



AGENDA
CITY OF AUGUSTA
Council Work Session
February 11, 2019
6:00 P.M.

“Augusta – Where the metro’s edge meets the prairie’s serenity offering the perfect blend of opportunity and proximity for living, commerce and culture.”

A. CALL TO ORDER

B. BUSINESS

1. NORTH OHIO STREET TRAFFIC STUDY AND CORRIDOR CONCEPTS

Review and discuss north Ohio Street Traffic Study and evaluate options for corridor improvements. Provide general guidance to staff regarding preferred direction to start preparing engineering agreements for design and construction to be approved at future Council meetings.

- a) Staff Report
- b) Council Discussion/Direction**

C. ADJOURNMENT



CITY OF AUGUSTA COUNCIL WORK SESSION AGENDA REPORT

Meeting Date: February 11, 2019
 Department: Public Works
 Submitted By: Josh Shaw, City Manager
 Prepared By: Josh Shaw, City Manager
 Agenda Title: **North Ohio Street Traffic Study and Corridor Concepts**

RECOMMENDED ACTION:

Review and discuss north Ohio Street Traffic Study and evaluate options for corridor improvements. Provide general guidance to staff regarding preferred direction to start preparing engineering agreements for design and construction to be approved at future Council meetings.

BACKGROUND:

The 2018 Budget included funding for maintenance work to be completed on Ohio Street north of David Ave. After receiving highly competitive bid pricing for the 2017 street sales tax package, which freed up resources for additional street projects, Council inquired if now was the time to reevaluate and consider upgrades to the entire north Ohio Street corridor. Council contracted with City Engineer Schwab Eaton to complete a study and make recommendations regarding the North Ohio corridor and whether additional traffic lanes and/or turn lanes were merited. Staff presented a summary of the study results to the Council at the January 21, 2019 meeting. Council then scheduled a work session for February 11, 2019 to examine the issue in greater detail and review the potential paths for construction.

ANALYSIS:

Below is a listing of key observations/highlights from the traffic study conducted by Schwab Eaton:

- Traffic Counts taken at 4 locations during regular weekdays while school was in session
- Daily volumes range from 9,469 vehicles per day (VPD) north of Belmont to 6,460 vpd north of Woodland Drive (1.5% of daily volumes were truck traffic, or approximately 97-142 trucks)
- Daily volumes fall within acceptable limits for two-lane roads; however, a center turn lane is proposed to mitigate rear-end accidents from vehicles stopping in thru lanes
- Seek opportunities to close existing access points to minimize T-intersections; only current location where this could easily be done would be the Shryock Park entrance, which can be aligned into a traditional 4-way intersection at Smiles

- Do not install curb & gutter and maintain existing ditches
- Long term, consider extending Custer Lane north to David/Arnold to better distribute traffic volumes and provide a north-south reliever

Staff met with Schwab Eaton to review the study results on January 10th. After studying the recommendations, staff asked Schwab to prepare multiple cost estimates for corridor improvements ranging in scope from maintenance to the existing 2-lane roadway to a full 3-lane corridor buildout with a center turn lane. In response, Schwab prepared four cost estimates for Council consideration as briefly described below:

1. **Maintenance Project (\$1,384,240)** – 2-lane reconstruction of failed roadways north of David combined with mill and overlay surface maintenance between Belmont and David (includes 150’ on Belmont east of Ohio St. intersection); relocate Shryock Park entrance
2. **3-Lane Corridor Full Buildout (\$2,373,020)** – full reconstruction as 3-lane roadway (center turn lane) from Belmont to North City limits
3. **3-Lane Corridor Partial with Maintenance (\$1,846,195)**– add 3rd lane between Belmont and North city limits; mill and overlay on existing 2 lanes with minimal work to drives and side streets
4. **3-Lane Corridor Short Increment (\$1,405,651)**– Reconstruct area north of Taylor Ave. as 3-lane roadway with center turn lane; no maintenance work proposed between Belmont and Taylor

FISCAL IMPACT/FUNDING SOURCE:

Current Street Sales Tax Package Financing Strategy:

As Council will recall, staff detailed a new financing strategy for street maintenance projects in 2017 that shifted from single year programs utilizing cash to 3-year package programs utilizing short term temporary notes as shown in the graphic below.

The proposed financing strategy is outlined in the table below:									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
*	Street Sales Tax Pkg. #1								
			*	Street Sales Tax Pkg. #2					
						*	Street Sales Tax Pkg. #3		

***Temporary Note Bond Issue Year – Streets**

The temporary note packages are roughly \$1.5 million in size, which allows the City to do bigger projects and take advantage of unit pricing and minimize mobilization costs. The City makes annual debt payments on the notes for three years in the amount of approximately \$500,000 utilizing revenues generated by the local 1% sales tax. Under this strategy, in the third and final year of the first package (2020), the City would issue a new 3-year temporary note with

Possible Street Sales Tax Package Financing Strategy No. 2 – Combine 2019 and 2020 in single temp note package in 2019

Another alternative that would reduce cost of issuance ensure that your construction dollars stretch further would be to combine the separate temporary note issuances from 2019 and 2010 described in the previous option into a single, larger issuance in 2019. In essence, you advance the start date of Street Sales Tax Package #2 to 2019 instead of 2020 but schedule your payments to start in 2021.

