

Village of Bluffton

ALL/HAN-103-Corridor Study

December 2016

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Executive Summary

The Ohio Department of Transportation (ODOT) and Village of Bluffton, has retained Choice One Engineering to conduct a corridor management study along a portion of E. Jefferson Street (SR 103) in Allen and Hancock Counties. The purpose of this planning study is to address the known safety, congestion, and access concerns, particularly just west 1-75 where a high number of drives are present and to identify improvements that will result in a safe, traversable corridor for motor vehicles, pedestrians and bicyclists.

The limits of the study area are from the railroad tracks (near Huber Street) to Pocono Drive, a distance of nearly 1.2 miles. A total of 34 driveway access points are present within the study area, which are on average 134 feet apart. This is considerably less than the minimum 250-foot ODOT recommendation. The overall study does not contain crossing points for pedestrians, and the roadway typical section is narrow, making the area unsafe for pedestrians and bicyclists.

Choice One Engineering obtained crash data from ODOT's GIS Crash Analysis Tool and the Village of Bluffton for the period 2013-2015. The crash locations were plotted on an aerial image. Intersection and segment crashes were summarized in tabular form by type, severity, road condition, and time of day. A total of 30 crashes (16 intersection-related and 14 segment-related) occurred in the three-year period. About 60 percent of the total crashes were rear-end or angle type.

Manual turning movement counts were collected by Choice One Engineering on Tuesday, May 24, 2016 at the intersections of SR 103 & Citizens Parkway and SR 103 & County Line Road, and on Wednesday, May 25, 2016 at the intersection of SR 103 & Commerce Lane. Future year (2021, 2026, and 2036) traffic volumes were determined by applying seasonal adjustment factors and growth rates to the existing traffic volumes combined with projections for future development within or nearby the study corridor.

Capacity analysis were performed using the Highway Capacity Manual 2010 methodologies. Synchro 8 software was used for the analyses. All study intersections operate at acceptable Levels of Service (LOS) in the existing year. Capacity analyses were also performed for the study intersections using 2021, 2026, and 2036 traffic volumes. This exercise found that the study intersections will need improvements to operate at an acceptable LOS with future corridor growth.

The public open house regarding this study was held on September 13, 2016, from 6:00 to 8:00 PM at the Village of Bluffton Town Hall. The purpose of this meeting was to introduce the public to the study and obtain their initial comments on the perceived deficiencies in the study area. A formal presentation was given by Choice One Engineering during the open house, which explained the background of the study, identified problems along the corridor, and provided general concepts to fix these problems. Following the presentation, attendees divided into small groups where they were asked to share their concerns regarding the study area and suggest potential solutions for these areas of concern. The study team received eight written comments during the first meeting's public involvement period.

ODOT conducted a preliminary environmental summary for the SR 103 corridor planning study area. The purpose of the preliminary study was to identify any potential environmental issues. The environmental maps received from ODOT do not indicate that there are any detrimental issues that may affect the project from proceeding. During Choice One's field walk it was observed

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that there are major oil pipelines near the railroad and Citizens Parkway. These areas may require further investigation for potential contaminated soils and utility conflicts. Appendix "B" contains the environmental summaries.

Following the first public meeting, various intersection treatments and access management strategies were considered for the SR 103 corridor. Several concepts were prepared, which included, but were not limited to, traffic signals, turn lanes, two-way-left turn lanes, a roundabout, bike lanes, sidewalks, and multi-use paths.

Based on existing conditions and anticipated growth due to the opening of potential future developments, the recommended improvements to the surrounding roadway network are as follows:

Existing Year 2017 Traffic Scenario

General

1. The Village is to prepare and accept an access management plan.

Intersection #1 – SR 103 & County Line Road

- 2. Remove the overhead flashing light.
- 3. Install LED flashing stop signs along the County Line Road approaches.

Opening Year 2021 No-Build Traffic Scenario

SR 103 (Allen County) – from the railroad track to County Line Road

4. Widen the roadway dimensions from the existing 26' edge-of-pavement to edge-of-pavement to 28' back-of-curb to back-of-curb. The proposed typical section include two (2) 12' travel lanes, 5' sidewalk on the south side, 10' shared use path on the north side, and decorative lighting. Figure 16 on page 36 illustrates the proposed typical section and layout.

SR 103 (Hancock County) – from County Line Road to the I-75 Southbound Ramp

5. Widen the roadway dimensions from the existing 26' edge-of-pavement to edge-of-pavement to 40' back-of-curb to back-of-curb. Stripe the roadway as a three-lane roadway including a two-way left-turn lane (1WL1L). The proposed typical section includes two (2) 12' travel lanes, one (1) 12' TWLTL, 6' sidewalk on the south side, 10' shared use path on the north side, and decorative lighting. Lower the profile of SR 103 on the east side of SR 103 & County Line Road to increase intersection sight distance. Figure 16 on page 36 illustrates the proposed typical section and layout.

Railroad Crossing for Pedestrians

6. Install a pedestrian crossing, including gates, at the railroad. This work includes the relocation of the existing railroad crossing controller. All work will need to be coordinated with the railroad owner.

Intersection #1 - SR 103 & County Line Road

- 7. Stripe a 145 foot westbound left turn lane on SR 103.
- 8. Stripe a 160 foot westbound right turn lane on SR 103.
- 9. Widen the radii at the intersection to accommodate for truck traffic.

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Intersection #2 - SR 103 & Citizens Parkway

- 10. Stripe a 225 foot eastbound left turn lane on SR 103.
- 11. Stripe a 220 foot castbound right turn lane on SR 103.
- 12. Stripe a 305 foot westbound left turn lane on SR 103.
- 13. Stripe a 200 foot westbound right turn lane on SR 103.
- 14. Widen the radii at the intersection to accommodate for truck traffic.

Intersection #3 - SR 103 & Commerce Lane

- 15. Stripe a 130 foot eastbound left turn lane on SR 103.
- 16. Stripe a 140 foot westbound right turn lane on SR 103.

Opening Year 2021 Build Traffic Scenario

2021 No-Build Improvements (#1-16) Apply

Intersection #3 – SR 103 & Commerce Lane
17. Install a traffic signal. (*See Note Below)

Opening Year 2026 No-Build Traffic Scenario

2021 Build Improvements (#1-17) Apply

Intersection #1 – SR 103 & County Line Road
18. Install a traffic signal. (*See Note Below)

Opening Year 2026 Build Traffic Scenario

2026 No-Build Improvements (#1-18) Apply

Intersection #1 – SR 103 & Citizens Parkway

19. Install a traffic signal. (*See Note Below)

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^{*} Note: Traffic signals should not be installed before completing a future signal warrant analysis. The recommendations above are based on an estimated construction sequence and the actual construction sequence for the developments may vary.







