Centennial Trail
- Provides a dedicated, enhanced facility crossing across Shawnee **Bypass**
- Provides a key connection from a large neighborhood to major commercial developments

CONSIDERATIONS

- Where right-of-way is constrained in the parkway, shared lane markings can be utilized
- At major road crossings, enhanced marked crosswalks should be used (see reverse side for design notes)
- Four locations are marked on the project map as requiring extra design attention (see reverse side for full notes and details)
- Existing drainage along both the east and west side of N 11th St will need to be maintained with the addition of a proposed at-grade sidewalk (see item C on reverse side)



Proposed Cross Section



- notes)

3 July 2021

• 8-foot super sidewalk on the west and north side of the roadway • Where right-of-way is limited, vehicular travel lanes can become shared use lanes throughout for bicycle traffic (see photo) Enhanced intersection crossings, roadway crossings, and alternate sidewalk design are likely needed along the corridor. The map above shows critical intersections and design considerations along the project limits (marked as A-D on the map, see reverse side for design



1. N 12TH ST / N 11TH ST from MLK St to N 6th St

DESIGN NOTES



MARKED CROSSWALKS & RRFBs

Marked crosswalks are designated locations where pedestrians can cross a roadway. These facilities are generally installed at intersections. Motorized vehicles are expected to yield to pedestrians when they are using a crosswalk. Connections between sidewalks and crosswalks at intersections frequently create changes in grade, which must be addressed using ADA-compliant curb ramps. Standard marked crosswalks should be delineated with high-visibility pavement paint using a white striped pattern. Continental markings or ladder pattern shown in the images are preferred over standard parallel or dashed markings, as they are more visible to all roadway users. Rectangular rapid flashing beacons (RRFBs) may also be used to further enhance midblock pedestrian crossings.



The new super sidewalk will need to tie-in to the existing sidewalk along W Martin Luther King St to provide users with maximum mobility benefits. The image above provides an example of how the super sidewalk could continue north from the existing sidewalk on the northwest corner of the intersection.

Crossing Across Branching B



This section of the roadway is where N 11th St separates from N 12th St, creating a fork in the roadway. The alignment for this facility needs to cross over 12th St at this point as it continues north along N 11th St. To achieve this, a dedicated crossing with an RRFB with Accessible Pedestrian Signal (APS) push buttons could be installed as shown.



This area of the project limits would need to accomodate existing drainage patterns on both sides of the road, requiring drainage mitigation measures. To prevent further issues the proposed super sidewalk can be built at-grade with the roadway and include concrete barriers to provide a physical separation from vehicles.



Shawnee Bypass is a major crossing for trail users, and should be a priority during the implementation of this project. The central median of Shawnee Bypass can be used as a pedestrian refuge island to help break up the 100-foot wide crossing to be able to accommodate a two stage pedestrian crossing. Additionally, a pedestrian signal should be installed and timed to give users a leading interval including an Accessible Pedestrian Signal (APS) push button at all approaches.

Kimley-	Horn and Associates, Inc. O	pinion o	f Proba	ble Constru	ction Cost
Client: Project:	City of Muskogee Connect Muskogee - Mobility Plan		Date: Prepare Checke	ed By: d By:	6/9/2021 AJS DAS
Project: B	Bicycle Facility - 1. N 12th St / N 11th St From MLK St to N 6th St				
Item	Item Description	Quantity	Unit	Unit Price	Cost
DEMOLIT	ION AND MOBILIZATION				
	CLEARING AND GRUBBING (4%) (PAVEMENT PREPARATION)	1	LS	\$32,000.00	\$32,000
	MOBILIZATION (5%)	1	LS	\$40,000.00	\$40,000
	CONSTRUCTION STAKING (1%) (MARKING PLACEMENT)	1	LS	\$8,000.00	\$8,000
	PAVEMENT MARKING REMOVAL - ALLOCATION	200	LF	\$0.50	\$100
	SWPP DOCUMENTATION AND MANAGEMENT	1	LF	\$2,000.00	\$2,000
	INLET BARRIERS	10	EA	\$250.00	\$2,500
	UNCLASSIFIED BACKFILL	1116	CY	\$40.00	\$44,622
PROPOSE	ED IMPROVEMENTS				
	TEMPORARY SILT FENCE	1200	LF	\$3.00	\$3,600
	SOLID SLAB SODDING	1255	SY	\$4.00	\$5,020
	4" CONCRETE SIDEWALK	4715	SY	\$75.00	\$353,600
	REMOVE AND REPLACE DRIVEWAY	18	EA	\$9,000.00	\$162,000
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (4-INCH)	14400	LF	\$2.50	\$36,000
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (24-INCH)	616	LF	\$14.00	\$8,624
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (ARROWS)	11	EA	\$175.00	\$1,925
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (WORDS)	2	EA	\$260.00	\$520
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (BIKE LANE SYMBOL)	0	EA	\$250.00	\$0
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (SHARED LANE SYMBOL)	46	EA	\$250.00	\$11,500
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (SHARROW BLACK CONTRAST MARKING)	1840	SF	\$15.00	\$27,600
	RECTANGULAR RAPID FLASHING BEACON - COMPLETE INSTALLATION	1	LS	\$15,000.00	\$15,000
PROPOSE	ED SIGNAGE				
	R4-11 "BICYCLES MAY USE FULL LANE"	22	EA	\$300.00	\$6,600
TRAFFIC	I				
	AUDIBLE PEDESTRIAN SIGNAL (APS) PUSH BUTTON	10	EA	\$2,000.00	\$20,000
L		1	LS	\$15,000.00	\$15,000
	Basis for Cost Projection:	Subtotal:			\$796,300
	✓ No Design Completed	Conting. (9	%, +/-)	20	\$160,800
	Preliminary Design	Inflation Co	onting. (%	ξ 5	\$40,400
	Final Design	i otai			\$997,500

This total does not reflect engineering services, technical services, or property acquisition cost. The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Due to the conceptual nature of the design and cost estimate, a 20% contingency was applied. Likewise, a 5% inflation contingency was applied to account for implementation in future dollars

COST ESTIMATE DETAILS





2. MAIN ST from W Southside Blvd to Shawnee Bypass

PROJECT DESCRIPTION

Main Street is the major north-south corridor in the city and provides a critical north-south connection that would greatly enhance bicycle access through the City. This project is split into four segments that each have unique cross sections to best fit the context and existing cross section of each section of the corridor.