The proposed financing strategy is outlined in the table below:

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
*	Street Sales Tax Pkg. #1								
		*		Street Sales Tax Pkg. #2					
						*	Street Sales Tax Pkg. #3		

This strategy is most advantageous from a cost perspective because you only pay our financial consultants for one temporary note issue instead of two; furthermore, from a construction perspective, combining the smaller street package from 2020 with the big north Ohio Street package of 2019 would likely result in lower mobilization costs and better unit pricing because the size of the project is much larger and will likely attract very competitive bids in a similar manner to the 2017 package. The disadvantage to this strategy is that we would need the street sales tax committee to gather quickly to help decide on the other streets to be included so that engineering design could be completed in a timely manner. There is a very real possibility that construction cannot be initiated this summer if we take an additional 2 months to decide on what other roadways to include in the package. This could be mitigated somewhat if Schwab Eaton were placed under contract to begin engineering design on the more complex north Ohio Street project now while the committee finalizes their recommendations for the maintenance projects. You would likely still see some delay (perhaps 1-2 months in the bidding process), but this strategy would at least make it possible to complete all of the projects in the 2019 calendar year.

Department Head Approval Date:

City Manager Approval Date: 2/8/2019

City Attorney Approval Date:

Attachments (list in packet assembly order):

1. Traffic Flow Option: Relocate Shryock Park Entrance Analysis
2. Ohio Street Traffic Analysis Update – January 2019
3. Engineering Cost Estimates (4)
4. Aerial Imagery – Proposed Mill and Overlay / Reconstruction Layout

ATTACHMENT 1:***Additional Traffic Flow Options: Relocate Shryock Park Entrance***

The Shryock Park entrance is the only drive entrance along the corridor completely within the City's authority and control to easily move to create a traditional 4-way intersection as recommended in the traffic study conducted by Schwab Eaton. Staff was asked to evaluate the pros and cons for such a move. A brief evaluation is provided below; however, the pros and cons are not weighted in value in any particular way.

Pros	Cons
Proximity of traffic signal for pedestrian crossing to multiple unaligned intersections adds complexity to turning movements – complexity increases opportunities for collisions.	May not be a representative sample, but majority of respondents (56%) to Facebook poll did not believe that aligning entrance would improve safety or traffic flow.
Creates additional separation distance between intersections – currently three intersections within 450 feet of each other.	True 4-way alignment will likely require an electric pole on a major line to be relocated – cost not factored into estimate.
May dilute traffic from park users (i.e. fisherman with boats) not going to splash pad or playground – less vehicle traffic around active play areas with children because they turn left instead of cutting through parking lot.	Additional cost of installation for entrance alone is estimated at \$20,000. Could this \$20,000 be used on something more valuable, or not spent at all?
Cost to move as part of larger project would be cheaper than as a standalone project because of mobilization and unit pricing.	Some improvements recently made at current entrance – are we spending money twice after we just worked in that vicinity (Facebook)
If additional residential development occurs in future (e.g. high density apartments) in adjacent land (SE corner of David & Ohio), aligned intersection could alleviate turning movements and congestion around park entrance from any cars moving across Ohio from east to west.	Creation of 4-way intersection alignment may not impact traffic flow/safety significantly since most cars do not actually cross Ohio Street, but rather turn onto or off of Ohio Street

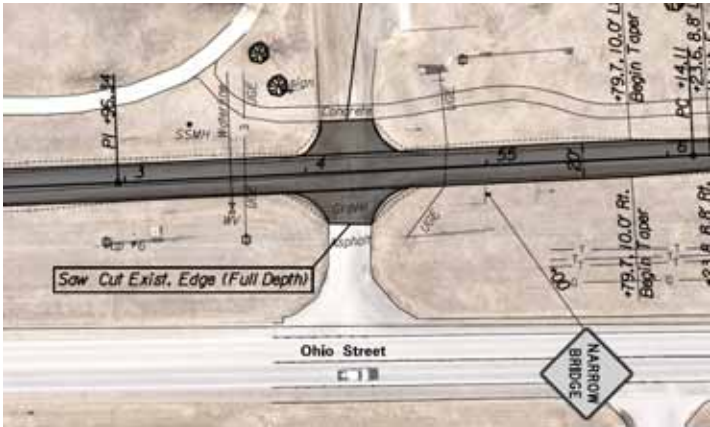
Current Shryock Park Intersection Alignment



Possible New Shryock Park Intersection Alignment



City Lake Road Project 2018



Comments on Facebook indicated a concern about spending money moving an entrance that we just spent money to construct. To the left is the engineering construction plan for the City Lake Road Project. As you can see, the asphalt drive entrance was existing and not reconstructed as part of that project. The new road (dark gray) was simply blended with the existing entrance.