1. Introduction

1.1 Background

The desire to improve SR 103 stems from the Village of Bluffton's Transportation Plan and Community Vision Report. Bluffton has identified this corridor as the Village's primary gateway to attract/welcome visitors and residents, and it has the greatest potential for industrial and commercial development. Currently, the proposed active Transportation Plan shows a secondary signed rural bike route and sidewalk along SR 103 which is vital to pedestrian and bicyclist safety. The Community Vision Report lays out the Village's desire to improve SR 103 as a streetscape including lighting and sidewalks to attract new businesses and enhance existing businesses. Recognizing the importance of strategic planning, the Village's Vision Report acknowledges the need for corridor planning and access management policies.

This corridor study identifies the transportation needs of the corridor for the near future and in the horizon future (20-year build-out). One component of the corridor study is reviewing the highway safety, and applying for Highway Safety Improvement Program (HSIP) funding if the study identifies a need. The HSIP is a construction initiative designed to make improvements at high-crash and severe-crash locations. ODOT is working cooperatively with municipalities to address the safety issues along corridors in Ohio.

The Ohio Department of Transportation, in coordination with the Village of Bluffton and Lima-Allen County Regional Planning Commission (LACRPC), retained Choice One Engineering Corporation to prepare a corridor study to address known safety and access concerns and to identify improvements for the SR 103 corridor in the Village of Bluffton, Allen/Hancock County, Ohio. Any proposed improvements to the corridor will focus on a safe, traversable corridor for motor vehicles, pedestrians and bicyclists.

1.2 Purpose and Need

The purpose of the corridor study is to identify congestion, safety, barriers to pedestrian and bicycle access, access management concerns, and to improve traffic operations and access along the SR 103 corridor. This corridor is a top priority transportation link for the Village, thus the Village desires to complete the corridor study to identify and address deficiencies such as safety issues, congestion issues, bicycle and pedestrian issues, and develop a corridor plan for future roadway and economic development to connect the downtown to this business district. The analysis is needed to determine potential improvements in an effort to help reduce the number of safety incidents, improve multi-modal operations, and to safely and efficiently accommodate further development.

This area of SR 103 lacks a resource for multi-modal transportation, experiences delay during peak hours due to left-turning traffic and no turn lanes, has areas with poor sight distance, and experiences crashes. In the study area there have been 30 crashes between 2013 and 2015; 11 rear end, 7 angle, and 5 fixed-object crashes were the predominant crashes. In addition to the crashes, access management principles have not applied in the past to developments along the corridor, which may contribute to highway congestion. Pedestrians and bicyclists currently do not have a safe and efficient method to access the restaurants and shops along SR 103 corridor due to lack of sidewalks, narrow shoulders, and the speed of traffic. Potential economic and business growth will need safe and efficient access to the highway.

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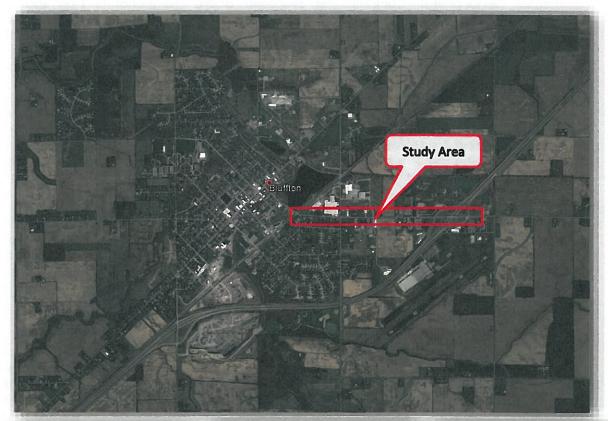




1.3 Limits of the Study Area

The limits of the study area are from the railroad tracks to Pocono Drive, a distance of roughly 1.2 miles. The approximate limits of the study area are shown in **Figure 1**. In terms of connectivity of the transportation network, SR 103 has an interchange with Interstate 75 immediately adjacent to the east end of the project.

Figure 1: Vicinity Map









Citizens Parkway & SR 103



Commerce Lane & SR 103

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2. Existing Conditions

2.1 Existing Roadway Conditions

The corridor is located in the Village of Bluffton, Allen/Hancock County, Ohio. The following existing conditions are based on field observations.

Jefferson Street (SR 103- Allen County) – Two (2) Iane major collector that traverses in an east-west direction and is maintained by the Village of Bluffton. The posted speed limit is 35 mph and has an AADT of 4,690 in the vicinity of the study.

Jefferson Street (SR 103- Hancock County) – Two (2) lane major collector that traverses in an east-west direction and is maintained by the Village of Bluffton. The posted speed limit is 45 mph and has an AADT of 6,417 in the vicinity of the study.

County Line Road – Two (2) lane local road that traverses in a north-south direction and is maintained by the Village of Bluffton. The posted speed limit is 45 mph and has an AADT of 1,201 in the vicinity of the study.

Citizens Parkway – Two (2) lane local road that traverses in a north-south direction and is maintained by the Village of Bluffton. The posted speed limit is 25 mph in the vicinity of the study.

Commerce Lane – Two (2) lane local road that traverses in a north-south direction and is maintained by the Village of Bluffton. The posted speed limit is 25 mph in the vicinity of the study. Each of the intersections in the corridor are stop controlled and free flow along SR 103.

The overall study does not contain crossing points for pedestrians and the roadways typical section is narrow, making the area unsafe for pedestrians and bicyclists. Currently, the only sidewalk along SR 103 extends 250 feet east of the SR 103 and Huber Street intersection on the south side.

Figures 2 & 3 illustrate the Condition Diagrams. Appendix "C" includes photos of the corridor.

2.2 Traffic Counts and Speed Data

Ten (10) hour manual turning movement counts were collected by Choice One Engineering on Tuesday, May 24, 2016 at the intersections of SR 103 & Citizens Parkway and SR 103 & County Line Road and on Wednesday, May 25, 2016 at the intersection of SR 103 & Commerce Lane. Data was collected from 6:00 to 10:00 AM, 11:00 AM to 1:00 PM, and 2:00 to 6:00 PM.

Table 1: Summary of Peak Hours

Intersection	AM Peak Hour	PM Peak Hour	
SR 103 & Citizens Parkway	7:15 to 8:15 AM	4:30 to 5:30 PM	
SR 103 & County Line Road	7:30 to 8:30 AM	3:15 to 4:15 PM	
SR 103 & Commerce Lane	7:30 to 8:30 AM	3:15 to 4:15 PM	

Figure 4 illustrates the 2016 Existing Traffic Volumes.

