ROUTE 66/STRAFFORD TRAIL

DRAFT CONCEPTUAL STUDY REPORT

Greene County, Missouri

July 25th, 2023

Prepared by:

CMT
Crawford, Murphy & Tilly

Table of Contents

1.0 INTRODUCTION

The primary goal of this study is to develop and evaluate alternative trail locations for the Historic Route 66 (Strafford) Trail from LeCompte Rd. in Springfield, MO to Strafford, MO. This trail would be a connection from Strafford to the Springfield Regional Trail System and will ultimately connect to future trail and greenway alignments such as the Division Street Trail and North Jordan Creek Greenway.

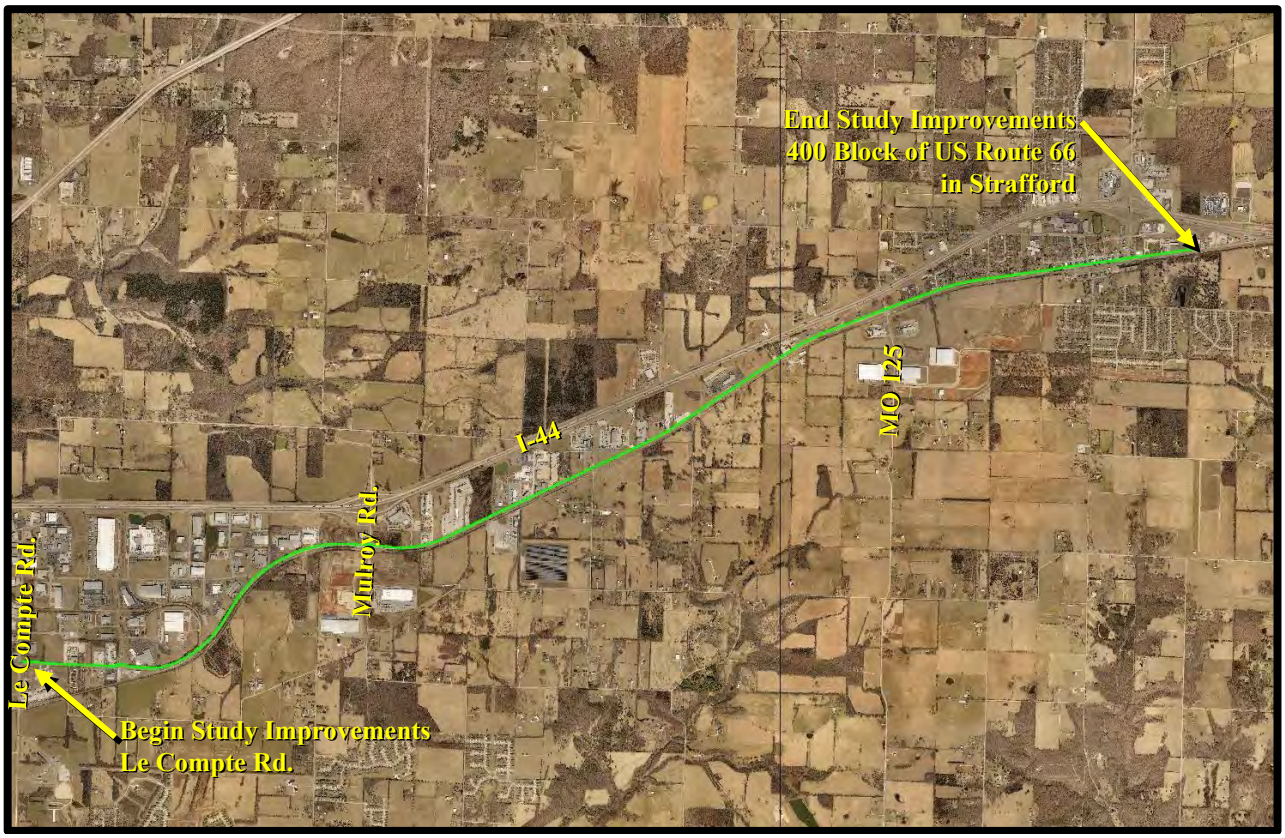


Figure 1: Route 66 (Strafford) Trail Study Limits

2.0 PURPOSE AND NEED

In November of 2022, the Ozarks Transportation Organization (OTO) contracted Crawford, Murphy & Tilly (CMT) to determine the safest and most practical location and method for the Route 66 (Strafford) Trail connecting Springfield, MO (at the intersection of Le Compte Rd. and Kearney St.) to Strafford, MO along Historic US Route 66. The purpose of the Route 66 Trail is to provide regionally important bicycle and pedestrian connection between the cities of Springfield and Strafford, Missouri.

The OTO Trail Investment Study completed in October 2017 identified the Route 66 (Strafford) Trail as a priority trail alignment for the region. The project is a key priority for many local and agency partners, with a focus on the following community benefits:

- Reimagine an important piece of Ozarks transportation history by utilizing much of the Historic US Route 66 corridor as the basis for the proposed trail alignment
- Promote regional connection for multi-use transportation by connecting the cities of Springfield and Strafford, Missouri
- Provide a safe transportation corridor for all trail users through congested urban and suburban areas

3.0 ALTERNATIVES ANALYSIS

3.1 PROPOSED DESIGN CRITERIA

The proposed Route 66 Trail will be a multi-use trail facility serving predominantly bicycle and pedestrian traffic. In accordance with design criteria as noted, the following criteria will be used when designing this facility.

Criteria	Standard	Source/Remarks
Bicycle Design Speed	30 mph (max.) 18 mph (min.)	AASHTO Bicycle Facilities Guide
Design Bicycle Lean Angle	20°	AASHTO Bicycle Facilities Guide
Minimum Path Width	10'-0"	OTO Bicycle & Pedestrian Trail Investment Study, ADA
Minimum Path Radius	60'-0"	AASHTO Bicycle Facilities Guide, ADA
Maximum Path Cross Slope	2%	OTO Bicycle & Pedestrian Trail Investment Study, ADA
Minimum Path Shoulder Width	2'-0"	OTO Bicycle & Pedestrian Trail Investment Study
Standard Maximum Path Grade	5% (1% at structures)	AASHTO Bicycle Facilities Guide
Foreslopes (Fill) Backslopes (Cut)	0' to 2' – 6:1 or flatter 2' to 5' – 4:1 max. >5' – 3:1 max. 0' to 2' – 6:1 or flatter 2' to 5' – 4:1 max. >5' – 3:1 max.	AASHTO Bicycle Facilities Guide & OTO Bicycle & Pedestrian Trail Investment Study
Path Clear Zone Width	2'-0"	AASHTO Bicycle Facilities Guide

Table 1: Proposed Design Criteria

3.2 ALTERNATIVES DEVELOPMENT

In March 2023, three meetings were held to discuss seven different alignment alternatives for the Route 66/Strafford Trail. Other alignments were briefly explored but dismissed due to topographic complications, residential or commercial impacts, or significant associated costs. The seven alternatives presented were:

1. **Option 1** – Alignment following Old Route 66 between the highway and railroad
2. **Option 2A** – South of Old Route 66 from Le Compte to Partnership, North from Partnership to Strafford
3. **Option 2B** – Adjacent along north side of Old Route 66 for entire alignment
4. **Option 3A** – Diversion through Strafford along Pine Street
5. **Option 3B** – Diversion through Strafford Along Old Orchard Dr., McCabe St., and Washington Ave.
6. **Option 3C** – Diversion through Strafford Along Old Orchard Dr., McCabe St., and Madison Ave.
7. **Option 3D** – Diversion through Strafford Along Pinecrest Ave., McCabe St., and Chestnut St.

Alternatives were developed consistent with the AASHTO Guide for the Development of Bicycle Facilities (2012, 4th Edition), the OTO Trail Investment Study (October 2017), and MoDOT's *Engineering Policy Guide (EPG*). **Appendix A** shows detailed conceptual layouts of the alternatives that were further analyzed.

3.3 OVERVIEW OF ALTERNATIVES

3.3.1 BASE ALIGNMENT OPTIONS

<u>Option 1 – Alignment following Old Route 66 between the highway and railroad (South Parallel)</u>

Figure 2 below shows the conceptual layout. Major features of Option 1 include:

- Connection to existing sidewalk at the southeast quadrant of Le Compte
- At-grade pedestrian crossing at railroad spur between Partnership Blvd. and Mustard Way
- Accommodations for Old Route 66 and BNSF Railroad drainage discharge on the south side of the road, including large sections of enclosed drainage structures
- Total length of improvements of approximately 6.23 miles for construction of the trail

Figure 2: Option 1 – South Parallel

Benefits

- Minimal commercial and/or residential impacts
- Provides minimal driveway/roadway intersection points
- Limits signal impacts at Le Compte and Mulroy intersections

Disadvantages

- Right-of-way impacts on the south side of the roadway will require BNSF approval
- Safety concerns with such close proximity to BNSF Railroad
- Fence likely required the majority of the alignment
- Enclosed drainage system required along much of proposed alignment due to drainage challenges
- Avoids connection with numerous businesses along the north side of the highway as well as existing sidewalk infrastructure and businesses within Strafford

Option 1 (South Parallel) was ultimately determined not feasible due to expected right-of-way/permanent easement acquisition issues with BNSF as well as anticipated costs associated with grading, drainage, and fencing.