Current Shryock Park Entrance (No Alignment)



Proposed Shryock Park Entrance (Realignment to create single intersection at Smiles)



Ohio Street, in Augusta, from Belmont Avenue north to the City limit, is a two-lane asphalt road with open ditches on either side. The road acts as a major collector, with numerous connections with local roads and private entrances, but also has some characteristics of an arterial road and serves as the main entrance into town for traffic from the north. Throughout the corridor, street and entrance connections have been made on the east and west sides of Ohio which do not line up with access points on the opposite side of the road. There are 19 access points on the east side of Ohio, and 10 accesses on the west side between Belmont Ave. and the north City limit. None of these access points line up with opposing entrances on the opposite side of Ohio. This creates the potential for opposing left turn movements to conflict with each other; as a northbound vehicle waits for an opening in traffic so it can turn left, it causes the traffic behind it to queue up. That queued traffic can block a southbound vehicle that also wants to turn left, “locking” the intersection and causing delays and safety concerns. Traffic volumes along the corridor have increased with the newer residential developments east of Ohio all funneling traffic directly to Ohio Street. Schwab Eaton (SE) was hired by the City of Augusta to evaluate Ohio Street from Belmont to the north City limit and provide concepts and recommendations for improvements to the roadway.

Crash History:

Crash history along the corridor is an important indicator of safety concerns. SE obtained crash reports dating back to the year 2014, and a summary table is attached to this report. Overall, there were 34 reported accidents on Ohio Street between Belmont Ave. and the north City limit from January of 2014 to April of 2018. None of these accidents resulted in fatalities, but seven resulted in injuries. Estimated damages ranged from \$100 to \$17,000. The most common crash type was the rear-end collision, where someone had stopped or slowed to make a turn and they were hit from behind. 20 of the crashes reported in this time frame were rear-end. Another 4 accidents were reported as “Angle-side impact” or “Sideswipe-same direction”, but the descriptions in the police report indicated that they were the result of turning vehicles that slowed to wait for a gap in opposing traffic. This means that 24 of these 34 crashes (70%) were of a type that could be mitigated by the addition of turning lanes.

Existing Traffic Volumes:

As part of the Concept Study for Ohio Street from Belmont Avenue to the north City limits, SE performed 24-hour traffic counts at 4 locations; north of Woodland Drive, north and south of David Drive, and north of Belmont Avenue. The counts were not taken on the same day but were taken during a typical week on either a Tuesday, Wednesday or Thursday to avoid unusual holiday or weekend traffic.

Daily volumes ranged from 9,469 vehicles per day (vpd) just north of Belmont to 6,460 vpd north of Woodland Drive. Truck volumes averaged about 1.5% of the daily volumes. Directionally, the traffic was split nearly 50% northbound and 50% southbound during the whole 24-hour period. Peak hour volumes typically occurred from 7 to 8 AM, and 5 to 6 PM, however the northbound PM peak hour between

Belmont and David Dr. occurred from 3 to 4 PM, likely due to the high school and Ewalt Elementary School traffic. The PM peak hour volumes were typically slightly higher than the AM peak hour and ranged from 10% to 11% of the daily volumes. While high, these daily volumes are within the acceptable limits of volumes for a two-lane road. Exhibit 16-14 of the Highway Capacity Manual (2010), titled “Generalized Daily Service Volumes for Urban Street Facilities”, shows a range of volumes for different Levels of Service (LOS). Using the characteristics of Ohio Street, and interpolating for the speed of 40 mph south of David Dr., we see that the existing traffic volumes indicate that the two-lane Ohio Street is operating at LOS D just north of Belmont Avenue. Traffic volumes at the other sampled locations are at the high end of the threshold for LOS C. Additional growth in the near future will push all of Ohio Street into LOS D if it remains a two-lane facility. LOS D is a common goal for urban streets during peak hours, as maintaining LOS C is often considered cost prohibitive. While the Highway Capacity Manual does not address 3-lane streets, the Manhattan Area Transportation Strategy (2000), indicates in Table 4-2 that the transition from a 2-lane street to a 3-lane street increases service volume by 25% without reducing the LOS of the road section.

Traffic speeds at each sampled location were slightly greater than the posted speed limit. The 85th percentile speed is generally used to set or evaluate appropriate speeds for a facility. This is the speed at, or below which, 85% of traffic is traveling. North of Woodland the 85th percentile speed of the vehicles was roughly 5 mph higher than the posted speed of 45 mph while north of Belmont the 85th percentile speed of the vehicles was relatively equal to the posted speed of 40 mph

Intersection Turning Movement Counts:

SE also performed peak hour turning movement counts at 4 of the intersections within the corridor; the intersections of Ohio & Arnold Dr., Ohio & David Dr., Ohio & Smiles Ave., and Ohio & Lakepoint Dr. With these turning movement counts, SE used Synchro software to evaluate these locations as stop-controlled intersections and determine the level of service and delay at each approach. Each of these intersections is functioning well with current traffic volumes. The north and south approaches (Ohio Street) are operating at LOS A, while the west approach at each intersection is operating at LOS C, with between 14 and 18.8 seconds of average approach delay, depending on the peak hour and intersection that is evaluated. The Intersection Capacity Utilization LOS is “A” for each location.