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Four (4) 24-hour automatic traffic recorder (ATR) counts including speed data were conducted along SR 103 near Diamond Manufacturing, the Auto & Truck Center, I-75 Southbound Ramp, and I-75 Northbound Ramp. Vehicles were recorded traveling above the posted speed limit of 35 mph on the Allen County section of SR 103. Vehicles were recorded traveling at or near the posted speed limit of 45 mph on the Hancock County section of SR 103. The results of the speed data is as follows:

85th Percentile Speed Traveling along SR 103

- Traffic near Diamond Manufacturing 42 mph (Posted Speed Limit 35 mph)
- Traffic near the Auto & Truck Center 44 mph (Posted Speed Limit 45 mph)
- Traffic near I-75 Southbound Ramp 42 mph (Posted Speed Limit 45 mph)
- Traffic near I-75 Northbound Ramp 51 mph (Posted Speed Limit 45 mph)

The existing traffic volume count data and speed data can be seen in Appendix "A".

2.3 Existing Multi-Use Paths

Along the SR 103 corridor there are two (2) existing multi-use paths. The first is Triplett Bikeway which surrounds Cob Lake just west of the project limits. The work proposed in this study includes tying into Triplett Bikeway (existing multi-use path) for improved pedestrian access. The second existing multi-use path connects to Commerce Lane and runs parallel to SR 103. This path gives pedestrians limited access to the SR 103 businesses, but due to its location fewer citizens utilize the path.

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3. Future Development/Planned Projects

3.1 Land Use Assignments

Choice One Engineering worked with the Village of Bluffton and the Lima-Allen County Regional Planning Commission to develop land use assignments for undeveloped property near SR 103. In addition to the general growth, nearby areas were identified as potential sites for future land developments. Based on the developable area, the following were assumed for the areas shown in Figure 8.

- Development 1 19,000 square feet of single tenant office space and 54,000 square feet of general office space. Opening Year 2021.
- Development 2 32,000 square feet of single tenant office space, 48,000 square feet of general office space, and 19.8 acres of office park. Opening Year 2026.
- Development 3 4,000 square feet fast food restaurant and 20.8 acres of business park.
 Opening Year 2026.
- Development 4 7.0 acres of single family homes and 40 apartment dwelling units.
 Opening Year 2036.

Choice One used the county auditor's webpage along with previous job experience to develop appropriate square footages for the future buildings. For single tenant office space and general office space, it was determined that the buildings would be approximately 8,000 square feet per acre. For the fast-food restaurant, it was determined that the building would be approximately 4,000 square feet.

3.2 Future Roads

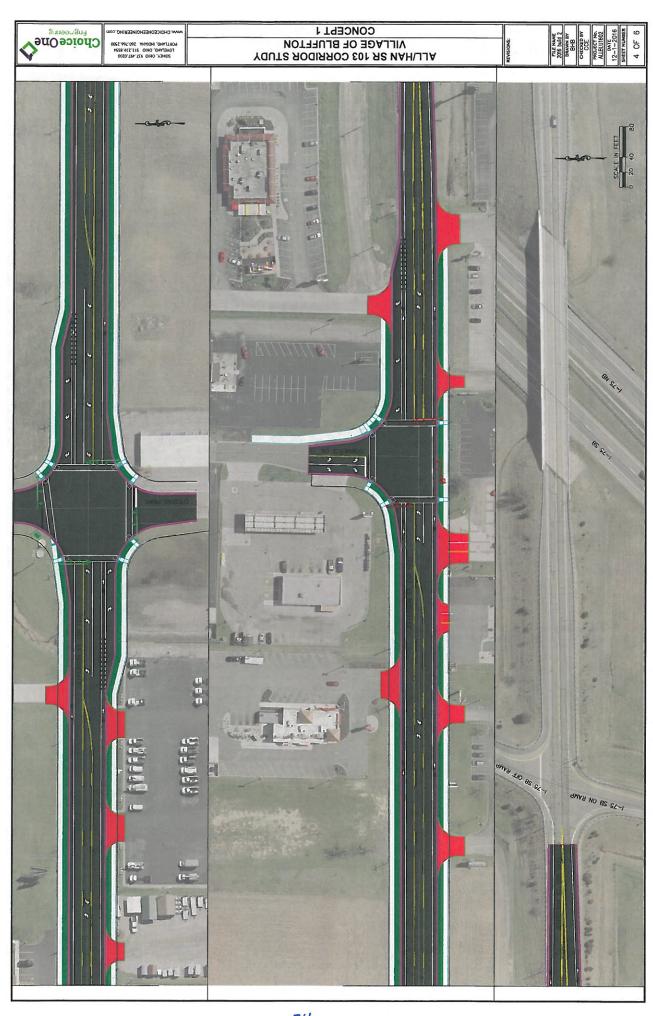
To accommodate the future land development, the following roads are expected to be constructed:

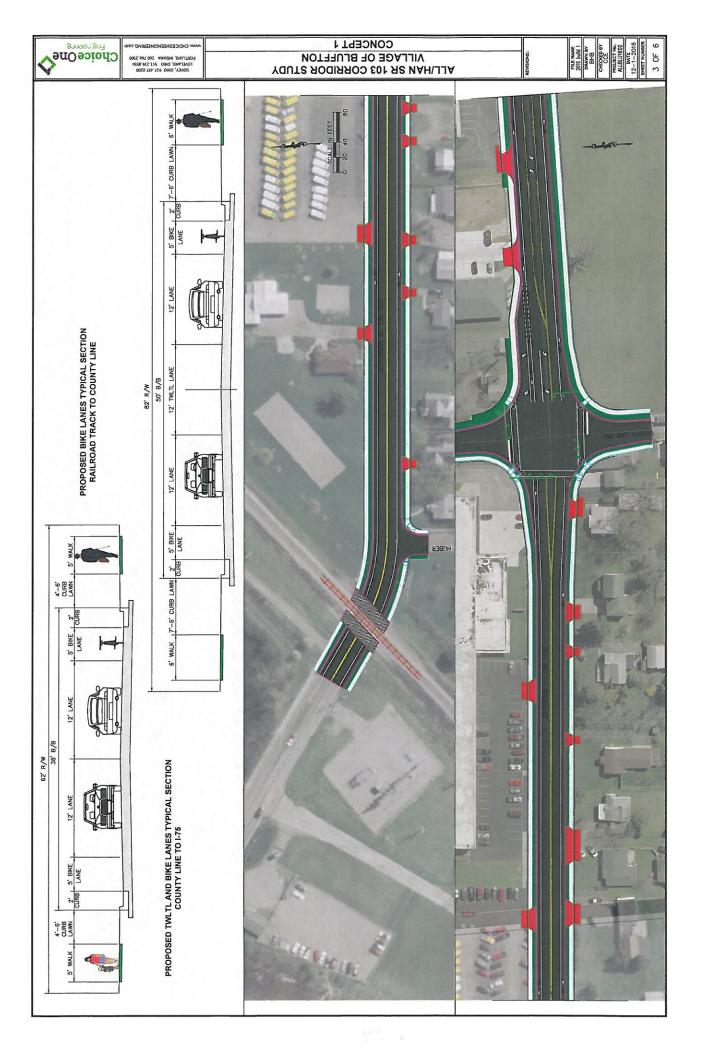
- Development 1 A road, running parallel to SR 103, should be constructed to connect Citizens Parkway and Commerce Lane.
- Development 2 A cul-de-sac roadway should be constructed off of Citizens Parkway to service the future office park.
- Development 3 None.
- Development 4 Cherry Street should be extended from County Line Road to Citizens
 Parkway to service future single family homes. A cul-de-sac should be constructed off of
 the Cherry Street extension to service the future apartments.