COST ESTIMATE

\$1,135,000

See reverse side for cost breakdown

BENEFITS

- Ample width and comfort for bicyclists
- Utilizes existing shoulder for portions of the corridor to maintain the existing number of vehicular lanes, where possible
- Sidewalks against the back of curb will be better separated from vehicular traffic
- Segment 1 and Segment 4 connect to Centennial Trail
- Bike boxes at signalized intersections will improve safety at high volume intersections (see reverse for design notes)

CONSIDERATIONS

- To increase safety for bicyclists along Segment 3, the on-street parking is designed to "float" between the travel lane and bike lane (see reverse for design notes)
- Openings at driveways and intersections are needed for vehicles. These areas will be critical conflict points to address with high visibility improvements (see reverse for design notes).

PROJECT MAP & CROSS SECTIONS



Proposed Segment 1: Southside Blvd to Elgin St



Proposed Segment 3: Okmulgee Ave to Girard St







5 July 2021

Proposed Segment 2: Elgin St to Okmulgee Ave

Proposed Segment 4: Girard St to Shawnee Bypass



2. MAIN ST from W Southside Blvd to Shawnee Bypass

DESIGN NOTES



BIKE LANES AT DRIVEWAYS AND INTERSECTIONS

Designing intersections with bicycle facilities should reduce conflict between bicyclists, motorists, and other road users by heightening the level of visibility, denoting a clear right-of-way, and facilitating awareness with competing modes. Intersection treatments can resolve both queuing and merging maneuvers for bicyclists and can be coordinated with timed or specialized signals. The image to the right shows an example of how the buffered bike lanes along S Main St should interact with conflict areas such as driveways and intersections.

BIKE BOXES AT SIGNALIZED INTERSECTIONS

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of queuing traffic during the red signal phase. Bike boxes increase visibility of cyclists at intersections while also giving them priority. Pedestrians also enjoy the benefit of increased space from vehicles while crossing the intersection due to the bike box design.



FLOATING PARKING LANE TO PROTECT BICYCLISTS

On-street parking lanes are an effective way to buffer bicyclists from moving vehicles. By "floating" them between the travel and bicycle lane, they provide a physical barrier between fast moving traffic and vulnerable bicyclists. It is recommended that a buffer of at least 2-feet be provided between the parking lane and bicycle lane to allow room for occupants to enter and exit the parked vehicle.









SIGNAGE & WAYFINDING UPGRADES

Wayfinding involves the strategic placement of signage or other markers that help people, especially visitors, find their way to a destination, including entertainment districts, monuments or museums, universities, or natural features. Wayfinding is also used for navigating bike routes and shared use paths or trails. It can also be a tool for branding and marketing certain areas of a city.



ACCESSIBLE PEDESTRIAN SIGNAL (APS)

Accessible Pedestrian Signal (APS) push buttons should be retofitted at existing signalized intersections along the Main St project corridor. APS push button assemblies include raised directional, vibrotactile push button arrows in the direction of pedestrian travel. APS push buttons also include locator tones and voice message functionality to inform the pedestrian on the walk/ don't walk indication. The location and spacing of the push button assemblies is also critical to ensure proper discernment, operations, and ADA compliance.

This total does not reflect engineering services, technical services, or property acquisition cost The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Due to the conceptual nature of the design and cost estimate, a 20% contingency was applied. Likewise, a 5% inflation contingency was applied to account for imple

COST ESTIMATE DETAILS

Opinion of Probable Construction Cost

Kimley-Horn and Associates, Inc.

City of Muskog

INLET BARRIERS ROPOSED IMPROVEME TRAFFIC STRIPE

TRAFFIC STRIP TRAFFIC STRIPE TRAFFIC STRIP TRAFFIC STRIP

CRUSHED GRAN

TRAFFIC STRIPE

DELINEATOR PR RECTANGULAR F

DEMOLITION AND MOBILI CLEARING AND (MOBILIZATION (CONSTRUCTION PAVEMENT MAR SWPP DOCUME

Client:

Item

Project: Connect Muskogee - Mobility Plan

/9/202 AJS DAS

Project: Bicycle Facility - Main St from W Southside Blvd to Shawnee Bypass

Item Description	Quantity	Unit	Unit Price	Cost
ZATION				
RUBBING (4%) (PAVEMENT PREPARATION)	1	LS	\$36,000.00	\$36,000
%)	1	LS	\$45,000.00	\$45,000
STAKING (1%) (MARKING PLACEMENT)	1	LS	\$9,000.00	\$9,000
KING REMOVAL - ALLOCATION	23000	LF	\$0.50	\$11,500
TATION AND MANAGEMENT	1	LF	\$2,000.00	\$2,000
	20	EA	\$250.00	\$5,000
ITS				
(MULTI-POLYMER - EPOPLEX LS65) (4-INCH)	18202	LF	\$2.50	\$45,505
(MULTI-POLYMER - EPOPLEX LS65) (8-INCH)	48239	LF	\$5.00	\$241,196
(MULTI-POLYMER - EPOPLEX LS65) (24-INCH)	4480	LF	\$14.00	\$62,720
(MULTI-POLYMER - EPOPLEX LS65) (ARROWS)	66	EA	\$175.00	\$11,616
(MULTI-POLYMER - EPOPLEX LS65) (GREEN PAINT WITH				
TE)	15244	SF	\$15.00	\$228,660
(MULTI-POLYMER - EPOPLEX LS65) (BIKE LANE SYMBOL)	250	EA	\$250.00	\$62,500
OVIDE AND INSTALL (BIKE LANE BUFFER)	709	EA	\$125.00	\$88.593
· · · · · · · · · · · · · · · · · · ·				
APID FLASHING BEACON - COMPLETE INSTALLATION	1	LS	\$15,000.00	\$15,000
	40	EA	\$300.00	\$12,000
	2	EA	\$150.00	\$300
	2	EA	\$150.00	\$300
RIAN SIGNAL (APS) PUSH BUTTON	8	EA	\$2,000.00	\$16,000
AFFIC CONTROL	1	LS	\$15,000.00	\$15,000
Projection:	Subtotal:			\$907,900
ompleted	Conting. (%	6, +/-)	20	\$181,700
) Design	Inflation Co	nting. (%	5	\$45,400
5	Total			\$1,135,000





3. COLUMBUS AVE / E CINCINNATI AVE from 7th St to Spaulding Park

PROJECT DESCRIPTION

The outside lanes of Columbus/Cincinnati Rd are planned to be restriped as buffered bike lanes. The bridge portion of the road segment over Main St is proposed to be reconfigured to a three-lane undivided cross section with buffered bike lanes and five-foot sidewalks.

COST ESTIMATE

\$702,000

See reverse side for cost breakdown

BENEFITS

- 8-foot dedicated bike lane with 4-foot buffer on both sides of the street provides ample width and comfort for bicyclists
- Sidewalks dedicated sidewalks along the overpass against the back of curb will be better separated from vehicular traffic to provide a safe pedestrian crossing of Main St and the railroad.

CONSIDERATIONS

- This corridor is a critical connection for emergency services. Therefore, a dedicated traversable median is proposed on the bridge section of this corridor to maintain existing emergency response times (see reverse for design notes)
- Openings at driveways and intersections needed for vehicles (see reverse for design notes)



Proposed Segment 1: At-Grade Section (from S 7th St to S 3rd St & S B St to Spaulding Park)



- traffic
- Anticipate intersection impoorements to accomodate the proposed on-street bicycle facilities (*See reverse side for details*) Utilize Shared Lane Markings to connect the termination of the • dedicated bicycle facilities to Spaulding Park via Baltimore Ave

Proposed Segment 2: Three-Lane with Emergency Access (from S 3rd St to S B St)



- Replace the existing median over the bridge with a 12-foot center lane reserved for emergency vehicles (see design notes on reverse side for more details)
- Plastic curb dilineators with striping as buffer treatment

- Convert the existing outside travel lane into an 8-foot bike lane with a 4-foot buffer space
 - Plastic curb dilineators with striping as buffer treatment Maintain existing 6-foot median to separate the directions of

- 6-foot bike lane with a 3-foot buffer space
- 5-foot sidewalk for pedestrians
- See reverse side for details on intersection treatments



3. COLUMBUS AVE / E CINCINNATI AVE from 7th St to Spaulding Park

DESIGN NOTES



RRFBs

Rectangular rapid flashing beacons (RRFBs) with Accessible Pedestrian Signal (APS) push buttons may also be used to further enhance bicycle and pedestrian crossings by increasing visibility for users.

BUFFER TREATMENTS FOR BIKE LANES

One way to increase the bicyclist's experience is to utilize enhanced buffer treatments beyond striped buffers. Buffers that provide more physical separation will increase the bicyclist's comfort level. Common buffer treatments include vertical delineators, concrete barriers, raised pavement markers, and planter boxes. Buffer treatments can also serve as a tool for beautification, integrating art and place-making elements into a streetscape.









The 2012 International Fire Code establishes that at least 20 feet of unobstructed width must be provided for the passage of emergency vehicles. Therefore, it is proposed that the median currently present on the overpass be removed and striped as an emergency vehicle-only access lane.





To accommodate the addition of buffered bike lanes along the project limits, the overpass over S Main St will need to be retrofitted to include these facilities. The existing four-lane cross section will be modified to two lanes with a center lane being reserved only for emergency vehicles. The buffered bike lanes will be on the outside of the roadway with a proposed five-foot wide sidewalk.







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Due to the conceptual nature of the design and cost estimate, a 20% contingency was applied. Likewise, a 5% inflatio contingency was applied to account for implementation in future dollars.



BIKE LANES AT DRIVEWAYS & INTERSECTIONS

Designing intersections with bicycle facilities should reduce conflict between bicyclists, motorists, and other road users by heightening the level of visibility, denoting a clear right-of-way, and facilitating awareness with competing modes. Intersection treatments can resolve both queuing and merging maneuvers for bicyclists and can be coordinated with timed or specialized signals. The image to the left shows an example of how the buffered bike lanes along Columbus Ave should interact with conflict areas such as driveways and intersections.