Projected Future Conditions:

While the intersections are functioning well currently, SE also evaluated the future conditions assuming a 2% annual growth rate. Since most newly built roadways are expected to have a minimum life cycle of 20 years, and under the assumption that any new construction would not be complete until 2020, we projected the existing traffic volumes forward to the year 2040. This results in the daily traffic projected on Ohio to increase to nearly 14,650 north of Belmont and 10,000 north of Woodland. This increases the turning movements by roughly 50% at each leg of an intersection. Each of the intersections evaluated would still operate at an overall LOS of “A”, with minimal delay on the north and southbound legs of Ohio Street. Unfortunately, with the added traffic on Ohio, the intersecting road approaches have excessive delay. Each of the stop-controlled approaches in the future year of 2040, was functioning at LOS E during

the peak hour, with over 40 seconds of average delay for vehicles turning onto Ohio. This is a function of limited opportunities for left turning cars to find a large enough gap in the Ohio Street traffic. We tried adding a second lane to the westbound approaches, and this allowed right turning movements onto Ohio to operate at LOS B, but the left turn movements would still be at LOS E. While LOS E is considered acceptable in many larger urban areas during peak hours, it is likely that local drivers would consider delays of 40 seconds at a stop sign unacceptable.

One way to avoid these future delays for traffic turning onto Ohio Street is to implement some form of traffic control (stop signs, signals, or roundabouts) on Ohio Street. Unfortunately, this would disrupt the free-flow of Ohio and reduce the Level of Service for the northbound and southbound through traffic. Roundabouts would be a possibility, but would require additional right-of-way, which is not available without significant impacts to existing private property. Another solution would be to make certain that additional traffic from future growth in the areas east of Ohio Street has another north-to-south collector street available to divert traffic to the David Drive and Belmont Avenue collectors. This option would maintain the existing turning volumes from each intersecting road onto Ohio into the year 2040, while directing new traffic from additional growth to major intersections which can implement signalized control.

Existing Pavement Section and Drainage

The existing pavement section is mainly a Rural Section consisting of two driving lanes, shoulders and open ditches. There is one section, between Lakeside and Woodland Drive, that has curb and gutter on the west side. This section of roadway is 3-lanes (two south bound, one north bound) and is off-set from the section line.

The existing storm sewer system consists of culverts under drives and side roads that drain into the ditches. Most of the ditches are grass lined, except between south of Lakepoint Drive, towards First United Methodist Church. The ditch bottom on the east side at this location has a concrete lining that turns and extends east along the north property line of the church. The ditches along Ohio Street drain to and through RCB (reinforced concrete box) or oval/elliptical pipe structures that pass under Ohio Street. There are four (4) major structures and one (1) minor (small diameter pipe). Each of these structures have waterways that lead directly to Augusta Lake. The four major structures are located just south of Lakepoint Drive, north of Lakewood Court, north of David Avenue and north of Country Hill Drive. The minor crossing is north of Woodland Drive.

The existing system is one of the simplest storm sewer designs. It allows the upstream drainage areas to flow towards the ditches without any required drainage structures. The maintenance is mainly of mowing and cleaning the ditches. Periodically, the culverts will need to be cleaned out and the end sections touched up with some minor grading.

With the proposed new paving of Ohio Street, the only major issue with the Rural Section would be to extend the existing RCB's and pipes that cross under Ohio Street. This is related to the new pavement

width and potential sidewalk extension (discussed under 'Sidewalk'). Once engineering design starts, some of these boxes may require repair.

To use the Urban Section with curb and gutter and storm sewer system section would not be as feasible.

Where the open ditches allow drainage to enter throughout the length of the ditch, a storm sewer system would require the lowering of the roadway surface to allow the right-of-way drainage to pass over the curb and gutter and into curb inlets. This system then puts most of the run-off on the pavement for cars to encounter. If the roadway is lowered, then the utilities crossing Ohio Street may require lowering and relocation for both the roadway and the storm sewer. A benefit of the urban section would be that the storm sewer system would replace the open ditch in certain areas, allowing easier maintenance of the right-of-way in these areas. Open ditches will remain at crossroad structures as required to accommodate drainage. Where the curb and gutter section passes an open ditch, this area might require flumes to be installed in the curb and gutter to act as inlets and let the run-off enter the ditches.

Sidewalk

There are only two (2) areas that have existing sidewalk. The first starts at Belmont, going north to the south side of Limerick Lane. This walk is on the west side of Ohio, is approximately 4 ft wide and is next to the adjacent property line. It also passes around the traffic light and supporting boxes on two different sides at the northwest (NW) corner of Belmont and Ohio.

The other area where sidewalk is present is the walk leaving Shryock Park. It has a crosswalk on Ohio, just north of Cottonwood Drive. This sidewalk then heads north to David Avenue, where it ties into the existing sidewalk on the south side of David. This section of sidewalk is relatively new (last couple of years) and is 8 ft. wide.

The other sidewalk within the vicinity is the walk along Lake Road and around Shryock Park. It is an 8ft. wide concrete walk that is part of the walk system that crosses Ohio with the crosswalk. The remainder of Ohio and the side roads do not have any type of pedestrian paths/sidewalks. Also, the neighborhoods adjacent to Ohio do not have sidewalk.

Conclusions:

Several things became apparent after review of the field counts, crash reports, and analysis of the intersections and corridor.

- 1) There is no defined access management policy enforced on Ohio Street, Belmont Ave. or David Drive. Neither access spacing, nor access consolidation has been implemented.
- 2) There are 29 access points onto Ohio Street between Belmont and the north City limit. 19 of these are westbound approaches to Ohio, and all of them form "T" intersections with Ohio.
- 3) Existing traffic speed (85th percentile) is slightly above the posted speed at all sampled locations.