Option 2A – South of Old Route 66 from Le Compte to Partnership, North from Partnership to Strafford
(2017 Trail Study Option)

Figure 3 below shows the conceptual layout. Major features of Option 2A include:

- At-grade pedestrian crossing (HAWK signalization) at the intersection of Old Route 66 and Partnership Blvd. In Springfield, MO
- At-grade pedestrian crossing at railroad spur between Partnership Blvd. and Mustard Way
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Connection to existing sidewalk in front of businesses in Strafford along Old Route 66

- Total length of improvements of approximately 5.96 miles for construction of the trail

Figure 3: Option 2A – 2017 Trail Study Option

Benefits

- Connects to businesses and residences along the north side of the highway
- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway

Disadvantages

- Numerous driveway and roadway intersections
- No areas that allow for an isolated user experience due to the close adherence to the adjacent roadway
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)
- Traffic and Safety concerns associated with short distance from signalized intersection at Le Compte to HAWK signal

Option 2B – Adjacent along north side of Old Route 66 for entire alignment (North Parallel)

Figure 4 below shows the conceptual layout. Major features of Option 2B include:

- Signal & pedestrian crossing improvements at Le Compte
- At-grade pedestrian crossing at railroad spur between Partnership Blvd. and Mustard Way
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Connection to existing sidewalk in front of businesses in Strafford along Old Route 66
- Total length of improvements of approximately 5.95 miles for construction of the trail

Figure 4: Option 2B – North Parallel

Benefits

- Connects to businesses and residences along the north side of the highway
- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway
- No pedestrian crossing necessary due to the only crossing of Old Route 66 being at the Le Compte signal

Disadvantages

- Numerous driveway and roadway intersections
- No areas that allow for an isolated user experience due to the close adherence to the adjacent roadway
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)

3.3.2 STRAFFORD ALIGNMENT OPTIONS

Option 3A – Diversion through Strafford along Pine Street
(Pine Street)

Figure 5 below shows the conceptual layout. Major features of Option 3A include:

- North Parallel Alignment from Le Compte intersection to Washington Ave. in Strafford
- Direct connection of downtown Strafford utilizing existing 10’ sidewalk along Pine St. and connecting to MO 125
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Total length of improvements of approximately 1,820 ft. for construction of the trail (6.29 miles when included with Option 2B)

Figure 5: Option 3A – Pine Street

Benefits

- Connects to businesses and residences along the north side of the highway and along Pine Street within Strafford
- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway
- No HAWK pedestrian crossing necessary due to the only crossing of Old Route 66 being at the Le Compte signal
- More pleasant user experience within Strafford due to the separation from Old Route 66

Disadvantages

- A portion of the existing 10’ sidewalk in Strafford is obstructed by light poles that do not allow for the minimum Multi-Use Path width requirement of 8’
- Diversion of Trail traffic away from businesses along the north side of Old Route 66 through Strafford
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)
- Does not align with goals of the City of Strafford

Option 3B – Diversion through Strafford Along Old Orchard Dr., McCabe St., and Washington Ave. (Washington Avenue)

Figure 6 below shows the conceptual layout. Major features of Option 3B include:

- North Parallel alignment from Le Compte intersection to Old Orchard Dr. in Strafford

- Trail passes in front of Strafford High school on the north side of McCabe St. until turning south on Washington Ave. to connect to downtown Strafford utilizing existing 10’ sidewalk along Pine St. and connecting to MO 125
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Total length of improvements of approximately 4,790 ft. for construction of the trail (6.57 miles when included with Option 2B)

Figure 6: Option 3B – Washington Avenue

Benefits

- Connects to businesses and residences along the north side of the highway and along Pine Street within Strafford
- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway
- No HAWK pedestrian crossing necessary due to the only crossing of Old Route 66 being at the Le Compte signal
- More pleasant user experience within Strafford due to the separation from Old Route 66
- Allows access for students walking to/from school

Disadvantages

- Increased pedestrian traffic near school causes safety concerns during loading/unloading
- A portion of the existing 10’ sidewalk in Strafford is obstructed by light poles that do not allow for the minimum Multi-Use Path width requirement of 8’
- Diversion of Trail traffic away from businesses along the north side of Old Route 66 through Strafford
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)

- Tight right-of-way along Washington Ave.

Option 3C – Diversion through Strafford Along Old Orchard Dr., McCabe St., and Madison Ave. (Madison Avenue)

Figure 7 below shows the conceptual layout. Major features of Option 3C include:

- North Parallel alignment from Le Compte intersection to Old Orchard Dr. in Strafford
- Trail passes in front of Strafford High school on the north side of McCabe St. until turning south on Madison Ave. to connect to downtown Strafford utilizing existing 10' sidewalk along Pine St. and connecting to MO 125
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Total length of improvements of approximately 4,710 ft. for construction of the trail (6.56 miles when included with Option 2B)

Figure 7: Option 3C – Madison Avenue

Benefits

- Connects to businesses and residences along the north side of the highway and along Pine Street within Strafford
- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway
- No HAWK pedestrian crossing necessary due to the only crossing of Old Route 66 being at the Le Compte signal
- More pleasant user experience within Strafford due to the separation from Old Route 66
- Allows access for students walking to/from school
- Right-of-way along Madison Ave. is more conducive to a trail than that of Washington Ave.

Disadvantages

- Increased pedestrian traffic near school causes safety concerns during loading/unloading
- A portion of the existing 10' sidewalk in Strafford is obstructed by light poles that do not allow for the minimum Multi-Use Path width requirement of 8'
- Diversion of Trail traffic away from businesses along the north side of Old Route 66 through Strafford
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)

Option 3D – Diversion through Strafford Along Pinecrest Ave., McCabe St., and Chestnut St. (Pinecrest to Chestnut)

Figure 8 below shows the conceptual layout. Major features of Option 3D include:

- North Parallel alignment from Le Compte intersection to Pinecrest Ave. in Strafford
- Trail passes in front of Strafford High school on the north side of McCabe St. until continuing along the north side of Chestnut St. connecting to MO 125
- 3:1 side slopes and a maximum 5% trail profile grade for ADA compliance
- Total length of improvements of approximately 1.13 miles for construction of the trail (6.56 miles when included with Option 2B)

Figure 8: Option 3D – Pinecrest to Chestnut

Benefits

- Minimal BNSF right-of-way impacts (Spur Crossing)
- Significantly less enclosed drainage necessary than on the south side of the highway
- No HAWK pedestrian crossing necessary due to the only crossing of Old Route 66 being at the Le Compte signal
- Provides the longest distance through Strafford creating a more pleasant user experience within Strafford due to the separation from Old Route 66
- Creates access through residential areas on the west side of Strafford
- Allows access for students walking to/from school
- Right-of-way along Madison Ave. is more conducive to a trail than that of Washington Ave.

Disadvantages

- Increased pedestrian traffic near school causes safety concerns during loading/unloading
- Diversion of Trail traffic away from businesses along the north side of Old Route 66 through Strafford
- Proximity to utilities along the north side of highway causing impacts at various locations (high-pressure gas lines, electrical transmission lines, fiber optics, etc.)

After team discussion and stakeholder involvement from the City of Strafford, the trail purpose and need of creating a safe regional bike and pedestrian connection between Springfield and Strafford is achievable without the added trail length and cost of going through Strafford. Omitting the trail connectivity through town also affords the City of Strafford the freedom to develop its own pedestrian and bicycle facilities that better align with the needs of the community in the future. Ultimately, it was determined that Options 3A-3D are not a priority with which to move forward, and the trail will tie in to existing and future ADA facilities within Strafford at the west side of the intersection of Old Route 66 and Washington Avenue.