COST ESTIMATE DETAILS

Kimley-	Horn and Associates, Inc. O	pinion of	Proba	ble Constru	ction Cost
Client:	City of Muskogee				6/28/2021
Devicest	Orenest Musice and Machillia Dise				AJS
Project:	Connect Muskogee - Mobility Plan				DAS
Project: B	icycle Facility - 3. Columbus Ave / E Cincinnati Ave from 7th St to Spa	ulding Park	1		
ltem	Item Description	Quantity	Unit	Unit Price	Cost
DEMOLIT	ION AND MOBILIZATION				
	CLEARING AND GRUBBING (4%) (PAVEMENT PREPARATION)	1	LS	\$23,000.00	\$23,000
	MOBILIZATION (5%)	1	LS	\$29,000.00	\$29,000
	CONSTRUCTION STAKING (1%) (MARKING PLACEMENT)	1	LS	\$6,000.00	\$6,000
	PAVEMENT REMOVAL - ALLOCATION	444	SY	\$50.00	\$22,222
	PAVEMENT MARKING REMOVAL - ALLOCATION	4600	LF	\$0.50	\$2,300
	SWPP DOCUMENTATION AND MANAGEMENT	1	LF	\$2.000.00	\$2,000
	INI ET BARRIERS	10	ΕΔ	\$250.00	\$2,500
PROPOSE	ED IMPROVEMENTS	10	LA	ψ200.00	ψ2,500
1 1101 001	PORTLAND CEMENT CONTRETE (8") - ALLOCATION	/11	SV	\$100.00	\$/1 111
		22	ev	\$100.00 \$55.00	φ+1,111 ¢4 022
		3260	JF	\$2.50	\$1,033 \$8,150
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (8-INCH)	20276	LF	\$5.00	\$101,380
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (24-INCH)	1280	LF	\$14.00	\$17,920
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (ARROWS)	12	EA	\$175.00	\$2,100
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (WORDS)	12	EA	\$260.00	\$3,120
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (GREEN PAINT WITH CRUSHED GRANITE)	8552	SF	\$15.00	\$128,280
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (BIKE LANE SYMBOL)	50	EA	\$250.00	\$12,500
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (SHARED LANE SYMBOL)	6	EA	\$250.00	\$1,500
	TRAFFIC STRIPE (MULTI-POLYMER - EPOPLEX LS65) (SHARROW BLACK CONTRAST MARKING)	240	SF	\$15.00	\$3,600
	DELINEATOR PROVIDE AND INSTALL (BIKE LANE BUFFER)	274	EA	\$125.00	\$34,282
	RECTANGULAR RAPID FLASHING BEACON - COMPLETE INSTALLATION	1	LS	\$15,000.00	\$15,000
PROPOSE	ED SIGNAGE				
	R3-17 "BIKE LANE"	26	EA	\$300.00	\$7,800
	R3-17BP "ENDS"	2	EA	\$150.00	\$300
	R4-11 "BICYCLES MAY USE FULL LANE"	2	EA	\$300.00	\$600
	M4-14 "BEGIN"	2	EA	\$150.00	\$300
TRAFFIC					
	AUDIBLE PEDESTRIAN SIGNAL (APS) PUSH BUTTON	8	FA	\$2,000,00	\$16 000
		1	INIT	\$60,000,00	\$60,000
		1	19	\$15,000,00	\$15,000
	Basis for Cost Projection	Subtotal		\$10,000.00	\$557,800
		Conting (0		20	φυυ <i>ι</i> ,600
	No Design Completed	Conting. (%	o, +/-)	20	\$114,800
	Preliminary Design	Total	mung. (%	: 5	\$29,400
	Final Design	Total			\$702,000



1. COODY CREEK TRAIL from S 2nd St to Gulick St Trail

PROJECT DESCRIPTION

This proposed trail project extends the Muskogee Centennial Trail and connects into the proposed Gulick St Trail (page 9). The final alignment of this project is still under consideration, however it is planned to follow Coody Creek and portions of the utility easement.

COST ESTIMATE

\$ 2,725,000

See reverse side for cost breakdown

BENEFITS

- Increases bicyclist and pedestrian connectivity citywide by extending the Centennial Trail
- Shared-use path with further separation between modes, which increases level of comfort for all users

CONSIDERATIONS

- The final alignment of this trail is still under consideration but will utilize a combination of the already acquired parcels around the creek and the existing utility easement.
- The railroad crossings (marked on the map as item D) should be built underneath the existing bridges built at this location (see reverse side for design notes)
- The crossing at Cherokee St (marked on the map as item C) will likely warrant the installation of an rectangular rapid flashing beacon (see reverse side for design notes)
- The alternate trail alignment shown would require a signalized at grade trail crossing at Main St. It is recommended to cross Main St closer to the trail head, where Main St has a lower speed limit.





- 20-foot shared use path



Separated by mode into 2 6-foot bike lanes and an 8-foot sidewalk Alternate cross section for areas with limited right-of-way is a 10-foot trail (below)





1. COODY CREEK TRAIL from S 2nd St to Gulick St Trail

DESIGN NOTES



SHARED-USE PATHS & TRAILS

Shared-use paths and trails function similarly to each other. They are physically separated from motorized vehicles, either by a landscaped buffer or a barrier, and can follow a roadway or other independent alignment. These paths are designed for two-way travel, and in addition to bicyclists, path users may include pedestrians, skaters, or other non-motorized vehicles.

The minimum recommended distance between a sidepath and adjacent roadway edge is 5 feet on a high-speed roadway. A barrier should be provided where the separation is less than 5 feet. When designing a system of paths that follows an independent alignment, signage and wayfinding should be installed for users to navigate the system.

MARKED CROSSWALKS & RRFBs

Marked crosswalks are designated locations where pedestrians can cross a roadway. These facilities are generally installed at intersections. Motorized vehicles are expected to yield to pedestrians when they are using a crosswalk. Standard marked crosswalks should be delineated with high-visibility pavement paint using a white striped pattern. Continental markings or ladder pattern are preferred over standard parallel or dashed markings, as they are more visible to all roadway users. Rectangular rapid flashing beacons (RRFBs) with Accessible Pedestrian Signal (APS) push buttons may also be used to enhance bicycle and pedestrian crossings by increasing visibility for users.