- 4) Average delays for vehicles turning onto Ohio is currently under 20 seconds but we expect the delays to increase as traffic volumes increase, ultimately exceeding 40 seconds 20-plus years into the future.
- 5) Right turns at each of the analyzed intersections do not meet KDOT's typical warrants for a separate right-turn lane, based on the KDOT Access Management Policy, table 4-25.
- 6) The Ohio Street intersections with Lakepoint Dr., Smiles Ave., David Dr., and Arnold Drive all met the KDOT warrants for left turn lanes, based on the KDOT Access Management Policy, table 4-27.
- 7) Traffic signals are not currently warranted at any of the analyzed intersections.
- 8) Roundabouts, although potentially reducing the delays on the side streets, would introduce delays to through traffic on Ohio. Additionally, with an inscribed circle in the range of 150' to 180' there would be significant impacts to adjacent development as well as existing drainage structures.
- 9) 70% of the reported crashes since 2014 were of a type that involved traffic slowing or stopping in a through lane to make a turn.
- 10) Based on Highway Capacity Manual thresholds, the current LOS for Ohio Street as a two-lane facility is LOS D between Belmont and David Dr., and LOS C north of David Dr. Future volumes in the year 2040, assuming 2% growth, will push the entire corridor into LOS D, as a two-lane road. A 3-lane section would provide up to 25% more service capacity than a 2-lane section.
- 11) The four evaluated intersections are all functioning at LOS A under current traffic volumes. The northbound and southbound approaches (Ohio Street) operate at LOS A, with no stop-control and limited delay due to left turning vehicles. The westbound approaches have a stop sign and currently operate at LOS C with less than 19 seconds average delay. Future volumes in the year 2040 will cause the westbound approach at each of these intersections to reach LOS E.

Recommendations:

Given the results of the future conditions analysis, we have the following recommendations;

- 1) Due to the high number of potential left turn conflicts, the crash history and type of collision most common in the corridor, and the fact that the left turn lane warrant was met at each analyzed intersection, we recommend adding a two-way center left turn lane throughout the Ohio Street corridor, from Belmont to the north City limit. This would slightly increase the capacity of the roadway, but more importantly, it would provide for left-turning movements that do not impede through traffic. Given the number and proximity of access points, it is not feasible to simply add left turn lanes at intersections, as the tapers and storage lengths of each turn lane would extend beyond the next nearest intersection.
- 2) The City of Augusta should implement an access management policy, limiting access onto collector streets and defining a minimum spacing for access points. This policy should also prioritize the alignment of access points on opposite sides of the collector. Finally, the City should seek opportunities to close existing access points onto Ohio Street when possible.

- 3) As further growth occurs east of Ohio Street, the City should require additional north-south roadways to direct traffic south to David Drive and Belmont Avenue. Specifically, the City should consider a north-south collector roughly one-half mile east of Ohio, aligning with Custer Lane on the south side of Belmont and connecting with Arnold Drive at the north end near the water tower. This would provide an alternate route for both existing traffic and future growth, thereby reducing the future left-turning volumes at each intersection with Ohio.
- 4) The intersection of Ohio Street and David Drive should be analyzed every 3 to 5 years to determine whether it meets warrants for a traffic signal. Currently, the intersection does not meet warrants, and the projected future traffic in the year 2040 falls just short of meeting the peak hour warrant for a signal. However, if additional growth to the east directs more traffic onto David Drive, it is possible that the westbound traffic along David Dr. will at some point exceed the peak hour warrant threshold for installation of a traffic signal.
- 5) It is recommended that a Rural Section with open ditch drainage system should be maintained with any new road widening. The Rural Section has a lower construction cost than an Urban Section.
- 6) A new sidewalk should be installed from the intersection of Belmont and Ohio, north to the existing Augusta Lake walk. This new sidewalk would be an 8 ft. wide concrete walk starting at the northwest corner of Belmont and Ohio, go north and connect to Limerick. It would continue northward from Limerick, on the west side of Ohio where it would pass over the RCB that would need to be extended, and then connect to the existing 8 ft. concrete sidewalk along Augusta Lake. This walk is based on the interest the City showed before on expanding pedestrian access in this area.

These improvements and policies can help improve both the traffic flow along the Ohio Street corridor and the safety of turning vehicles.

CITY OF AUGUSTA
 NORTH OHIO - BELMONT AVENUE NORTH TO CITY LIMITS

Engineer: Schwab-Eaton, PA
 Augusta, Kansas
 Project Length: 6,500 lineal feet (1.23 miles)