3.4 MAINTENANCE OPERATIONS

Other General Maintenance Activities

General maintenance of City-owned right-of-way, MoDOT-owned right-of-way, and trail pavement will be required. Expected activities may include:

- Mowing, trimming, or pruning of grasses, trees, shrubs, or other vegetation will be required on regular intervals to prevent overgrowth on the trail surface or impacts to bicyclist clearances
- Regular inspection of trail pavement surface to discover and replace concrete or asphalt pavement causing gaps, tripping hazards, or slippery surfaces deemed out of compliance by ADA standards
- Regular flushing of drainage culverts to prevent sedimentation within the pipe and sediment removal of inlet or outlet rock linings
- Replacement of lighting elements

MoDOT currently is responsible for maintaining the roadway right-of-way corridor along Old Route 66 which is the location of the trail alignment. Additional maintenance activities added due to the trail construction are the upkeep of the trail itself to ensure it maintains ADA compliance and upkeep of additional drainage infrastructure. The annual costs for the maintenance of this infrastructure are

difficult to pinpoint as multiple factors have an impact on the amount of maintenance required from year to year. It is recommended that $5,000 to $10,000 be put aside each year to cover panel replacements to ensure the trail maintains ADA compliance and to cover additional maintenance needs. MoDOT's current policy notes that the State will not maintain multi-use paths within their right-of-way. Due to this, the local jurisdictions and/or Ozark Greenways will be responsible for the maintenance of the trail.

3.5 COST ESTIMATES

In order to evaluate and compare the costs of the trail alternatives, high-level conceptual construction costs were determined for each alternative. A fully developed program cost estimate that includes construction, preliminary engineering, construction engineering, right of way, right of way incidental, and utility relocation costs was not performed until the core group agreed on a recommended alternative. A full program budget was performed on the recommended alternative and this budget can be found in Section 7.0 of this report as well as **Appendix B**.

The following estimated construction costs were developed for each option:

Estimated Construction Costs	
Option 2A *2017 Trail Study Option*	**Option 2B** *North Parallel*
$7,592,902.46	$7,142,405.48

Table 2: Estimated Construction Costs for Each Alignment Option

3.6 UTILITY IMPACTS AND RELOCATIONS

Utility impacts are estimated to be substantial in every alternative analyzed. There are several pull boxes and telecom risers that will be impacted by the proposed trail; however, most appear to be within existing right-of-way. It is likely the individual utilities will elect to adjust the pull boxes to the new grade. Risers will be addressed on a case-by-case basis. If the riser falls within the grading limits of the trail, the pedestal will likely need to be replaced with a new pull box set to grade. There are also a few guy anchors impacted by the project.

Most utility impacts between Le Compte Rd. and Mulroy Rd. (Trail Section 1) will be lighting and electric pole relocations. There is continuous whiteway lighting along the Industrial Park (between Partnership Blvd. and Mustard Way) that will be impacted by the trail and/or grading. City Utilities has a high-pressure steel gas main along the north side of the highway that varies from 8"-12" in size as well as a parallel ductile iron water main ranging in size from 12"-16". CU also has electrical transmission in this area, but it should not be impacted. To the west of the intersection of Mulroy Rd. and Old Route 66, there is a 3P transmission line that will have impacts to various poles.

Between Mulroy Rd. and TransLand (Trail Section 2) there are numerous power pole relocations necessary (likely requiring the purchase of easements). Just east of 3075 W Old Route 66 (Gillespie Excavation), there is a CU electrical transmission line and gas main running N-S. The transmission line pole will not be affected; however, the anchor may need adjustment.

Utility impacts for the remainder of the trail are mostly within right-of way. There is a Southwest Electric Co-Op 1P power line set close to the right-of-way line that will need numerous pole relocations (requiring parallel easements to the north). Also, CU has vent pipes on their gas main casing for the highway crossing at the intersection of MO 125 and Old Route 66.

3.7 RIGHT-OF-WAY IMPACTS

Each option was evaluated with a baseline design including 3:1 fill slopes. This design method is more intrusive on adjacent right-of-way but can be significantly more cost-effective than its structural alternatives such as retaining walls or bridges.

Both options utilize existing MoDOT right-of-way for the alignment of the trail. Temporary Construction Easements as well as some Permanent Utility Easements are anticipated due to the narrow right-of-way corridor.

The following table summarizes the total estimated right-of-way acquisition (Temporary Construction Easements and Permanent Utility Easements) anticipated to be required for each trail alternative within the trail limits:

Option 2A *2017 Trail Study Option*		**Option 2B** *North Parallel*	
TCE	PUE	TCE	PUE
2.25	0.57	2.22	0.56

Table 3: Estimated Right-of-Way Acquisition Area for Each Alignment Option

3.8 AESTHETICS

The proposed alternative construction costs are based on a baseline design of a standard 10’ trail with 3:1 cut/fill slopes rather than Mechanically Stabilized Earth walls with no additional aesthetic upgrades. Additionally, no extra costs were estimated for specialized signage or elements along the trail.

The Route 66/Strafford trail has many opportunities for aesthetic upgrades throughout the alignment building on the historic nature of Route 66. Kiosks, signs, information boards, and trailhead locations can all be utilized to attract tourism and trail use. Figures 9 through 11 below show a few aesthetic enhancements used along Route 66 Trails in other states.

Figure 9: Route 66 Trail Sign Example – Santa Monica, California

Figure 10: Route 66 Trail Kiosk Examples – Berwyn, Illinois

Figure 11: Route 66 Trail Sign & Rest Area Examples – Lexington, Illinois

If aesthetic elements are desired, any associated costs from the aesthetic elements will be above and beyond the construction costs shown above and in **Appendix B**.

3.9 SATISFACTION OF THE PURPOSE AND NEED

The proposed separated Route 66/Strafford Trail provides a safe, multi-modal transportation alternative for the planned bicycle and pedestrian corridor between the cities of Springfield and Strafford, Missouri. The seven options evaluated as part of this study satisfy the needs and purpose of the trail corridor.

4.0 RECOMMENDED ALTERNATIVE

An evaluation matrix was developed to summarize the advantages of each crossing alternative as it relates to five important criteria set forth by the Ozarks Transportation Organization (OTO) at the start of the study. Those five criteria include: cost, safety, aesthetics, maintenance, and user comfort. The following matrix indicates the North Parallel (Option 2B) as the preferred alternative with the most benefit.

	Option 2A	Option 2B
Cost	2	3
Safety	1	3
Aesthetics	3	3
Maintenance	2	2
User Comfort	2	3
Total Score	**10**	**15**

Table 4: Evaluation matrix with scoring to indicate a preferred alternative with relation to five categories. 3=Most Advantageous, 1=Least Advantageous

Option 2B (North Parallel) provides a safe and economical trail between Springfield and Strafford while also providing opportunities for aesthetic customization to make the trail a signature attraction of the area. It also coincides best with future plans the City of Strafford has for expansion of their internal sidewalk system into the downtown area. Due to all these factors, the North Parallel alternative is the recommended alternative to carry forward as the preferred method and location for the crossing of US Highway 65.

A refined conceptual cost estimate was developed for Option 2B (North Parallel) as the preferred alternative, and was provided to the OTO for program budgeting purposes. This refined cost estimate for Option 2B is attached in **Appendix B**.

5.0 ENVIRONMENTAL CONSTRAINTS SUMMARY

A high-level environmental review was performed as part of this conceptual study with the assumption that federal permits or funding may be sought out for future design or construction of the Route 66/Strafford Trail. The following environmental categories, some of which can be found in the

environmental constraints map in **Appendix C**, were reviewed and summarized to include each crossing option:

5.1 NOISE ASSESSMENT

If a project is classified as a Type I or Type II project, a noise analysis may be required. However, because this is a trail project, a noise analysis is not expected.

5.2 SECTION 4(F) AND SECTION 6(F)

No 4(f) or 6(f) resources were identified within the project study area.

5.3 THREATENED AND ENDANGERED SPECIES

According to a USFWS Information for Planning and Consultation (IPaC) review, the following federally listed species may occur in the study area:

- Indiana bat (*Myotis sodalist*, endangered), Northern long-eared bat (*Myotis septentrionalis*, threatened)
    - Tree clearing of suitable habitat will require seasonal restrictions
        - (Nov. 1 to Oct. 31)
- Gray bat (*Myotis grisescens*, endangered)
    - Project alignment will need to be assessed in the field for suitable cave habitats
    - Missouri Department of Natural Resources (MDNR) GeoSTRAT reports no sinkholes in the study area
- Ozark cavefish (*Amblyopsis rosae*, threatened)
    - Based on a high-level review, cave streams are not likely to be located within the study area. A closer field evaluation will be required to confirm absence of suitable habitats
- Niangua darter (Etheostoma nianguae, threatened)
    - Study area does not overlap with the darter's critical habitat
    - Project alignment will need to be assessed for suitable aquatic habitat
- Monarch Butterfly (Danaus plexippus, candidate endangered)
    - No critical habitat identified, historical range in Missouri
    - Project alignment will need to be assessed for habitat- prairie habitat that contains milkweed

Further coordination will be required with Missouri Department of Conservation Natural Heritage Review to determine if there are records of federally or state-listed species or state-ranked species near the preferred trail alignment.