There is one location along this proposed trail segment that will require the facility to cross underneath existing bridges. When building underpasses such as these it is imperative to follow ADA guildelines for the sloping and visual guidance. For safety reasons, adequate lighting should also be provided for users to be able to see underneath the bridge at all times of the day.

A B C Other Street Crossings



Multiple locations along the trail will need to cross at-grade with the roadway due to the limited height clearance of the bridges at each crossing. For added safety for trail users, an RRFB with Accessible Pedestrian Signal (APS) push buttons can be installed to give users increased visibility while crossing over this roadway.



	Kimley-H	lorn and Asso
	Client:	City of Muskog
	Project:	Connect Musko
1		
	Project: Tr	ail Facility - Coor

DEMOLITIC	ON AND MOBIL				
	CLEARING AND				
	MOBILIZATION				
	CONSTRUCTIO				
	UNCLASSIFIED				
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	(SP) SWPPP DO				
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Final Design

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Due to the conceptual nature of the design and cost estimate, a 20% contingency was applied. Likewise, a 5% infla contingency was applied to account for implementation in future dollars.

COST ESTIMATE DETAILS

ciates, Inc.	Opinion	of Pro	bable Constru	uction Cost	
ee		Date: Prepared By: Checked By:			
gee - Mobility Plan					
dy Creek Trail from S 2nd St to Gulick	St Trail				
Item Description	Quantity	Unit	Unit Price	Cost	
ATION					
GRUBBING (4%)	1	LS	\$84,000.00	\$84,000	
%)	1	LS	\$104,000.00	\$104,000	
STAKING (1%)	1	LS	\$21,000.00	\$21,000	
XCAVATION	3253	CY	\$14.00	\$45,542	
TRAFFIC CONTROL	1	LS	\$5,000.00	\$5,000	
CUMENTATION AND MANAGEMENT	1	LS	\$5,000.00	\$5,000	
T FENCE	14640	LF	\$1.00	\$14,640	
rs					
	15912	SY	\$45.00	\$716,040	
SE TYPE A (4IN)	2167	CY	\$90.00	\$195,030	
PING	1	LS	\$20,000.00	\$20,000	
WANCE	1	LS	\$75,000.00	\$75,000	
RPASS CROSSING	1	EA	\$150,000.00	\$150,000	
DING (6' wide each side)	19520	SY	\$4.00	\$78,080	
RAPID FLASHING BEACON	2	LS	\$15,000.00	\$30,000	
ATION	1	LS	\$5,000.00	\$5,000	
NG	4	EA	\$150,000.00	\$600,000	
R MILE)	11	EA	\$1,000.00	\$11,000	
ACLE (4 PER MILE)	11	EA	\$750.00	\$8,250	
MENTS	1	LS	\$5,000.00	\$8,000	
Projection:	Subtotal:			\$2,175,600	
ompleted	Conting. (%	5,+/-)	20	\$440,600	
Design	Inflation C	onting (5	\$108,800	
	Total			\$2,725,000	

This total does not reflect engineering services, technical services, or property acquisition cost.





2. GULICK ST TRAIL from Robison Park to Burbank St

PROJECT DESCRIPTION

This proposed trail project would utilize portions of the existing right-ofway along Gulick St as well as segments along the creek to connect from Robison Park to Burbank St.

COST ESTIMATE

\$1,260,000

See reverse side for cost breakdown

BENEFITS

- Increases bicyclist and pedestrian connectivity both in the nearby neighborhoods, and also citywide by connecting into the Centennial Trail
- Hard surface trail increases level of comfort for bicyclists of all ages and abilities

CONSIDERATIONS

- While the southern segment of the trail does follow the alignment of Gulick St, the trail is anticipated to separate from the road when crossing Coody Creek to provide a pedestrian focused crossing.
- The southern trail segment of this proposed project will connect into the proposed Coody Creek Trail and tie in an additional neighborhood at Burbank St (see page 11)



Proposed Segment 1: Standard Trail

H

10' Sidepath



12' Hard Surface Trail

Proposed Segment 2: Sidepath along Gulick St

- •

- - roadway bridge
 - facility.

11 July 2021

12-foot concrete trail that follows the eastern bank of the creek White centerline stripe to separate the two directions of travel Crossing consideration needed across Gulick St to connect to the northern trail segment to the southern trail segment (see reverse side for item A design notes) Bridge crossings needed over two spots along the creek

10-foot sidepath that follows Gulick St to connect the two trail segments Located along the west side of the road segment

Sidepath becomes a trail again when the facility branches across Coody Creek at each end of the road segment as an alternative to widening the existing

Proposed sidepath to maintain at least 5-foot wide facility to accommodate pedestrians. With a sidewalk section, cyclists would instead use the shared lane



2. GULICK ST TRAIL from Robison Park to Burbank St

DESIGN NOTES



TRAILS AND SIDEPATHS

Sidepaths and trails function similarly to each other. They are physically separated from motorized vehicles, either by a landscaped buffer or a barrier, and can follow a roadway or other independent alignment. These paths are designed for two-way travel, and in addition to bicyclists, path users may include pedestrians, skaters, or other non-motorized vehicles.

A barrier should be provided where the separation is less than 5 feet. When designing a system of paths that follows an independent alignment, signage and wayfinding should be installed for users to navigate the system.





For this location along the trail, the installation of a prefabricated pedestrian bridge will be necessary across Coody Creek. Prefabricated pedestrian bridges allow for quick installation, reducing site construction time, and lowering costs.