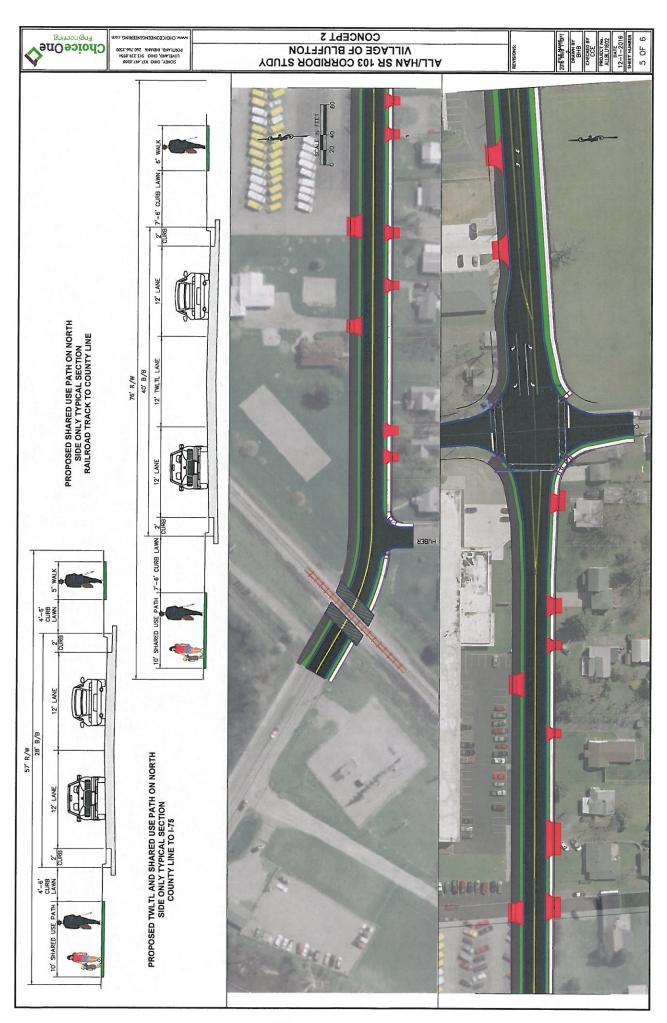
This study evaluates the SR 103 corridor west of the I-75 Southbound Ramp. The existing I-75 bridge crossing bottlenecks some of the desired improvements. The SR 103 corridor east of the I-75 Southbound Ramp should be evaluated as ODOT plans the replacement of the I-75 bridge crossing in the future. With potential development on the east side of I-75, it may be desired to extend the proposed pedestrian facilities to Pocono Drive.

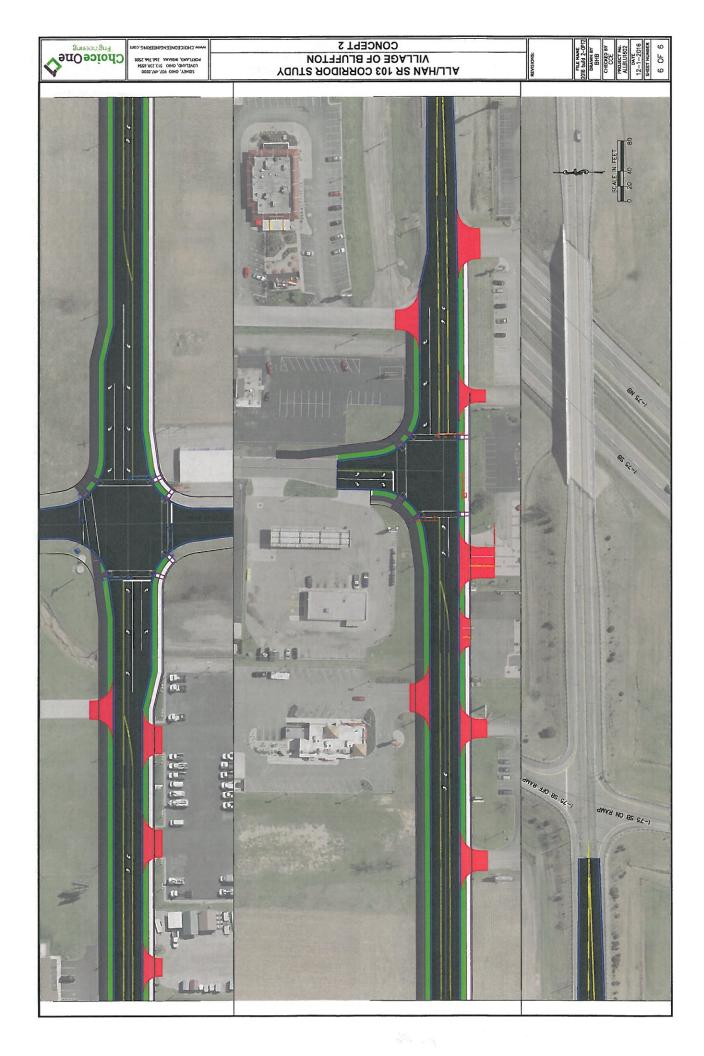
3.3 Planned Project(s)

A bridge replacement project is planned for the bridge located approximately 600 feet west of Huber Street. This project is expected to occur during the year 2019.















7. Open House & Public Involvement

7.1 Open House & Public Involvement

A full summary of the open house along with the materials from the meeting (including sign-in sheets, handouts, presentation, and comments received) are contained in **Appendix "E"**.