5.4 404 PERMIT – WETLANDS/STREAMS

Multiple National Hydrography Dataset (NHD) streams and National Wetland Inventory (NWI) wetlands are mapped within the study area boundaries: two mapped intermittent streams/riverine wetlands, the Brown Branch and Pierson Creek, are within the study area. Based on aerial imagery, Brown Branch may no longer be present along the alignments. Field investigation will be required to determine if streams and wetlands are present. Impacts to federally jurisdictional streams and/or wetlands will require compliance with 404/401 permitting.

5.5 CULTURAL RESOURCES

No National Register sites are located within the project area. Area will likely need to be reviewed for buildings and structures that are over 45 years of age.

5.6 FLOODPLAIN

Most of the project area is outside of the floodplain. There is one small area toward the central portion of the study area that is in Zone A (1% annual chance of flooding). Any construction within a floodplain will require a floodplain development permit.

5.7 HAZARDOUS WASTE SITES

Based on MDNR Environmental Site Tracking and Research Tool (E-Start) sites within or adjacent to study area:

- Operating UST with no known releases: 3
- Facility closed prior to implementation of 2004 tanks RBCA: 8
- Former UST issued a NFA letter without restriction: 1
- Former UST Investigation/Corrective action is ongoing or incomplete: 1
- Brownfield Assessment Site: 1
- If right-of-ways or easements will be required from these properties, additional investigation will likely be necessary.

5.8 FARMLAND

The study area does not encompass any farmland. Project will not be subject to Farmland Protection Policy Act.

6.0 PUBLIC INVOLVEMENT

A public meeting pertaining to the Route 66 (Strafford) Trail Study Report was held on June 15th, 2023, with an attendance of 20. Numerous comments were made in person, and six (6) written

comments were received. See **Appendix F** for the public meeting sign-in sheet and written comments. A summary of the common themes of the public comments is provided below.

- A trail connection from Springfield to Strafford was strongly favored by both local citizens and business owners.
- There was some concern expressed about the impacts of Option 2 on commercial and residential properties.
- Concern was also noted regarding the safety of the numerous driveway intersections along the trail on the north side of the highway, as well as the concern for easy access to property (yards, mailboxes, etc.) along the trail.
- Connection to the north side of Springfield would provide a much-needed pedestrian connection, however there is concern about the large homeless population having increased access to Strafford.

Additional public and stakeholder input will be continued during future phases of the project, as funding is identified for various sections.

7.0 ADDITIONAL TRAIL CONSIDERATIONS

7.1 CONSTRUCTION PHASING

Due to the substantial length of the trail, a multi-phase approach is the most feasible approach to build the trail as funding becomes available. The trail has been broken up into the following three sections:

Section 1 – Le Compte to Mulroy

Begins at the intersection of Le Compte Rd. and Kearney St. (Old Route 66) and ends at the northwest quadrant of the intersection of Mulroy Rd. and Old Route 66.

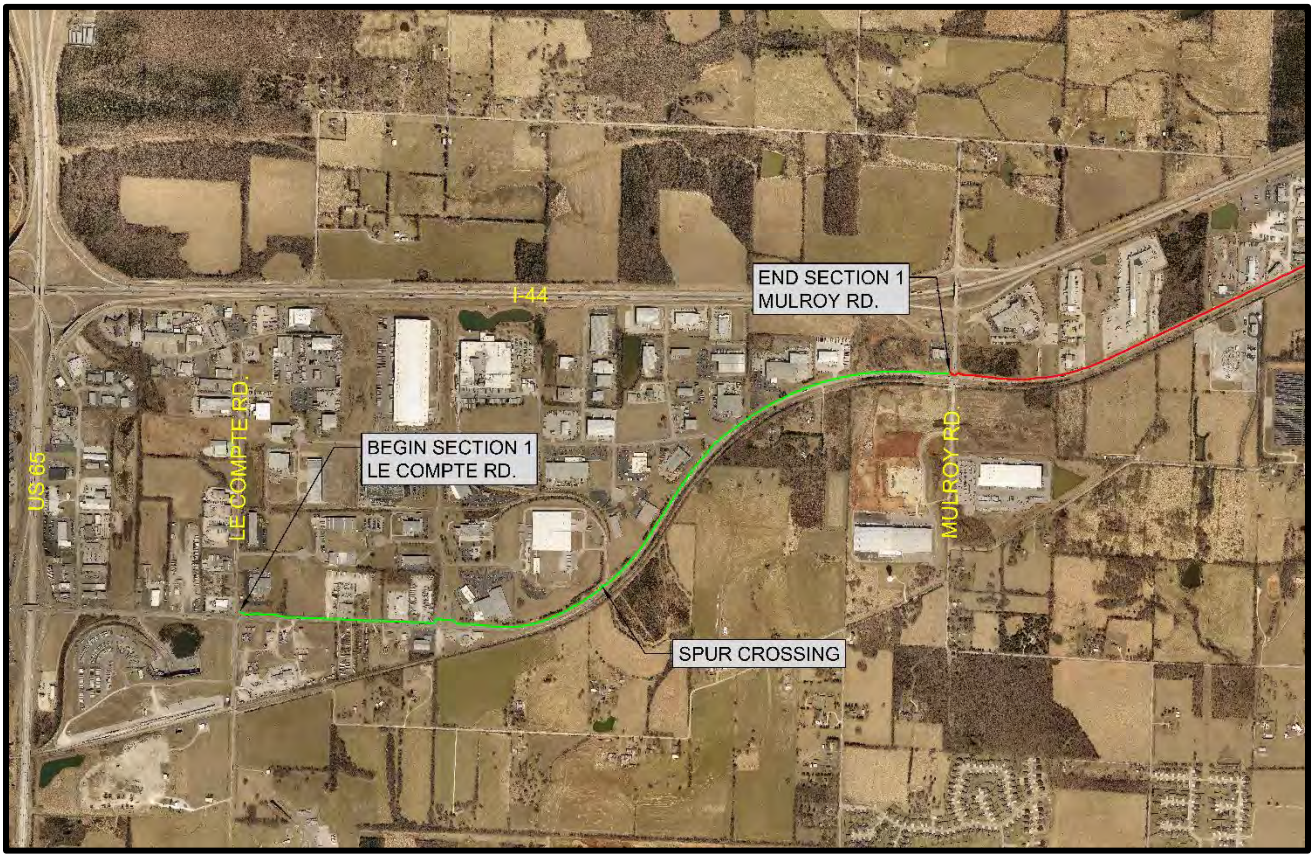


Figure 12: Trail Section 1

The challenges in the construction of this phase include:

- Signal improvements at Le Compte Rd.
- Tight right-of-way immediately west of Partnership Blvd.
- Rail spur crossing at PIC West
- Grading/drainage solutions vary greatly along alignment
- Utility easements required in a few areas

Section 2 –Mulroy to TransLand

Begins at the intersection of Mulroy Rd. and Old Route 66 and ends at the intersection of Old Route 66 and the entrance to TransLand.