REVISED
 Updated 1/15/2019

2-LANE ROADWAY w/relocated Park Entrance

Item No.	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Cost
1	Cleaning of Existing Structures	1	LS	\$5,000.00	\$5,000.00
2	Site Clearing and Restoration	1	LS	\$20,000.00	\$20,000.00
3	Pavement Removal	16,000	SY	\$8.00	\$128,000.00
4	Excavation - Dirt	4,000	CY	\$7.00	\$28,000.00
5	Asphaltic Concrete Pavement (7")	11,025	SY	\$30.00	\$330,750.00
6	Modified Subgrade (10")	11,600	SY	\$13.00	\$150,800.00
7	Concrete Pavement / Valley Gutter (8")	0	SY	\$50.00	\$0.00
8	2" Mill and Overlay	10,050	SY	\$15.00	\$150,750.00
9	Full Depth Patch	2,030	SY	\$50.00	\$101,500.00
10	SWS Extension	1	LS	\$50,000.00	\$50,000.00
11	Signing	1	LS	\$5,000.00	\$5,000.00
12	Pavement Markings	1	LS	\$25,000.00	\$25,000.00
13	Shryock Park Ent. Relocated	1	LS	\$20,000.00	\$20,000.00
14	Temporary Traffic Control	1	LS	\$40,000.00	\$40,000.00
15	Temporary Erosion Control	1	LS	\$10,000.00	\$10,000.00
Construction Cost (ESTIMATED)					\$1,064,800.00
Contengencie (30%) (Design, Utilities, Project)					\$319,440.00
Total Project Cost (ESTIMATED)					\$1,384,240.00

Belmont to N of David - Mill and Overlay 2-lane
 Sideroads and Entrances Mill and overlay 10' width to match existing, Relocate Park Entrance
 N of David to Lakeside (S) - Reconstruct exist. 2-lane
 Sideroads 10' mill & Overlay lane line out, dirves full depth consturction to R/W
 Lakeside to N. City Limits - Reconstruct exist 2-Lane and Mill and Overlay exist. 3rd lane.
 E. Sideroads 10' mill & overlay lane line out, W. Sideroads do nothing,
 drives full depth consturction to R/W
 Includes approx 150' on Belmont East of Ohio

CITY OF AUGUSTA
NORTH OHIO - BELMONT AVENUE NORTH TO CITY LIMITS

Engineer: Schwab-Eaton, PA
 Augusta, Kansas
 Project Length: 6,820 lineal feet (1.29 miles)

REVISED
 Updated 1/15/2019

3-LANE ROADWAY

Item No.	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Cost
1	Cleaning of Existing Structures	1	LS	\$5,000.00	\$5,000.00
2	Site Clearing and Restoration	1	LS	\$20,000.00	\$20,000.00
3	Pavement Removal	25,990	SY	\$8.00	\$207,920.00
4	Excavation - Dirt	4,000	CY	\$7.00	\$28,000.00
5	Asphaltic Concrete Pavement (7")	26,410	SY	\$30.00	\$792,300.00
6	Modified Subgrade (10")	27,860	SY	\$13.00	\$362,180.00
7	Concrete Pavement / Valley Gutter (8")	5,200	SY	\$50.00	\$260,000.00
8	SWS Extension	1	LS	\$50,000.00	\$50,000.00
9	Signing	1	LS	\$5,000.00	\$5,000.00
10	Pavement Markings	1	LS	\$25,000.00	\$25,000.00
11	Shryock Park Ent. Relocated	1	LS	\$20,000.00	\$20,000.00
12	Temporary Traffic Control	1	LS	\$40,000.00	\$40,000.00
13	Temporary Erosion Control	1	LS	\$10,000.00	\$10,000.00
	Construction Cost (ESTIMATED)				\$1,825,400.00
	Contengencie (30%) (Design, Utilities, Project)				\$547,620.00
	Total Project Cost (ESTIMATED)				\$2,373,020.00

Reconstruction plus lane addition North side of Belmont to North City Limits
 Includes approx 150' on Belmont East of Ohio

CITY OF AUGUSTA
NORTH OHIO - BELMONT AVENUE NORTH TO CITY LIMITS

Engineer: Schwab-Eaton, PA
 Augusta, Kansas
 Project Length: 6,820 lineal feet (1.29 miles)

REVISED
 Updated 1/15/2019

3-LANE ROADWAY

Item No.	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Cost
1	Cleaning of Existing Structures	1	LS	\$5,000.00	\$5,000.00
2	Site Clearing and Restoration	1	LS	\$20,000.00	\$20,000.00
3	Pavement Removal	16,000	SY	\$8.00	\$128,000.00
4	Excavation - Dirt	4,000	CY	\$7.00	\$28,000.00
5	Asphaltic Concrete Pavement (7")	19,100	SY	\$30.00	\$573,000.00
6	Modified Subgrade (10")	20,300	SY	\$13.00	\$263,900.00
7	Concrete Pavement / Valley Gutter (8")	0	SY	\$50.00	\$0.00
8	2" Mill and Overlay	10,050	SY	\$15.00	\$150,750.00
9	Full Depth Patch	2,030	SY	\$50.00	\$101,500.00
10	SWS Extension	1	LS	\$50,000.00	\$50,000.00
11	Signing	1	LS	\$5,000.00	\$5,000.00
12	Pavement Markings	1	LS	\$25,000.00	\$25,000.00
13	Shryock Park Ent. Relocated	1	LS	\$20,000.00	\$20,000.00
14	Temporary Traffic Control	1	LS	\$40,000.00	\$40,000.00
15	Temporary Erosion Control	1	LS	\$10,000.00	\$10,000.00
Construction Cost (ESTIMATED)					\$1,420,150.00
Contengencie (30%) (Design, Utilities, Project)					\$426,045.00
Total Project Cost (ESTIMATED)					\$1,846,195.00