The public open house was held on September 13, 2016, from 6:00 to 8:00 PM at the Village of Bluffton Town Hall. The purpose of this meeting was to introduce the public to the study and obtain their initial comments on the perceived deficiencies in the study area. A formal presentation was given by Choice One Engineering during the open house, which explained the background of the study, identified problems along the corridor, and introduced general concepts to fix these problems. Following the presentation, attendees divided into small groups where they were asked to share their concerns regarding the study area and suggest potential solutions for these areas of concern. The study team received eight written comments during the first meeting's public involvement period. The main concerns raised at the open house and through written comments were the need for pedestrian facilities, turn lanes, street lighting, and an access management plan. Upon acceptance of the corridor study, the Village of Bluffton should make the study available to the participants of the public meeting and the public in general.

8. Preferred Alternative

8.1 Preferred Alternative

A final recommended concept (Concept 2) was prepared with the following highlights:

Existing Year 2017 Traffic Scenario

General

1. The Village is to prepare and accept an access management plan.

Intersection #1 – SR 103 & County Line Road

- 2. Remove the overhead flashing light.
- 3. Install LED flashing stop signs along the County Line Road approaches.

Opening Year 2021 No-Build Traffic Scenario

SR 103 (Allen County) – from the railroad track to County Line Road

4. Widen the roadway dimensions from the existing 26' edge-of-pavement to edge-of-pavement to 28' back-of-curb to back-of-curb. The proposed typical section include two (2) 12' travel lanes, 5' sidewalk on the south side, 10' shared use path on the north side, and decorative lighting. Figure 16 on page 36 illustrates the proposed typical section and layout.

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SR 103 (Hancock County) – from County Line Road to the I-75 Southbound Ramp

5. Widen the roadway dimensions from the existing 26' edge-of-pavement to edge-of-pavement to 40' back-of-curb to back-of-curb. Stripe the roadway as a three-lane roadway including a two-way left-turn lane (TWLTL). The proposed typical section includes two (2) 12' travel lanes, one (1) 12' TWLTL, 6' sidewalk on the south side, 10' shared use path on the north side, and decorative lighting. Lower the profile of SR 103 on the east side of SR 103 & County Line Road to increase intersection sight distance. Figure 16 on page 36 illustrates the proposed typical section and layout.

Railroad Crossing for Pedestrians

6. Install a pedestrian crossing, including gates, at the railroad. This work includes the relocation of the existing railroad crossing controller. All work will need to be coordinated with the railroad owner.

Intersection #1 – SR 103 & County Line Road

- 7. Stripe a 145 foot westbound left turn lane on SR 103.
- 8. Stripe a 160 foot westbound right turn lane on SR 103.
- 9. Widen the radii at the intersection to accommodate for truck traffic.

Intersection #2 – SR 103 & Citizens Parkway

- 10. Stripe a 225 foot eastbound left turn lane on SR 103.
- 11. Stripe a 220 foot eastbound right turn lane on SR 103.
- 12. Stripe a 305 foot westbound left turn lane on SR 103.
- 13. Stripe a 200 foot westbound right turn lane on SR 103.
- 14. Widen the radii at the intersection to accommodate for truck traffic.

Intersection #3 - SR 103 & Commerce Lane

- 15. Stripe a 130 foot eastbound left turn lane on SR 103.
- 16. Stripe a 140 foot westbound right turn lane on SR 103.

Opening Year 2021 Build Traffic Scenario

2021 No-Build Improvements (#1-16) Apply

Intersection #3 – SR 103 & Commerce Lane

17. Install a traffic signal. (*See Note on the Following Page)

Opening Year 2026 No-Build Traffic Scenario

2021 Build Improvements (#1-17) Apply

Intersection #1 - SR 103 & County Line Road

18. Install a traffic signal. (*See Note on the Following Page)

Opening Year 2026 Build Traffic Scenario

2026 No-Build Improvements (#1-18) Apply

Intersection #1 – SR 103 & Citizens Parkway

19. Install a traffic signal. (*See Note on the Following Page)







* Note: Traffic signals should not be installed before completing a future signal warrant analysis. The recommendations above are based on an estimated construction sequence and the actual construction sequence for the developments may vary.

A preliminary cost estimate for the preferred alternative (Concept 2) is provided in **Appendix** "M". The total cost of the preferred alternative is \$10.5 million dollars. The preliminary cost estimate includes construction, right-of-way, environmental, utility relocation, construction engineering, design engineering, inflation, and 10% contingency. The utility relocation summary is located in **Appendix** "B".







EXISTING TRAFFIC COUNT VOLUME DATA

SR 103 Utility Coordination

As part of this planning study, Choice One has been in contact with OUPS to identify possible utilities along or near SR 103. Below is a list of the utility companies that have been contacted.

- American Electric Power
- Buckeye Pipe Line Company
- Century Link
- Mid Valley Pipeline
- Sunoco Pipeline

SR 103 Utility Overview

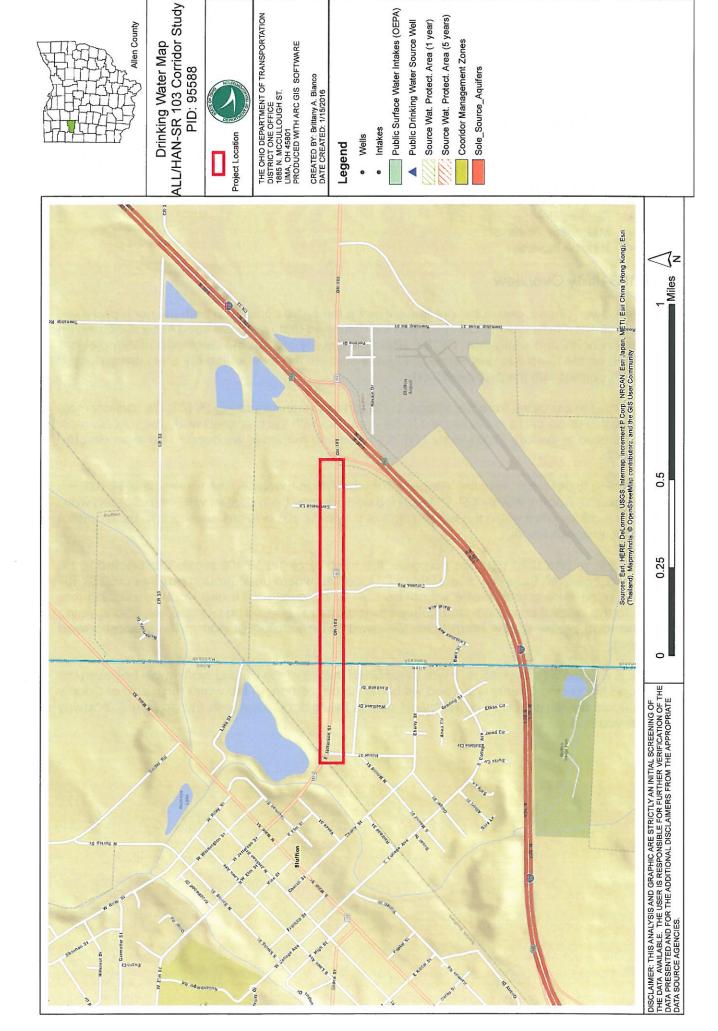
Aerial power, phone, and cable are present along the entire corridor on both the north and south side of SR 103. On the Allen County section the overhead utility poles will need to be relocated on both the north and south side. On the Hancock County section the overhead utility poles are located on the north side and will need to be relocated. The overhead utility poles are expected to be in conflict with the proposed work.