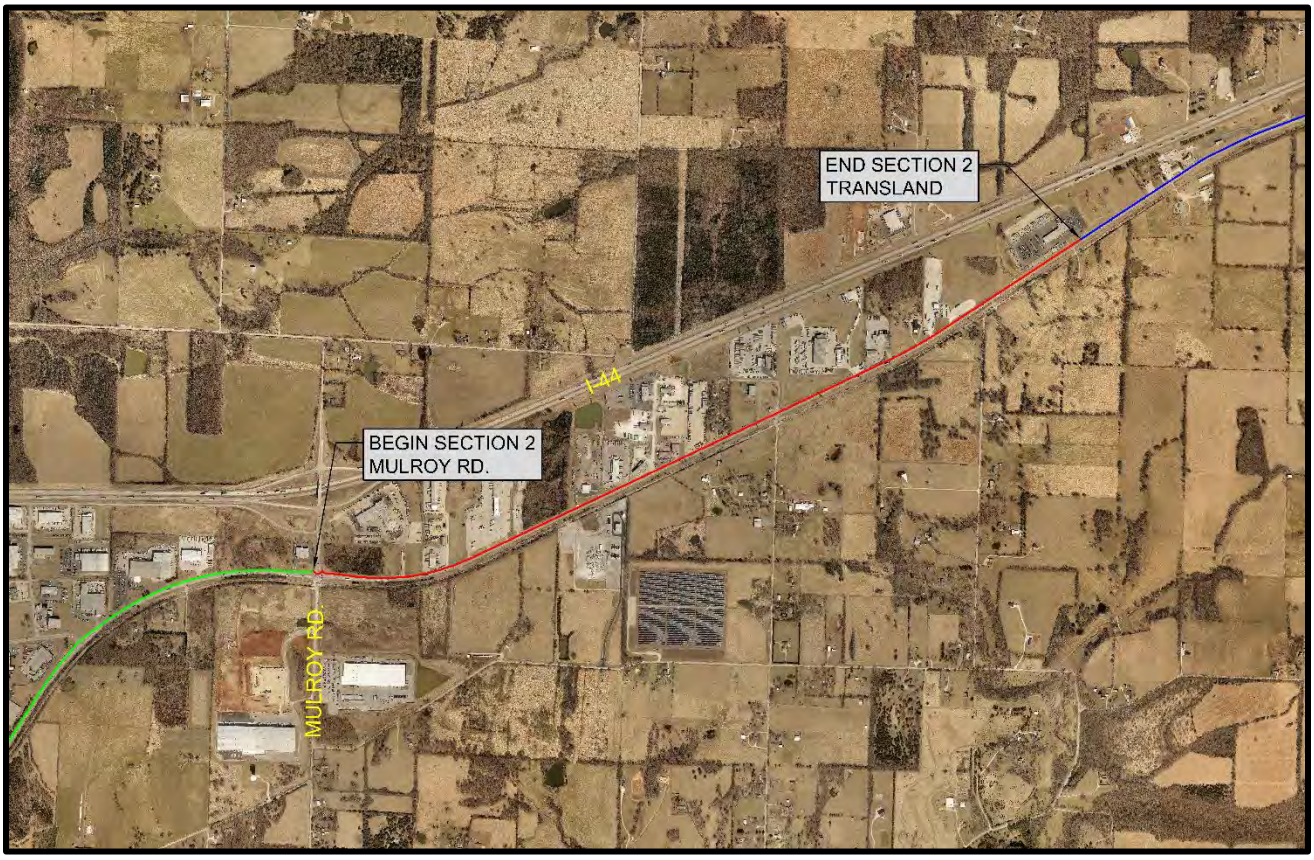


Figure 13: Trail Section 2

The challenges in the construction of this phase include:

- Crossing adjustments at Mulroy Rd.
- Grading/drainage solutions vary greatly along alignment
- Utility easements required in a few areas

Section 3 – TransLand to Washington Ave.

Begins at the intersection of Old Route 66 and the entrance to TransLand and ends at the northwest quadrant of the intersection of Old Route 66 and Washington Ave. in Strafford.

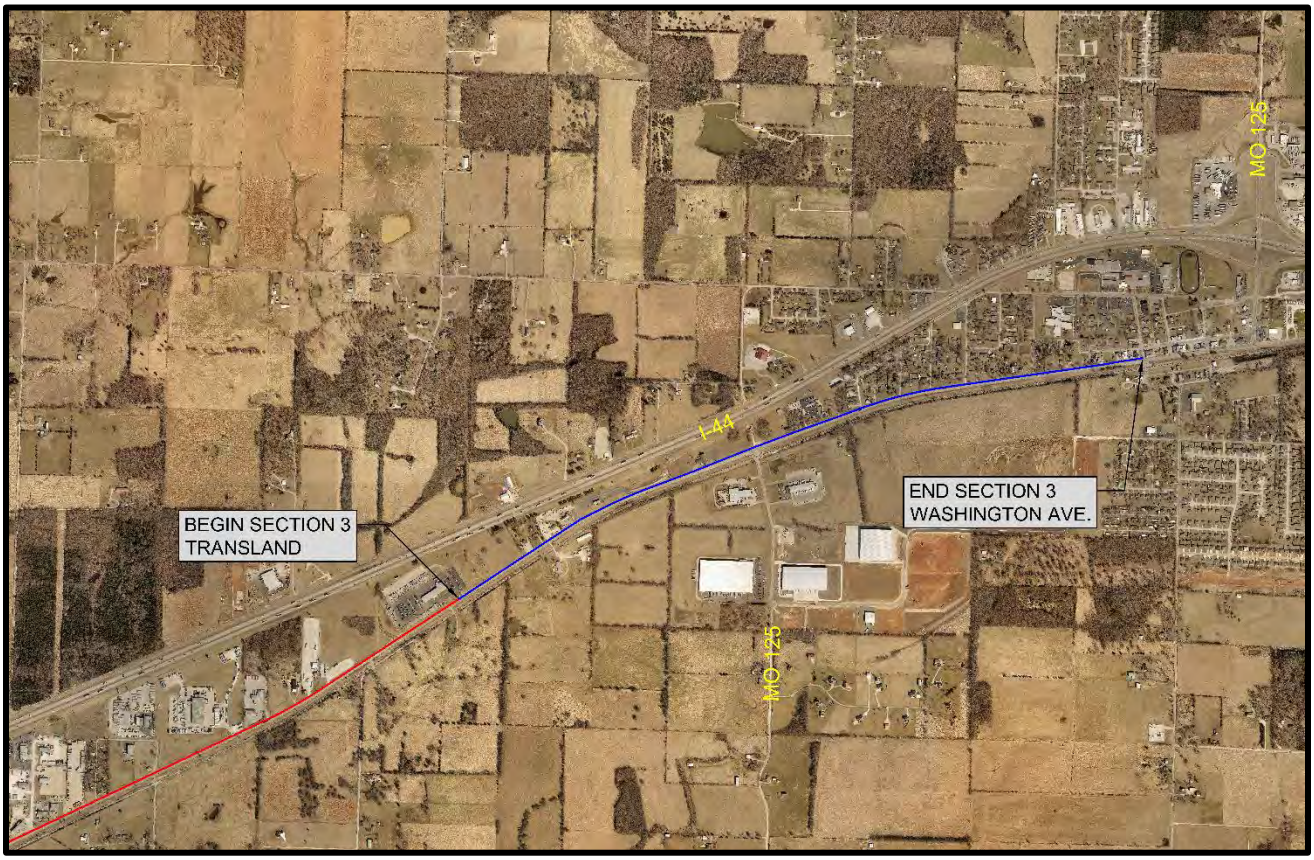


Figure 14: Trail Section 3

The challenges in the construction of this phase include:

- Signal improvements at Le Compte Rd.
- Enclosed Drainage required in multiple areas
- Utility easements required in a few areas

Figure 15: Preferred Trail Alignment Sections

Program costs for each section are listed below for the recommended Option 2B (North Parallel) alternative. These program costs are intended to recommend a high-level programming budget for the trail gap and may increase with the inclusion of aesthetic enhancements, more expensive drainage solutions, increases in property values, or other factors. A detailed summary of the full program costs for each section and the entire project (for the baseline and additional designs) can be found in **Appendix E**.

	Section 1 Program Budget	Section 2 Program Budget	Section 3 Program Budget
Construction Cost	$2,222,676.72	$2,538,779.76	$2,381,049.00
Preliminary Engineering (12%)	$266,721.21	$304,653.57	$285,725.88
Construction Engineering (12%)	$222,267.67	$253,877.98	$238,104.90
Right-of-Way	$80,000	$71,000	$43,000
Right-of-Way Incidentals	$80,000	$100,000	$190,000
Utility Relocation Costs	$105,000	$90,000	$70,000
Section Total	**$2,976,665.60**	**$3,358,311.31**	**$3,207,879.78**
Total	**$9,542,856.69**		

Table 5: Option 2B Program Budgets* for Sections 1, 2, and 3

** Program Cost is based on 2023 dollars and assumes a reasonable schedule for construction with no additional contingencies for acceleration. Program Cost does not include any additional contingencies for escalation of steel and fuel costs and is subject to change based on unforeseen fluctuation in costs necessary to construction that are out of the control of CMT.*

7.2 IMPLEMENTATION PLAN

As shown above, it is anticipated that the construction of the Old Route 66/Strafford Trail will need to take a phased approach due to the length and cost of the trail improvements. Below are additional suggestions to help streamline the implementation of the trail corridor:

1. Coordinate with MoDOT, City of Springfield, Greene County, and City of Strafford requiring new developments along the corridor to install 10' trail. See City of Ozark for examples of this.

2. Coordinate with MoDOT, City of Springfield, Greene County, and City of Strafford to ensure any roadway projects within the corridor accommodate the future trail alignment.

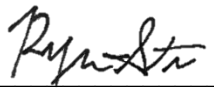
3. Keep a lookout for potential funding opportunities, see Section 7.2.1 below.

7.2.1 FUNDING OPPORTUNITIES

Trails are ever-growing in popularity in recent history and with this growth there has been additional grant funding allocated to trail projects. Some of these grant programs include Surface Transportation Block Grants, Department of Economic Development Grants, and Department of Natural Resource Grants.