B ulick St Crossina with RRFBs



The trail alignment follows the eastern/southern side of the creek across Gulick St before turning south and becoming a sidepath. A rectangular rapid flashing beacon with Accessible Pedestrian Signal push buttons should be considered at this crossing due to the low visibility of the tree cover and the anticipated usage of a trail connection between residential neighborhoods and the Centennial Trail.

ENHANCED DRAINAGE

Similar to the 11th/12th St bicycle project, the sidepath section of this trail project would need additional drainage mitigation measures. To prevent drainage issues for the proposed sidepath, this facility can be built at-grade with the roadway and include concrete barriers to provide a physical separation from vehicles.



Kimley-Horn and Asso City of Muskog Client: Connect Musk Project:

Project: Trail Facility - Gu

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Basis	for Cost
1	No Desian

4	No Design
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	Final Desig

This total does not reflect engineering services, technical services, or property acquisition cost. The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Due to the conceptual nature of the design and cost estimate, a 20% contingency was applied. Likewise, a 5% inflation contingency was applied to account for implementation in future dollars.

COST ESTIMATE DETAILS

ociates, Inc. C	pinion o	of Prob	able Constru	ction Cost	
ee		6/9/2021			
		AJS			
ogee - Mobility Plan		Checked By:			
ick Trail from Robison Park to Burbank St					
Item Description	Quantity	Unit	Unit Price	Cost	
ZATION					
GRUBBING (4%)	1	LS	\$36,000.00	\$36,000	
5%)	1	LS	\$46,000.00	\$46,000	
I STAKING (1%)	1	LS	\$10,000.00	\$10,000	
EXCAVATION	978	CY	\$14.00	\$13,692	
I TRAFFIC CONTROL	1	LS	\$7,000.00	\$7,000	
DNCRETE PAVEMENT (DRIVEWAY)	600	SY	\$13.00	\$7,800	
CUMENTATION AND MANAGEMENT	1	LS	\$3,000.00	\$3,000	
T FENCE	4400	LF	\$1.00	\$4,400	
ITS			· "	. ,	
DEWALK	4700	SY	\$75.00	\$352,500	
SE TYPE A (4IN)	523	CY	\$90.00	\$47,070	
RIVEWAY	600	SY	\$85.00	\$51,000	
(MULTI-POLYMER - EPOPLEX LS65) (4-INCH)	7500	LF	\$2.50	\$18,750	
(MULTI-POLYMER - EPOPLEX LS65) (24-INCH)	72	LF	\$14.00	\$1,008	
(MULTI-POLYMER - EPOPLEX LS65) (SHARED	20	EA	\$250.00	\$5,000	
E (MULTI-POLYMER - EPOPLEX LS65) CK CONTRAST MARKING)	800	SF	\$15.00	\$12,000	
WANCE	1	LS	\$25,000.00	\$25,000	
I STAKING LEVEL II	1	LS	\$10,000.00	\$10,000	
DDING (6' wide each side)	5867	SY	\$4.00	\$23,468	
RAPID FLASHING BEACON	1	LS	\$15,000.00	\$15,000	
ATION	1	LS	\$5,000.00	\$5,000	
NG	2	EA	\$150,000.00	\$300,000	
R MILE)	3	EA	\$1,000.00	\$3,000	
ACLE (4 PER MILE)	3	EA	\$750.00	\$2,250	
MENTS	1	19	\$5,000,00	000.82	
Decisetion.	l Subtotch	LO	φ5,000.00	\$0,000	
Projection:	Subtotal:	0(()		\$1,007,000	
Completed	Conting. (%,+/-)	20	\$202,600	
Design	Inflation C	onting (5	\$50,400	
	Total			\$1,260,000	





3. NEIGHBORHOOD TRAIL from S York St to Hilltop Ave

PROJECT DESCRIPTION

This proposed trail project would utilize the right-of-way behind residential properties to connect S York St to Hilltop Ave in the neighborhood around Grant Foreman Elementary School.

COST ESTIMATE

\$ 535.000

See reverse side for cost breakdown

BENEFITS

- Increases bicyclist and pedestrian connectivity inside the neighborhood to the proposed Augusta bicycle facilities
- Additional recreation option for nearby residents

13 July 2021

• Hard surface trail increases level of comfort for bicyclists of all ages and abilities

CONSIDERATIONS

- For the segment that follows the alignment of S Bacone St, a sidepath is recommended to connect the western trail segment to the eastern segment
- The eastern trail connection to Hilltop Ave may require extra grading considerations
- A pedestrian hybrid beacon is recommended at the western terminus of this trail project to allow for safe crossings across S York St (see reverse side for design notes)
- Improvements should not impact existing back of property access.



Proposed Segment 1: Standard Trail (S York St to S Bacone St and Bacone St to Hilltop Ave)



- properties along the corridor.

Proposed Segment 2: Sidepath along S Bacone St

12' Hard Surface Trail



- - trail segment (see reverse side for design notes)

12-foot concrete trail that follows the centerline of the available right-of-way White centerline stripe to separate the two directions of travel Landscaping around the trail should aid in drainage to avoid drainage concerns on the trail segment (see reverse side for design notes) • Trail segment shall maintain vehicular access to the back of the existing

10-foot sidepath that follows S Bacone St to connect the two trail segments • Located along the north/west side of the road segment • Crossing consideration needed across S Bacone St to connect to the eastern



3. NEIGHBORHOOD TRAIL from S York St to Hilltop Ave

DESIGN NOTES





TRAILS AND SIDEPATHS

Sidepaths and trails function similarly to each other. They are physically separated from motorized vehicles, either by a landscaped buffer or a barrier, and can follow a roadway or other independent alignment. These paths are designed for two-way travel, and in addition to bicyclists, path users may include pedestrians, skaters, or other non-motorized vehicles.