According to old plans, from the Village, a 12" sanitary main runs along SR 103. This sanitary main is at least 7' deep and is not expected to be in conflict with the proposed work. The sanitary main was installed in the late 1980's/early 1990's. The existing manholes will need to be reconstructed to grade.

According to old plans, from the Village, a 10" water main runs along the south side of SR 103. This water main is approximately 4.5'-5' deep and portions may be in conflict with the proposed work. Hydrants are located within the existing right of way of SR 103 and are expected to be in conflict with the proposed work.

For drainage and sight distance purposes, the majority of the SR 103 profile is expected to be lowered, however, there are at least three (3) locations where underground gas lines cross SR 103 in which the existing road profile will not be able to be lowered. It is also worth mentioning that due to the installation of curb and gutter, inadequately sized existing storm sewer, and lowering of the road profile, a new storm sewer will need to be installed as part of the proposed road project.

After discussion with the Village, it was determined that all of the existing water main between the railroad tracks and County Line Road will be replaced. Portions of the water main east of County Line Road are expected to be replaced due to the lack of cover with the proposed roadway improvements.



Public Input

The first public open house was held on September 13, 2016, from 6:00 to 8:00 PM at the Village of Bluffton Town Hall. The purpose of this meeting was to introduce the public to the study and obtain their initial comments on the perceived deficiencies in the study area. Representatives from ODOT District 1, the Village of Bluffton, and Choice One Engineering were available to answer questions about the study and solicit feedback from the attendees.

A formal presentation was given by Choice One Engineering during the open house, which explained the background of the study, identified problems along the corridor, and general concepts to fix these problems. Following the presentation, attendees divided into small groups where they were asked to share their concerns regarding the study area and suggest potential solutions for these areas of concern. The study team received eight written comments during the first meeting's public involvement period.

Following the first public meeting, various intersection treatments and access management strategies were considered for the SR 103 corridor. The key problems and solutions that were identified during the small group activity as well as on the comment forms are as follow:

Problems

- Poor access management
- Lack of pedestrian facilities
- Need for crosswalks
- Separate bike and pedestrian facilities
- Congestion by the businesses
- Lack of turn lanes
- Poor sight distance at County Line Road

Solutions

- Create access management plan
- Share drives where possible
- Provide pedestrian crossings
- Provide sidewalks
- Provide multi-use path
- Provide two-way left-turn lane
- Install traffic signals
- Provide additional roads for access
- Provide street lighting

The study team will further examine the identified problems and identify potential concepts to solve these problems over the coming months.

Date: August 25, 2016

Re: ALL/HAN-103-Corridor Study PID 95588

Dear Resident/Tenant/Property Owner:

The Village of Bluffton in conjunction with Ohio Department of Transportation (ODOT) are considering countermeasures to improve safety on Jefferson Street in the Village of Bluffton. The Village has initiated a corridor study for SR 103, between Pocono Drive and the railroad crossing, to determine potential countermeasures to improve operations and safety. With this project, the Village is considering potential countermeasures recommended by the recent safety study draft and requests your feedback.

Background

For the purposes of this letter, Choice One Engineering has compiled a few key facts about this corridor:

- The corridor was identified in the Village of Bluffton's Transportation Plan and Community Vision Report as needing improvements to link the corridor to the Village's downtown.
- From 2013-2015, 30 crashes occurred on SR 103 from the I-75 Southbound Ramp to the railroad crossing. The most prominent crash trend involves rear end crashes as drivers stop to turn from SR 103. The lack of turn lanes along SR 103 may be the main contributing factor in these crashes.
- SR 103 consist of two (2) 11' lanes throughout the study area with no bike lanes or sidewalks. These roadway conditions are not conducive to multimodal transportation.
- SR 103 carries between 4,690 6,417 vehicles per day, with a low truck volume of 2-4%.
- Over the next 20 years, there is potential for significant development on the adjacent properties which will increase the roadway volumes.
- The speed limit on SR 103 is 45 mph east of County Line Road and 35 mph west of County Line Road.

Potential Countermeasures and Improvements

- Complete the corridor study. As part of the study consider the following:
 - o Review access management and develop an access management plan.
 - o Consider removing overhead flasher at SR 103 & County Line Road and install LED stop signs.
 - o Consider a two-way left turn lane or install left turn bays at the intersections along SR 103.
 - o Consider bike lanes, bike path and/or sidewalk along SR 103.
 - o Possibly lower the SR 103 profile for increased sight distance along the corridor.
 - o Determine the need for flashing lights and gates at the SR 103 railroad crossing.
 - o Review and recommend proper signage and pavement markings.

Feedback Requested

- A Public Involvement Meeting has been scheduled for Tuesday, September 13, 2016 from 6:00PM to 8:00PM at the Town Hall, 3rd Floor Community Room
- With any project, the Village is interested in receiving your feedback on this project. Comment forms will be provided at the meeting or can be provided upon request.

We sincerely appreciate your feedback concerning this worthwhile project. If you have any questions please contact either Jesse Blackburn or Craig Eley. Their contact information is below.

Jesse Blackburn Village of Bluffton 154 N. Main Street Bluffton, OH 45817 (419) 358-2066 Craig Eley, P.E. Choice One Engineering 440 E. Hoewisher Rd Sidney, OH 45365 (937) 497-0200