As the project gains momentum, those grants (along with others) should be explored to provide valuable sources of potential funding for the project. One caveat to nearly all grant programs is that in order to obtain funding, dollar-for-dollar matches will be required. Therefore, as funding becomes available, it can be allocated to build the budget needed for the cost-share.

Submitted by:



Ryan Stehn, P.E.
CMT Project Manager

APPENDIX A – ROUTE 66 (STRAFFORD) TRAIL CONCEPT EXHIBITS

OPTION 1 - SOUTH PARALLEL

STRAFFORD R-VI
SCHOOL DISTRICT

MO 125

END TRAIL IMPROVEMENTS
MO 125

I-44

TRANSLAND

MO 125

BNSF RAILROAD

SIGNAL/CROSSING
IMPROVEMENTS
MULROY RD.

I-44

US 66

LE COMPTE RD.

MULROY RD.

PIC WEST

SPUR CROSSING

BEGIN TRAIL IMPROVEMENTS
KEARNEY ST. (OLD ROUTE 66)
& LE COMPTE RD.
MATCH EXIST SIDEWALK

OPTION 2A - 2017 REGIONAL TRAIL STUDY OPTION

STRAFFORD R-VI SCHOOL DISTRICT

MO 125

END TRAIL IMPROVEMENTS WASHINGTON AVE.

I-44

TRANSLAND

MO 125

BNSF RAILROAD

SIGNAL/CROSSING IMPROVEMENTS MULROY RD.

I-44

US 66

LE COMPTE RD.

MULROY RD.

PIC WEST

SPUR CROSSING

PARTNERSHIP BLVD. PEDESTRIAN CROSSING (HAWK)

BEGIN TRAIL IMPROVEMENTS KEARNEY ST. (OLD ROUTE 66) & LE COMPTE RD. MATCH EXIST SIDEWALK

OPTION 2B - NORTH PARALLEL

STRAFFORD R-VI
SCHOOL DISTRICT

MO 125

I-44

END TRAIL IMPROVEMENTS
WASHINGTON AVE.

TRANSLAND

MO 125

BNSF RAILROAD

SIGNAL/CROSSING
IMPROVEMENTS
MULROY RD.

I-44

US 66

LE COMPTE RD.

SIGNAL/CROSSING
IMPROVEMENTS
LE COMPTE RD.

PIC WEST

MULROY RD.

SPUR CROSSING

OPTION 3A - PINE ST.

STRAFFORD R-VI SCHOOL DISTRICT

I-44/MO 125 INTERCHANGE IMPROVEMENTS (MoDOT J8S3238)

WESTBOUND I-44

EASTBOUND I-44

McCABE ST.

MO 125

WASHINGTON AVE.

MADISON AVE.

JEFFERSON AVE.

OLD ORCHARD DR.

REDWOOD DR.

PINECREST AVE.

BLACK OAK

MAPLETREE LN.

FOLLOWS WEST SIDE OF WASHINGTON AVE.

PINE ST.

END IMPROVEMENTS PINE ST. & MO 125

EXISTING 10' SIDEWALK NORTH OF PINE ST.

OLD ROUTE 66

BNSF RAILROAD

SEE ALIGNMENT 2A FOR TRAIL TOWARDS SPRINGFIELD

OPTION 3B - WASHINGTON AVE.

STRAFFORD R-VI SCHOOL DISTRICT

I-44/MO 125 INTERCHANGE IMPROVEMENTS (MoDOT J8S3238)

MO 125

WESTBOUND I-44

EASTBOUND I-44

FOLLOWS NORTH SIDE OF McCABE ST.

McCABE ST.

FOLLOWS EAST SIDE OF WASHINGTON AVE.

WASHINGTON AVE.

MADISON AVE.

JEFFERSON AVE.

FOLLOWS WEST SIDE OF OLD ORCHARD DR.

OLD ORCHARD DR.

BLACK OAK

MAPLETREE LN.

PINECREST AVE.

REDWOOD DR.

PINE ST.

END IMPROVEMENTS PINE ST. & MO 125

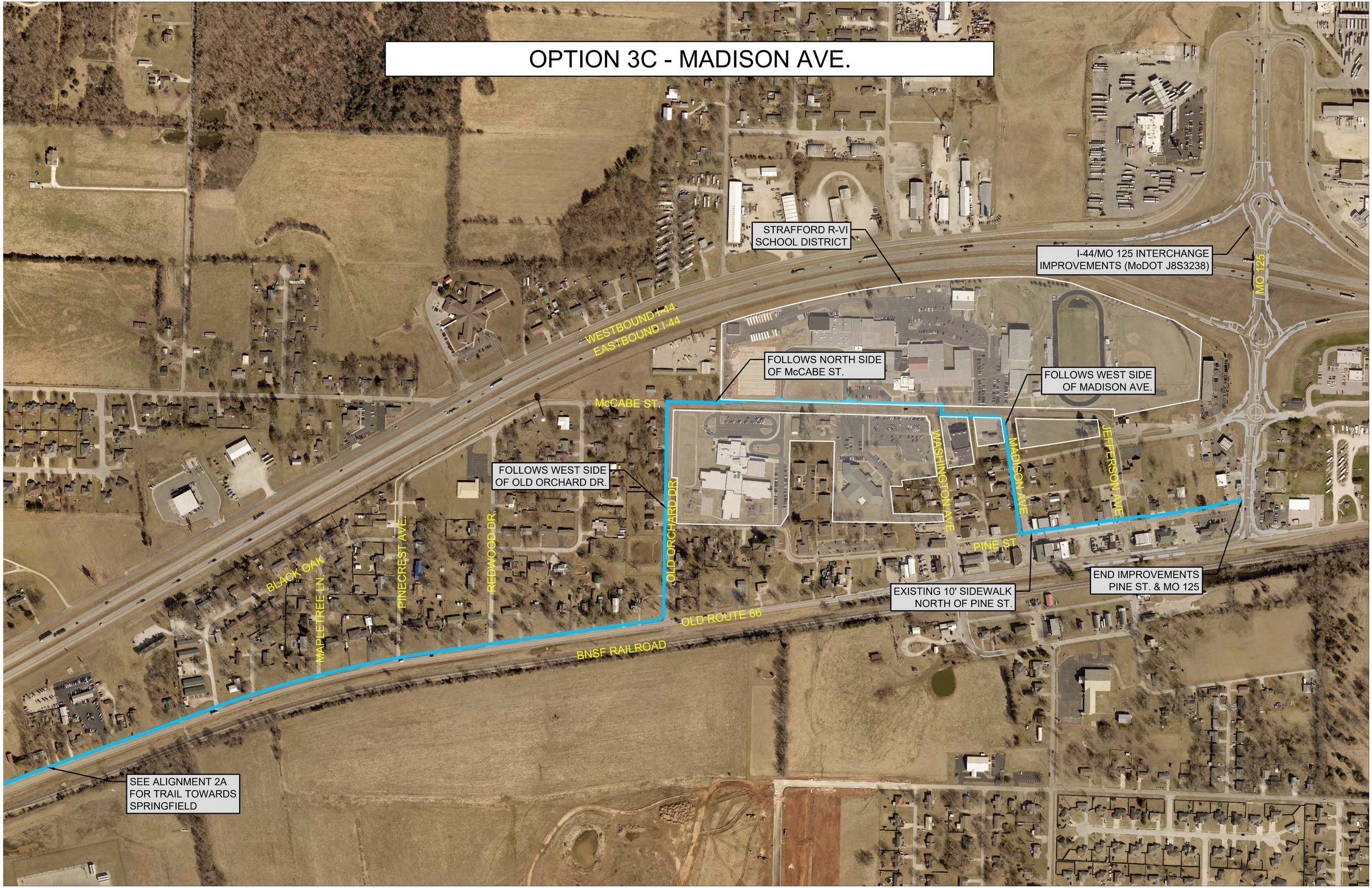
OLD ROUTE 66

EXISTING 10' SIDEWALK NORTH OF PINE ST.

BNSF RAILROAD

SEE ALIGNMENT 2A FOR TRAIL TOWARDS SPRINGFIELD

OPTION 3C - MADISON AVE.



OPTION 3D - PINECREST TO CHESTNUT

STRAFFORD R-VI SCHOOL DISTRICT

I-44/MO 125 INTERCHANGE IMPROVEMENTS (MoDOT J8S3238)

WESTBOUND I-44

EASTBOUND I-44

MO 125

FOLLOWS NORTH SIDE OF McCABE ST.

END IMPROVEMENTS CHESTNUT ST. & MO 125

McCABE ST.