A barrier should be provided where the separation is less than 5 feet. When designing a system of paths that follows an independent alignment, signage and wayfinding should be installed for users to navigate the system.



PHBs are signalized pedestrian crossings that control automobile traffic during designated pedestrian crossing intervals. These facilities are installed with Accessible Pedestrian Signal (APS) push buttons at either midblock or at intersections that do not have existing traffic signals, like some T-intersections. Traffic can flow freely through the crossing space until a pedestrian activates the beacon.

B S Bacone St Crossing



To connect the sidepath along S Bacone St to the eastern trail segment, special consideration should be given to the crossing facilities across this roadway. Since this road has a low daily volume, a striped crosswalk with advanced warning signage for traffic in both directions is sufficient to alert drivers.

ENHANCED DRAINAGE

Similar to the 11th/12th St bicycle project, the sidepath section of this trail project would need additional drainage mitigation measures. To prevent further issues the proposed sidepath, this facility can be built at-grade with the roadway and include concrete barriers to provide a physical separation from vehicles.



Kimley-Horn and Asso Client: City of Muskoge Project: Connect Muskoge

Project: Trail Facility - Nei

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This total does not reflect The Engineer has no contro				

not vary from its opinions of probable costs. Due to the conceptual nature of the design

COST ESTIMATE DETAILS

ciates, Inc.	Opinion	of Pro	bable Constr	uction Cost
e gee - Mobility Plan		6/9/2021 AJS DAS		
hborhood Trail from S York to Hilltop Ave				
Item Description	Quantity	Unit	Unit Price	Cost
ZATION				
RUBBING (4%)	1	LS	\$18,000.00	\$18,000
%)	1	LS	\$22,000.00	\$22,000
STAKING (1%)	1	LS	\$1,500.00	\$1,500
CAVATION	978	CY	\$14.00	\$13,692
TRAFFIC CONTROL	1	LS	\$5,000.00	\$5,000
UMENTATION AND MANAGEMENT	1	LS	\$2,500.00	\$2,500
FENCE	2490	LF	\$1.00	\$2,490
ITS				
	2770	SY	\$45.00	\$124,650
E TYPE A (4IN)	370	CY	\$90.00	\$33,300
ING ALLOWANCE	1	LS	\$15,000.00	\$15,000
VANCE	1	LS	\$10,000.00	\$10,000
DING (6' wide each side)	3320	SY	\$4.00	\$13,280
TION	1	LS	\$5,000.00	\$5,000
RID BEACON	1	LS	\$150,000.00	\$150,000
MILE)	2	EA	\$1,000.00	\$2,000
CLE (4 PER MILE)	2	EA	\$750.00	\$1,500
			•	
IENTS	1	LS	\$5,000.00	\$8,000
jection:	Subtotal:			\$428,000
mpleted	Conting. (%,+/-)	20	\$85,600
esign	Inflation C	onting (5	\$21,400
-	Total			\$535,000

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TRANSIT SUMMARY SHEETS

TRANSIT SERVICE AND POLICY RECOMMENDATIONS

TRANSIT SERVICE EXPANSION OVERVIEW

- Expand fixed-route service to provide increased accessibility to jobs and destinations, including longer services hours, more bus stops, policy changes, and a new 4th route on the south side of the City.
- Provide enhancements to demand response/curb-to-curb service to allow for same-day service and the ability to adapt to provide more service based on driver availability.
- Upgrade facilities and on- and off-vehicle technology to improve efficiency, customer service and experience, and data processing.
- Improve access to major employers.



A \$200,000

Expand Weekday Hours of Service (Existing 3 Route, Additional 5 Hours Per Day)

c \$100,000

Demand Response software/ hardware upgrades to accommodate same-day service (Initial Year Cost, Smaller Yearly Recurring Support Costs)

BENEFITS

- Survey data from citizens and employers noted the need to provide public transit access to major employers to better retain and attract employees.
- Longer service hours will expand the rider base, as potential users will have more options for using the service.
- Infill bus stops between current stops should significantly increase the utility of fixed-route service, and improve access to the system.
- Enhanced technology features such as mobile ticketing and real-time bus location information will facilitate access to the system by providing more options for fare payment and information passengers about where the bus is and how long they have to wait. Technology will also assist MCT with tracking vehicles in real-time, which should help gain efficiencies with demand response service as well.
- On-street boarding and/or dedicated bus pull-outs along roadways will • improve on-time performance of buses, improving customer satisfaction.

A Increase weekday fixed route service span to 5 AM - 7 PM (currently 9 AM - 4 PM). The service from 5-9 AM and 4-7 PM would not follow the same routes; rather, this new AM and PM "peak" service would be focused on employment connections, while the midday (9-4) service would remain focused on retail and healthcare.

Implement infill bus stops along fixed routes while keeping a system of timepoints for buses to stay on schedule. Major system stops would remain as timepoints that operate similar to how they do today: buses stop at these locations regardless of demand and depart at a scheduled time. The infill stops, which will need to be signed, would only need buses to stop if a passenger is waiting or if a rider indicates wanting to get off.

B Add a 4th bus into service as a new route serving the south side of town, as a 4th vehicle is available.

Identify a new central hub/transfer location aligned with the future fixed route service plan.

Complete roof repairs and install vehicle lifts at MCT maintenance and operations facility.

15 June 2021

COST ESTIMATE (PER YEAR)

FIXED ROUTE EXPANSION

в \$95,000

в \$160,000

Add 4th Route to Weekday Service (no Expanded Hours)

Add 4th Route to Weekday Service (with Expanded Hours)

\$100,000 (per vehicle)

Additional Vehicles (Long-Range Recommendation)

DEMAND RESPONSE EXPANSION

\$275,000

Expanded Demand Response service (2 Additional Vehicles running DR)

\$690,000

Expanded Demand Response service (5 Additional Vehicles -Long-Range *Recommendation*)

SERVICE RECOMMENDATIONS

Reconnect the Westside and North Routes to Walmart. Incorporate access at Walmart at a common, off-street location where passengers can transfer safely between routes.