Belmont to N of David - Mill and Overlay 2-lane and construct new 3rd lane
 N of David to Lakeside (S) - Reconstruct exist. 2-lane and construct new 3rd lane
 Lakeside to N. City Limits - Reconstruct exist 2-Lane and Mill and Overlay exist. 3rd lane.
 Min work on Sideroads and Drives
 Includes approx 150' on Belmont East of Ohio

CITY OF AUGUSTA
NORTH OHIO - TAYLOR AVENUE NORTH TO CITY LIMITS

Engineer: Schwab-Eaton, PA
 Augusta, Kansas
 Project Length: 3,600 lineal feet (0.68 miles)

REVISED
 Updated 1/15/2019

3-LANE ROADWAY

Item No.	Description	Quantity	Unit	Engineer's Estimate	
				Unit Price	Cost
1	Cleaning of Existing Structures	1	LS	\$5,000.00	\$5,000.00
2	Site Clearing and Restoration	1	LS	\$20,000.00	\$20,000.00
3	Pavement Removal	13,570	SY	\$8.00	\$108,560.00
4	Excavation - Dirt	4,000	CY	\$7.00	\$28,000.00
5	Asphaltic Concrete Pavement (7")	14,170	SY	\$30.00	\$425,100.00
6	Modified Subgrade (10")	14,970	SY	\$13.00	\$194,610.00
7	Concrete Pavement / Valley Gutter (8")	3,200	SY	\$50.00	\$160,000.00
8	SWS Extension	1	LS	\$45,000.00	\$45,000.00
9	Signing	1	LS	\$5,000.00	\$5,000.00
10	Pavement Markings	1	LS	\$20,000.00	\$20,000.00
11	Shryock Park Ent. Relocated	1	LS	\$20,000.00	\$20,000.00
12	Temporary Traffic Control	1	LS	\$40,000.00	\$40,000.00
13	Temporary Erosion Control	1	LS	\$10,000.00	\$10,000.00
	Construction Cost (ESTIMATED)				\$1,081,270.00
	Contengencie (30%) (Design, Utilities, Project)				\$324,381.00
	Total Project Cost (ESTIMATED)				\$1,405,651.00

Includes approx. 150' on belmont East of Ohio

City of Augusta, Kansas

Cash Flow Analysis - GO Temp Notes

January 11, 2019

Year	Existing Series 2017-1 Temp Note	Proposed Projected Series 2019-1 Temp Note	Proposed Projected Series 2020-1 Temp Note	Total Debt Service
2015				
2016				
2017				
2018	486,189			486,189
2019	491,825			491,825
2020	491,305			491,305
2021		367,455	124,541	491,996
2022		370,555	125,333	495,888
2023		368,100	127,813	495,913
Totals	1,469,319	1,106,110	377,686	2,953,114

Scenario

- * Series 2017-1 \$1.43MM GO Temp Note issued 5/18/2017 over 3 Years
- * Projected Series 2019-1 \$1.06MM GO Temp Note closing 6/1/2019 over 3 Years @ 2.30%
- * Projected Series 2020-1 \$360,000 GO Temp Note Closing 6/1/2020 over 3 Years @ 2.38%

City of Augusta, Kansas

Cash Flow Analysis - Sales Tax Cash Flows

February 11, 2019

Year	Series 2017-1 Temp Note	Projected Series 2019 Debt Service	Projected Series 2020-1 Temp Note	Total Debt Service
2015				
2016				
2017				
2018	486,189			486,189
2019	491,825			491,825
2020	491,305	-		491,305
2021		424,360	77,875	502,235
2022		422,660	79,200	501,860
2023		420,660	76,950	497,610
Totals	1,469,319	1,267,680	234,025	2,971,024

Scenario

* Series 2017-1 \$1.43MM GO Temp Note issued 5/18/2017 over 3 Years

* Projected Series 2019 \$1.2MM GO Bond closing 6/6/2019 over 3 Years funding a \$1,139,000 Project

* Projected Series 2020-1 \$220,000 GO Temp Note Closing 6/1/2020 over 3 Years funding a \$214,500 Project

City of Augusta, Kansas

Cash Flow Analysis - Sales Tax Cash Flows

February 11, 2019

Year	Series 2017-1 Temp Note	Projected Series 2019 Debt Service	Total Debt Service
2015			
2016			
2017			
2018	486,189		486,189
2019	491,825		491,825
2020	491,305	-	491,305
2021		500,790	500,790
2022		501,990	501,990
2023		502,740	502,740
Totals	1,469,319	1,505,520	2,974,839

Scenario

* Series 2017-1 \$1.43MM GO Temp Note issued 5/18/2017 over 3 Years

* Projected Series 2019 \$1.425MM GO Bond closing 6/6/2019 over 3 Years funding a \$1,360,000 Project

Most Relevant



Write a comment...



Holly Schaffner In addition to this issue, I would like to see a stop light at the high school. There are a lot of accidents there and a lot of close calls involving both vehicles and pedestrians.

8

Like · Reply · Message · 2d



Jamie Ann **Holly Schaffner** yes I was going to say the same thing. There needs to be one at the north high school entrance so that pedestrians and traffic would flow better coming out of the parking lot. It is very dangerous there especially for inexperienced drivers.

2

Like · Reply · Message · 21h



Write a reply...