WASHINGTON AVE.

MADISON AVE.

JEFFERSON AVE.

FOLLOWS WEST SIDE OF PINECREST AVE.

BLACK OAK

MAPLETREE LN.

PINECREST AVE.

REDWOOD DR.

OLD ORCHARD DR.

PINE ST.

OLD ROUTE 66

BNSF RAILROAD

SEE ALIGNMENT 2A FOR TRAIL TOWARDS SPRINGFIELD

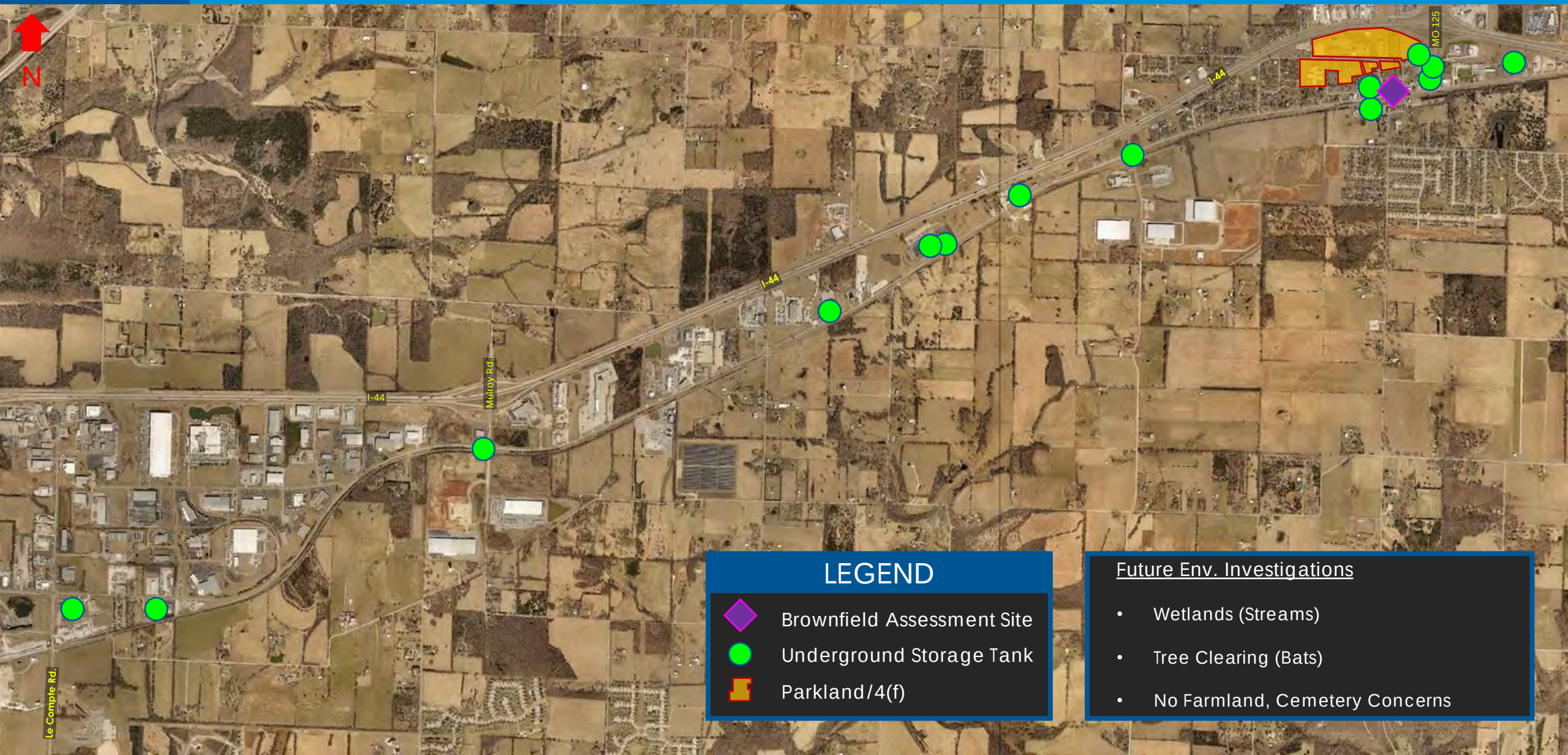
APPENDIX B – RECOMMENDED ALTERNATIVE (OPTION 2B) PROGRAM COST

Route 66/Strafford Trail				
Conceptual Design Alternatives 4/27/2023				
			NORTH PARALLEL	
Item	Unit	Unit Price	QTY	Total Cost
Removal of Improvements	LS	$ 100,000.00	2.2	$ 220,000.00
Excavation	CY	$ 15.00	15000	$ 225,000.00
Embankment	CY	$ 20.00	8500	$ 170,000.00
4" Concrete Multi-Use Trail	SY	$ 60.00	31559	$ 1,893,540.00
4" Agg. Base	SY	$ 10.00	46107	$ 461,070.00
8" Paved Approach	SY	$ 120.00	8370	$ 1,004,400.00
Concrete Curb & Gutter	LF	$ 45.00	6000	$ 270,000.00
Detectable Warning	SF	$ 30.00	1210	$ 36,300.00
Bollard	EA	$ 1,000.00	23	$ 23,000.00
Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Traffic Control	LS	$ 10,000.00	2.5	$ 25,000.00
Signals	LS	$ 150,000.00	1	$ 150,000.00
Signing	LS	$ 10,000.00	4.5	$ 45,000.00
Pavement Markings	LS	$ 10,000.00	3	$ 30,000.00
Drainage	LS	$ 1,000,000.00	1.3	$ 1,300,000.00
8 In. Pin-On Median	SY	$ 50.00	178	$ 8,900.00
Subtotal			**$**	**6,012,210.00**
Mobilization (8%)			$	480,976.80
Contingency (10%)			$	649,318.68
TOTAL CONSTRUCTION COST			**$**	**7,142,505.48**

CONSTRUCTION COST	**$**	**7,142,505.48**
PRELIMINARY ENGINEERING (12%)	**$**	**857,100.66**
CONSTRUCTION ENGINEERING (10%)	**$**	**714,250.55**
RIGHT-OF-WAY	**$**	**194,000.00**
RIGHT-OF-WAY INCEDENTALS	**$**	**370,000.00**
UTILITY RELOCATION COST	**$**	**265,000.00**
TOTAL PROGRAM COST	**$**	**9,542,856.69**

APPENDIX C – ENVIRONMENTAL MAPPING EXHIBIT

Environmental Constraints



APPENDIX D – TRAIL ALTERNATIVE 2A CONSTRUCTION COST

Route 66/Strafford Trail				
Conceptual Design Alternatives 4/27/2023				
			2017 REGIONAL TRAIL STUDY	
Item	Unit	Unit Price	QTY	Total Cost
Removal of Improvements	LS	$ 100,000.00	2.2	$ 220,000.00
Class 1 Linear Grading	STA	$ 1,300.00	347.02	$ 451,126.00
4" Concrete Multi-Use Trail	SY	$ 60.00	32000	$ 1,920,000.00
4" Agg. Base	SY	$ 12.50	46400	$ 580,000.00
8" Paved Approach	SY	$ 120.00	8800	$ 1,056,000.00
Concerete Curb & Gutter	LF	$ 45.00	5500	$ 247,500.00
Detectable Warning	SF	$ 30.00	1250	$ 37,500.00
Bollard	EA	$ 1,000.00	23	$ 23,000.00
Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Traffic Control	LS	$ 10,000.00	1	$ 10,000.00
Signals	LS	$ 200,000.00	1	$ 200,000.00
Signing	LS	$ 45,000.00	1	$ 45,000.00
Drainage	LS	$ 1,000,000.00	1.3	$ 1,300,000.00
Pavement Markings	LS	$ 30,000.00	1	$ 30,000.00
8 In. Pin-On Median	SY	$ 50.00	100	$ 5,000.00
		Subtotal	**$**	**6,275,126.00**
		Mobilization (10%)	$	627,512.60
		Contingency (10%)	$	690,263.86
		TOTAL CONSTRUCTION COST	**$**	**7,592,902.46**