C Procure Intelligent Transportation System (ITS) hardware and *software for fixed route service* providing mobile fare payment/ validation, automated stop announcements, passenger counting/ farebox tabulation, fare management and reporting, bus tracking, scheduling for demand response, and automated transfer of data to ODOT's Myleonet reporting platform.



TRANSIT SUMMARY SHEETS

PER STOP

COST

TRANSIT SERVICE AND POLICY RECOMMENDATIONS

CONSIDERATIONS

\$300 - \$500 Bus Stop Sign Only (incl/ install)

\$1,000 - \$2,000 Bus Stop "Basics" (sign, bench, trash receptacle)

\$6.500 - \$10.000 Bus Stop w/ Shelter/Lighting (assuming sidewalk/concrete pad

already in place)

\$18,000 - \$25,000 Bus Stop w/ Shelter and

install of concrete pad/ ADA sidewalk



BUS STOP IMPROVEMENTS

AND AMENITIES

Most system bus stops are currently in parking lots or other locations off of main roadways, which avoids creating delays along roadways but adds to bus travel time and reduces on-time performance. MCT should identify a pilot for on-street boarding or bus pull-outs. Potential locations include the Honor Heights Towers or Surity/Manhattan Apartments.



MCT should identify signage from locations not currently being serviced by public transit and remove these from the field.

Infill bus stops should be avoided along busy roadways that do not have a passing lane for vehicles to get past a stopped bus.

TRACK YOUR #We'reonYourRoute BUS!

MCT should conduct an inventory of bus stops and shelters - GPS locations, existing amenities, service route(s) - in preparation for GTFS and CAD/AVL applications.



BUS STOP SPACING RECOMMENDATIONS

These recommendations are based on recent research from transit agencies around US, and best practices for similar sized communities.

CENTRAL BUSINESS DISTRICT

750' to 1,000' (approx. every 2-3 blocks)

OUTSIDE OF THE CENTRAL BUSINESS DISTRICT 1,250' to 5,280' (1/4 - 1 mile)



Minimum requirements (as a policy) should note ADA-compliant boarding/alighting area and signage denoting that this location is a bus stop (e.g. a stop ID for looking up the stop online/in app, a posted schedule or link to online schedule)



Further amenities should be provided at timepoints or highridership stops, including benches, shelters, and lighting.

RURAL AREAS 1 to 2+ miles





TRANSIT SUMMARY SHEETS

TRANSIT SERVICE AND POLICY RECOMMENDATIONS

CONSIDERATIONS

EMPLOYMENT-FOCUSED WEEKDAY PEAK SERVICE

- An example for AM/PM peak service is extending the current North Route to include a stop(s) at the Port of Muskogee given the proximity to the current service stop at the ICTC campus. This would likely coincide with a change in service
 A frequency to 75-minute or 90-minute headways during the AM and PM peaks.
- New service hours would require restructuring operators' work schedules/ blocks. Requiring operators to work "split shifts" (e.g. separate shifts in the AM/PM with a break in between) is undesirable; rather, if needed, ideally operators could switch between demand response and fixed route as needed throughout the day.
- Peak employment-focused service policy should consider leveraging funding from employers so that employees could ride free with a valid/company ID. MCT would still set the schedule, and service would be open/available to anyone.
- Some major industrial employers would benefit from additional service during the week or 7-day peak service periods to better accommodate employees.
 A This service can be tailored towards specific shift changes. To the right, is an example of a service specifically tailored to a portion of the Port development.

ADDITIONAL CONSIDERATIONS

- Reconnecting the Westside and North Routes to Walmart likely will require an increase in service headways - e.g. 75-minute or 90-minute headways. These headways could allow for more infill stops/ flexibility in schedule.
- All changes must be advertised 2+ weeks in advance to allow for public input, including adding stops along routes and changing headway times.

A PORT OF MUSKOGEE SERVICE EXTENSION



When you combine better connections, technology, more bus stops, and longer service hours, all of these add up to a much more robust service that makes more sense and is more attractive to users.

LONG RANGE RECOMMENDATIONS

Expand fixed route service to Saturdays, with a focus on retail/entertainment. This service would likely entail the same/similar routes to Spring 2021 service. Service may be abbreviated to be from 10 AM - 3 PM.

Expand fixed route system to six (6) buses. Additional buses will allow for running higher-frequency service or serving additional fixed routes. This additional service is intended to better serve high-need populations. While MCT is not currently staffed with enough operators to provide this service, it is anticipated that a larger operator employment pool will be available as COVID-19 restrictions are lifted.

Provide bus washing and refueling onsite at the MCT maintenance facility. These tasks are currently performed by drivers in the field.

Consider modifying fixed route service to flex-fixed/deviated fixed route. This type of service, typically utilized on lowfrequency, low-ridership routes, allow for a passenger to call in advance and

frequency, low-ridership routes, allow for a passenger to call in advance and request that the bus go off-route by up to a certain distance to conduct a pick-up or drop-off. This type of service may have ODOT policy or customer service (i.e., on-time performance) implications that should be considered.

Add 30-minute service to select routes. All routes are currently served via 60-minute headways (or possibly longer in the future - see "Considerations").

Transportation Demand Management: The field of transportation demand management (TDM) has shown that it is possible to increase the use of transit through a combination of service enhancements, incentives, and disincentives.

ENHANCED STOP AND TRANSFER POINT DIS STOP

17 June 2021