Respectfully,

James R. Mehaffie Village Administrator

625 625	NO. 10 AWG POLE AND BRACKET CABLE CONDUIT, 1-1/2", 725.051	FT. FT.	8700 8600	\$2.25 \$12.00	\$19,575.0 \$103,200.0
625	PULL BOX, 725.06, 13"X24"	EACH	10	\$800.00	\$8,000.0
625	GROUND ROD	EACH	58	\$175.00	\$10,150.0
625 630	POWER SERVICE	EACH	1	\$2,000.00	\$2,000.0
630	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL REMOVAL OF GROUND MOUNTED POST AND DISPOSAL	EACH EACH	60 64	\$30.00 \$30.00	\$1,800.0 \$1,920.0
	STREET NAME SIGN SUPPORT, NO. 3 POST	FT.	90	\$15.00	\$1,350.0
630	GROUND MOUNTED SUPPORT, NO. 3 POST	FT.	700	\$10.00	\$7,000.0
630	SIGN, FLAT SHEET	EACH	540	\$18.00	\$9,720.0
630 638	SIGN DOUBLE FACED, STREET NAME 10" PVC C-900 DR-18 WATER MAIN	EACH FT.	12	\$175.00	\$2,100.0
638	10" X 10" TAPPING SLEEVE AND VALVE	EACH	3175 3	\$65.00 \$4,500.00	\$206,375.0 \$13,500.0
638	10" GATE VALVE	EACH	12	\$2,600.00	\$31,200.0
638	3/4" PVC SDR-9 WATER SERVICE BRANCHES	FT.	1090	\$60.00	\$65,400.0
638	FIRE HYDRANT EXTENDED AND ADJUSTED TO GRADE	EACH	4	\$2,000.00	\$8,000.0
638 638	FIRE HYDRANT REMOVED 6" FIRE HYDRANT ASSEMBLY	EACH EACH	9	\$500.00	\$4,500.0
638	SERVICE BOX ADJUSTED TO GRADE	EACH	8	\$5,500.00 \$350.00	\$49,500.0 \$2,800.0
638	VALVE BOX ADJUSTED TO GRADE	EACH	5	\$400.00	\$2,000.0
638	METER, SETTING, STOP AND CHAMBER	EACH	32	\$1,400.00	\$44,800.0
644	CENTER LINE STOP LINE	MILE	1.56	\$6,000.00	\$9,360.0
644	CROSSWALK LINE	FT. FT.	150 1417	\$8,00 \$3.50	\$1,200.0
644	CHANNELIZING LINE, 8"	FT.	1146	\$1.50	\$4,959.5 \$1,719.0
644	PARKING LOT STALL MARKING	FT.	200	\$2.50	\$500.0
	LANE ARROW	EACH	35	\$120.00	\$4,200.0
653 659	TOPSOIL FURNISHED AND PLACED TOPSOIL	C.Y. C.Y.	120 1589	\$35.00	\$4,200.0
659	SEEDING AND MULCHING	S.Y.	14314	\$25.00 \$1.50	\$39,725.0 \$21,471.0
659	REPAIR SEEDING AND MULCHING	S.Y.	716	\$2.00	\$1,432.0
659	INTERSEEDING	S.Y.	716	\$1.00	\$716.0
659	COMMERCIAL FERTILIZER WATER	TON	1.35	\$550.00	\$742.5
659	SPECIAL - MAILBOX SUPPORT SYSTEM, SINGLE	M. GAL. EACH	77 12	\$1.50 \$150.00	\$115.5 \$1,800.0
690	SPECIAL - MAILBOX SUPPORT SYSTEM, DOUBLE	EACH	12	\$250.00	\$3,000.0
690	SPECIAL - BOLLARD	EACH	8	\$350.00	\$2,800.0
690	SPECIAL - WORK INVOLVING SOLID WASTE	TON	5000	\$25.00	\$125,000.0
690 832	SPECIAL - COMMERCIAL SIGN REMOVED AND RELOCATED STORM WATER POLLUTION PREVENTION PLAN	EACH LUMP	5 1	\$5,000.00	\$25,000.0
832	EROSION CONTROL	EACH	30000	\$8,500.00 \$1.00	\$8,500.0 \$30,000.0
861	GEOGRID FOR SUBGRADE STABILIZATION	S.Y.	8135	\$2.50	\$20,337.5
895	MANUFACTURED WATER QUALITY STRUCTURE	EACH	1	\$19,000.00	\$19,000.0
SPEC	RAILROAD CROSSING SIGNAL CONSTRUCTION SUBTOTAL	LUMP	1	\$315,000.00	\$315,000.0
	CONTIGENCY - 10%				\$5,733,837.0 \$573,384.0
	INFLATION FROM 2017 TO JUNE 2022 - INFLATION 21.4%				\$1,349,745.0
	CONSTRUCTION TOTAL				\$7,656,966.00
-	RIGHT-OF-WAY ACQUISITION	PARCEL	47	\$6,150.00	\$280.050.0
	RIGHT-OF-WAY	PARCEL	47	\$5,000.00	\$289,050.0 \$235,000.0
	ACQUISITION OF HOMES	EACH	2	\$200,000.00	\$400,000.0
	RIGHT-OF-WAY SUBTOTAL				\$924,050.0
	CONTINGENCY - 10% INFLATION FROM 2017 TO JUNE 2022 - INFLATION 21,4%				\$92,405.0
	RIGHT-OF-WAY TOTAL			-	\$217,521.00
	MGIII-01-WAI IOIAL				\$1,233,976.00
	POWER POLE RELOCATIONS	EACH	15	\$15,000.00	\$225,000.0
	UTILITY RELOCATION SUBTOTAL CONTINGENCY - 10%				\$225,000.0 \$22,500.0
	INFLATION FROM 2017 TO JUNE 2022 - INFLATION 21.4%				\$52,965.00
	RIGHT-OF-WAY TOTAL				\$300,465.00
200	CONSTRUCTION ENGINEERING - 7% OF CONSTRUCTION TOTAL		11 - 200- W		\$534,000,0
	ENVIRONMENTAL ENGINEERING				\$536,000.00 \$80,000.00



We make no warranty, express or implied, that the actual construction cost of the work associated with these estimated quantities and costs will not vary. The cost reflects our opinion of current probable construction cost.