APPENDIX E – RECOMMENDED ALTERNATIVE (OPTION 2B) PHASED COST

Route 66/Strafford Trail Conceptual Design Alternatives 4/27/2023								
			Phase 1 (Le Compte to Mulroy)		Phase 2 (Mulroy to TransLand)		Phase 3 (TransLand to Strafford)	
Item	Unit	Unit Price	QTY	Total Cost	QTY	Total Cost	QTY	Total Cost
Removal of Improvements	LS	$ 100,000.00	1.2	$ 120,000.00	0.5	$ 50,000.00	0.5	$ 50,000.00
Excavation	CY	$ 15.00	7200	$ 108,000.00	5700	$ 85,500.00	2100	$ 31,500.00
Embankment	CY	$ 20.00	3800	$ 76,000.00	2300	$ 46,000.00	2400	$ 48,000.00
4" Concrete Multi-Use Trail	SY	$ 60.00	11304	$ 678,240.00	12150	$ 729,000.00	8105	$ 486,300.00
4" Agg. Base	SY	$ 10.00	14260	$ 142,600.00	16662	$ 166,620.00	15185	$ 151,850.00
8" Paved Approach	SY	$ 120.00	1850	$ 222,000.00	3640	$ 436,800.00	2880	$ 345,600.00
Concrete Curb & Gutter	LF	$ 45.00	1000	$ 45,000.00	800	$ 36,000.00	4200	$ 189,000.00
Detectable Warning	SF	$ 30.00	360	$ 10,800.00	450	$ 13,500.00	400	$ 12,000.00
Bollard	EA	$ 1,000.00	8	$ 8,000.00	5	$ 5,000.00	10	$ 10,000.00
Erosion Control	LS	$ 150,000.00	0.4	$ 60,000.00	0.3	$ 45,000.00	0.3	$ 45,000.00
Traffic Control	LS	$ 10,000.00	1.5	$ 15,000.00	0.5	$ 5,000.00	0.5	$ 5,000.00
Signals	LS	$ 150,000.00	1	$ 150,000.00	0	$ -	0	$ -
Signing	LS	$ 10,000.00	2	$ 20,000.00	1	$ 10,000.00	1.5	$ 15,000.00
Pavement Markings	LS	$ 10,000.00	1	$ 10,000.00	0.5	$ 5,000.00	1.5	$ 15,000.00
Drainage	LS	$ 1,000,000.00	0.2	$ 200,000.00	0.5	$ 500,000.00	0.6	$ 600,000.00
8 In. Pin-On Median	SY	$ 50.00	106	$ 5,300.00	72	$ 3,600.00	0	$ -
Subtotal			**$**	**1,870,940.00**	**$**	**2,137,020.00**	**$**	**2,004,250.00**
Mobilization (8%)			$	149,675.20	$	170,961.60	$	160,340.00
Contingency (10%)			$	202,061.52	$	230,798.16	$	216,459.00
TOTAL CONSTRUCTION COST			**$**	**2,222,676.72**	**$**	**2,538,779.76**	**$**	**2,381,049.00**

CONSTRUCTION COST	**$ 2,222,676.72**	**$ 2,538,779.76**	**$ 2,381,049.00**
PRELIMINARY ENGINEERING (12%)	**$ 266,721.21**	**$ 304,653.57**	**$ 285,725.88**
CONSTRUCTION ENGINEERING (10%)	**$ 222,267.67**	**$ 253,877.98**	**$ 238,104.90**
RIGHT-OF-WAY	**$ 80,000.00**	**$ 71,000.00**	**$ 43,000.00**
RIGHT-OF-WAY INCEDENTALS	**$ 80,000.00**	**$ 100,000.00**	**$ 190,000.00**
UTILITY RELOCATION COST	**$ 105,000.00**	**$ 90,000.00**	**$ 70,000.00**
TOTAL PROGRAM COST	**$ 2,976,665.60**	**$ 3,358,311.31**	**$ 3,207,879.78**

APPENDIX F – PUBLIC MEETING ATTENDANCE SHEET & WRITTEN COMMENTS

Route 66 Trail Public Meeting

6/15/2023

4:00 – 6:00 pm

SIGN IN SHEET

NAME (PLEASE PRINT)	PHONE	EMAIL
Sarah Davis	417-496-6633	cdavis6633@gmail. n
Rod Foster	417 818 0146	
Kristi Taylor	(417) 224-2929	khritay@mchsi.com
GARY Kellogg	417 598 3206	

Route 66 Trail Public Meeting

6/15/2023

4:00 – 6:00 pm

SIGN IN SHEET

NAME (PLEASE PRINT)	PHONE	EMAIL
Tim McDonald	417-849-2807	timmymc@Aol.com
mike fisher	417 844-7297	

Route 66 Trail Public Meeting

6/15/2023

4:00 – 6:00 pm

SIGN IN SHEET

NAME (PLEASE PRINT)	PHONE	EMAIL
Linda Harmening	417-766-8865	lovemybarn23@gmail.com
Laura Berry	417-225-8010	laurafreeinchristberry@gmail.
JAN + DARLENE HARMON	417-849-2680	JPHARMON6658@GMAIL.COM
Brent/Sherry Hensley	(417) 343-0933	orgacres@aol.com
John Berry	4174259924	
Gary Shahan	417-736-2154	gshahan@strafford mo.net
Ashley French	417-988-6424	
ALICE HALE	417-343-2689	alice65757@yahoo.com
Becca Stangel	636-385-4111	beccagracelanger@gmail.com
RICHARD W CLARK	417-350-7815	N/A
Michelle Fronick	417-343-8288	michelle.fronick@hotmail.com
C/O Chip Braemmer	417-844-294	chip@advancedauto-mo.com
Debbie Cordova	417-496-6842	debbie-class83@yahoo.com

Route 66 Trail Alignment Study

Have a comment about the study?

Name Theresa Houska Email ozarktroutchaser@gmail.com

If possible, please include a barrier (guardrail) between automobile traffic on Kearney and the bike trail. Thank you.

CITY OF Springfield

Strafford MO "Gateway to Opportunity"

Route 66 Trail Alignment Study

Have a comment about the study?

Name Becca Stengel Email becca.gracelanger@gmail.com

I like the idea of a trail in Strafford. I live here and often have to go to Springfield, Marshfield, or Fellows Lake to walk my dog/hike. I like the route going past the school; it would be more scenic. It would add to the accessibility of old Route 66 as well in a different way besides driving

CITY OF Springfield

Strafford MO "Gateway to Opportunity"

Route 66 Trail Alignment Study

Have a comment about the study?

Name Gary Kellogg Email

Please put the trail on the south side of the highway (between road & RAIL). MODOT tried and failed to fix a drainage problem. Fix the problem and put the trail between the road & RAIL. I live on "OO" and I really don't want this trail going through my front yard and within 50 ft of my front door!

CITY OF Springfield

Strafford MO

"Gateway to Opportunity"

PUBLIC COMMENT

Area of concern: **Route 66 Trail Alignment Study**

City/County of concern: **Strafford/Greene County**

Date received: **06/15/2023** *Received through:* **Website Comment Form**

Contact Name: **Sarah Davis** *Contact Email/Ph #:* **sdavis8633@gmail.com**

Comment:

Hi! If this were to connect strafford to East Springfield….maybe….but, not to north Springfield. We are close enough to the Homeless situation there. We don't want a super highway foot trail to Strafford. Sarah Davis

OTO Response:

Good morning, Sarah!

Thank you for your comment. This information will be shared with the Route 66 Trail team, our Technical Planning Committee, and our Board of Directors.

Have a wonderful day!

PUBLIC COMMENT

Area of concern: **Route 66 Trail Study**

City/County of concern: **Strafford/Greene County**

Date received: **06/28/2023** *Received through:* **Website Comment Form**

Contact Name: **Jesse Sims** *Contact Email/Ph #:* **jesssfx@gmail.com**

Comment:

I'm all for a trail connecting to the city, I am not however okay with it being proposed on the North side of Route 66, any trail needs to be on the souther side of the road. There are too many people homes and yards on the north side of the road and it isn't fair to any of those homeowners. There is plenty of room on the south side of the road.

OTO Response:

Good morning, Jesse!

Thank you for your comment. Public input is vital to the planning process. This information will be shared with the project team as well as our Technical Planning Committee and Board of Directors.

Hope you have a wonderful day!

PUBLIC COMMENT

Area of concern: **Route 66 Trail Study**

City/County of concern: **Strafford/Greene County**

Date received: **07/02/2023** *Received through:* **Website Comment Form**

Contact Name: **Katty Kellogg** *Contact Email/Ph #:* **garyandkatty@gmail.com**

Comment:

I live on route 66. I'm concerned about bikers having convenient access to the private mailboxes of residents along Route 66. In addition, bikers would need to navigate safely across dozens & dozens of driveways. Residents are not accustomed to checking for cyclists when pulling out or backing out onto the road. The South side of Route 66 seems a far more reasonable choice and would be far less likely to intrude on anyone's privacy or compromise their safety or security.

OTO Response:

Good morning, Katty,

Thank you for your comment. Public input is vital to the planning process. This information will be shared with the project team as well as our Technical Planning Committee and Board of Directors.

Hope you have a wonderful day!