JEFFERSON STREET (SR 103) IMPROVEMENTS VILLAGE OF BLUFFTON, OHIO

PRELIMINARY CONSTRUCTION ESTIMATE

November 22 2016 ITEM UNIT OF APPROX UNIT NO. DESCRIPTION MEASURE PRICE TOTAL PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT LUMP \$50,000,00 \$50,000.00 SPECIAL - CPM PROGRESS SCHEDULE LUMP \$6,000.00 108 \$6,000.00 CLEARING AND GRUBBING. AS PER PLAN LUMP \$8,000.00 \$8,000,00 201 RAILROAD CROSSING REMOVED LUMF \$20,000.00 \$20,000.00 202 CONCRETE BASE REMOVED 1553 \$10.00 202 S.Y. \$15,530.00 202 WALK REMOVED S.F. 2327 \$5.00 \$11,635.00 202 STEPS REMOVED FT. \$10.00 \$400.00 202 **CURB REMOVED** FT 301 \$6.00 \$1,806.00 CURB AND GUTTER REMOVED S.F 917 \$6.00 \$5,502.00 FT. \$8.00 \$58,760.00 202 PIPE REMOVED 7345 GUARDRAIL REMOVED \$15.00 FT 467 \$7,005.00 ANCHOR ASSEMBLY REMOVED EACH 4 \$250.00 \$1,000.00 202 SPECIAL - PARKING BLOCK REMOVED EACH 2 \$150.00 \$300.00 202 202 MAILBOX REMOVED EACH 24 \$200.00 \$4,800.00 202 BUILDING DEMOLISHED EACH 2 \$50,000,00 \$100,000.00 11 202 MANHOLE REMOVED EACH \$650.00 \$7,150.00 CATCH BASIN REMOVED EACH \$350.00 202 19 \$6,650.00 METER VAULT REMOVED EACH 30 \$300.00 \$9,000.00 202 EACH \$225.00 VALVE BOX REMOVED 16 \$3,600.00 202 REMOVAL MISC.: RETAINING WALL REMOVED 390 \$15.00 202 S.F. \$5,850,00 REMOVAL MISC .: POST REMOVED EACH \$150.00 202 16 \$2,400.00 REMOVAL MISC.: OVERHEAD FLASHER REMOVED LUMP \$2,000.00 202 \$2,000.00 203 **EXCAVATION** C.Y. 26240 \$13.00 \$341,120.00 C.Y. 203 **EMBANKMENT** 3000 \$15.00 \$45,000.00 SUBGRADE COMPACTION S.Y. 32541 \$1.00 \$32.541.00 C.Y. \$40.00 \$110,680.00 EXCAVATION OF SUBGRADE 2767 PROOF ROLLING HOUR \$100.00 204 \$1,600.00 1-1/2"± PAVEMENT PLANING, ASPHALT CONCRETE S.Y. 533 \$8.00 \$4,264.00 301 ASPHALT CONCRETE BASE, PG64-22 C.Y. 3060 \$135.00 \$413,100.00 304 AGGREGATE BASE CY 8008 \$35.00 \$280,280.00 407 TACK COAT GAL 2711 \$2.50 \$6,777.50 410 TRAFFIC COMPACTED SURFACE, TYPE A OR B C.Y. 750 \$35.00 \$26,250.00 CY 411 STABILIZED CRUSHED AGGREGATE 437 \$45 00 \$19,665.00 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) \$160.00 441 C.Y. 1283 \$205,280.00 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG70-22M CY \$170.00 441 935 \$158 950 00 9" NON-REINFORCED CONCRETE PAVEMENT 2872 \$60.00 S.Y. 452 \$172,320.00 COFFERDAMS AND EXCAVATION BRACING LUMP \$5,000.00 \$5,000.00 503 UNCLASSIFIED EXCAVATION LUMP \$5,000.00 \$5,000.00 503 EPOXY COATED REINFORCING STEEL LBS. 3000 509 \$2.25 \$6,750.00 CLASS QC CONCRETE, FOOTINGS C.Y 30 \$520.00 \$15,600.00 511 C.Y. CLASS QC CONCRETE, WINGWALLS 20 \$600.00 \$12,000.00 511 512 SEALING OF CONCRETE SURFACES, EPOXY URETHANE USE S.Y 50 \$30.00 \$1,500.00 ROCK CHANNEL PROTECTION C.Y 44 \$80.00 \$3,520.00 602 CONCRETE MASONRY C.Y. 3 \$2,500.00 \$7,500.00 4" SHALLOW PIPE UNDERDRAINS FT. 9777 \$9.00 \$87,993.00 GUARDRAIL, TYPE MGS FT. 417 \$32.00 \$13,344.00 606 ANCHOR ASSEMBLY, MGS, TYPE E EACH \$2,500.00 \$5,000.00 606 608 4" CONCRETE WALK S.F. 19200 \$6.00 \$115,200.00 608 CURB RAMP S.F. 2200 \$13.00 \$28,600.00 608 CONCRETE STEPS FT 40 \$100.00 \$4,000.00 COMBINATION CURB AND GUTTER, TYPE 2 FT 9777 609 \$22.00 \$215,094.00 FT 609 TYPE 6 BARRIER CURB 135 \$25 00 \$3 375 00 MODULAR RETAINING WALL S.F. \$50.00 610 780 \$39,000.00 FT \$22.00 4" STORM SEWER 200 \$4 400 00 611 6" STORM SEWER 200 \$25.00 611 FT \$5,000.00 8" STORM SEWER FT. \$28.00 611 200 \$5,600.00 10" STORM SEWER FT. 200 \$30.00 611 \$6,000.00 12" STORM SEWER FT 2383 \$55.00 \$131,065.00 611 611 15" STORM SEWER FT \$70.00 \$28,070.00 18" STORM SEWER FT 1089 \$75.00 \$81,675.00 611 \$105.00 611 24" STORM SEWER FT 1036 \$108,780.00 30" STORM SEWER \$120.00 611 FT 1191 \$142,920.00 36" STORM SEWER FT \$140.00 319 \$44,660.00 60" STORM SEWER FT. \$300.00 32 \$9,600.00 CONDUIT, MISC.: STORM SEWER LATERALS FT 850 \$30.00 \$25,500.00 611 CATCH BASIN, NO. 2-2B EACH 18 \$1,250,00 \$22,500.00 611 CATCH BASIN, MISC.: TYPE 1 EACH 54 \$2,000.00 \$108,000.00 611 611 CATCH BASIN, MISC.: TYPE 1A **EACH** 8 \$2,800.00 \$22,400.00 35 611 STORM SEWER MANHOLE, NO. 3 EACH \$3,500.00 \$122,500.00 SANITARY MANHOLE RECONSTRUCTED TO GRADE 611 EACH 12 \$1,500.00 \$18,000.00 611 CATCH BASIN, MISC.: TYPE 2 YARD DRAIN EACH 4 \$800.00 \$3,200.00 37 CLEANOUT ADJUSTED TO GRADE EACH \$300.00 611 \$11,100.00 MAINTAINING TRAFFIC LUMP \$350,000.00 614 1 \$350,000.00 LUMP \$8,000.00 DETOUR SIGNING 1 \$8,000.00 614 MONTH \$1,000.00 FIELD OFFICE, TYPE B 619 16 \$16,000.00 EACH \$1,000.00 MONUMENT ASSEMBLY 6 \$6,000.00 623 CONSTRUCTION LAYOUT STAKES AND SURVEYING LUMP \$30,000.00 \$30,000.00 623 MOBILIZATION 624 LUMP \$110,000.00 \$110,000.00 CONNECTION, FUSED PULL APART EACH 116 \$100.00 625 \$11,600.00 \$100.00 625 CONNECTION, UNFUSED BOLTED EACH 58 \$5,800.00 29 CONNECTOR KIT **EACH** \$100.00 \$2,900.00 LIGHT POLE, DECORATIVE 58 \$3,000.00 625 EACH \$174,000.00