Rob Schmidt Your question should read.."Do you want to pay more in taxes to move the park entrance you just paid to build last year? " Think that will come back overwhelming NO

3

Like · Reply · Message · 2d · Edited



Justin Londagin **Rob**, poor planning. I know I took some heat for my comments last year saying as a council we needed to slow down and get it right the first time.

1

Like · Reply · Message · 4h



Write a reply...



Danny Williams Adding the middle turn lane should also help if not eliminate rear ends completely.

8

Like · Reply · Message · 2d · Edited



City of Augusta, Kansas Thanks for the feedback **Danny Williams**. Adding a center turn lane is one of the options Council will be discussing at the work session as well. The Shryock Park entrance relocation is kind of related, but is its own stand-alone issue that we are exploring.

2

Like · Reply · Commented on by Josh Shaw · 2d



Danny Williams I saw the post earlier about the turn lane and believe it's a great idea. The turn lane south of Kelly has helped with the flow of traffic I'm sure.

1

Like · Reply · Message · 2d



Danny Williams Fun fact: We moved back to Augusta from El Dorado in November and our vehicle insurance went up \$10/ month because we moved to a high claim area. Maybe resolving these issues will lower the claim rates.

3

Like · Reply · Message · 2d



Kenny Butt **Danny Williams** hmm. My insurance went up \$30 per month for the new year...

Like · Reply · Message · 2d



Morgan Lynch **Danny Williams** agree!!

Like · Reply · Message · 2d



Write a reply...



Gretchen Otis Am I the only one that doesnt see a difference in the 2 pictures?? 1

Like · Reply · Message · 2d



Kenny Butt Gretchen Otis I thought the same thing at first, but I believe it's a yes or no option. Not showing a difference between pics. 1

Like · Reply · Message · 2d



Candy Thompson Gretchen they are both a picture of a new entrance to the park lined up with Smiles. Clicking on one will let you vote.

Like · Reply · Message · 2d



Rhonda Enloe Morris Gretchen Otis I agree! Why would I click on one to vote when I don't see the difference.

Like · Reply · Message · 2d



Write a reply...



Jeremy Black No. Put in a turn lane instead. 4

Like · Reply · Message · 2d



Rob Schmidt Agree with DannyWilliams..the turn lane will surely reduce the accidents. The entrance was just recently completed..cant see the benefit of ripping out a completely new entrance. Wait 10 years til it needs resurfaced at least. 3

Like · Reply · Message · 2d



Brent VanDyke The issue is people staring at their phones. Please increase enforcement for people obviously looking down and texting while driving. I have the distinct feeling that if officers were posted at shryock from 745-830 and then from 3-345 in the afternoon,... See More 1

Like · Reply · Message · 2d



Robert Trout As long as you don't put a stoplight in. That'll just slow down traffic even more. I lived in Springfield Missouri for 8 years and the middle turn lane didn't do much to decrease accidents because there were stop lights that nearly every intersection. ... See More 2

Like · Reply · Message · 2d · Edited



Karen Berry I just wish that the light by the cross walk and White Eagle Credit Union was made so those of us coming out of the bank could get a green light. Sometimes its a waiting game to get out of there. It can be a cross walk but add a light so we can exit. 2

Like · Reply · Message · 2d



Kenny Butt NO. I think the turn lane at the current location would be a better option 2

Like · Reply · Message · 2d



Tim Davis This would be a big help. Have a lot of congested traffic there now moving the intersection to the play Park to the new location will help lower that

Like · Reply · Message · 2d

Jason K Holmes Or a 3rd lane



Marsha Forsyth Why is this a priority area?

Like · Reply · Message · 3d



Jason Lowery **Marsha Forsyth** great question. I'm no longer on city council but I can answer this from past discussion. The road is in horrible condition. It is cracked and crumbling beyond any kind of patch type repair. It is a major corridor for Augusta with a whole lot of traffic. Traffic really picked up after 70th (21st) street was paved. I'm hope that helps.

Like · Reply · Message · 3d · Edited

1



Zac Forsyth **Marsha Forsyth**

All of the community leaders live out there for one. Most citizens would agree that road is as smooth as any road in town.

Like · Reply · Message · 3d · Edited

1



Andy Hall Zac traffic on North Ohio has increased as 70th has become more travelled. Turning into the side streets with oncoming traffic during the 4-6 pm timeframe is dangerous.

Like · Reply · Message · 3d

1



Jayme Whitlow **Marsha Forsyth** it is so hard to turn out on to Ohio in this area. I live on one of these streets. So much traffic. They have done traffic studies to measure the flow with cameras over multiple days.

Like · Reply · Message · 3d

3



Jason Lowery I might add that not all of the city leaders live out there as well. There are two representatives from each ward in Augusta who serve on the council. Our current mayor is almost as far from that area as you can be while still living within the city. City employees are scattered throughout the community. Smooth doesn't equal safe, ice can be smooth.

Like · Reply · Message · 3d · Edited

3



Leonard Lee Wakefield **Marsha Forsyth** it's also a major artery for getting out of town quicker!

Like · Reply · Message · 3d



Sharon Myers Slade Traffic is also really heavy between 7:00-8:30 am on North Ohio, also.

Like · Reply · Message · 2d



Zac Forsyth **Jason Lowery**

I think it's a priority I simply feel that there are some other streets in town that have been overlooked for too long. In twelve years my route to the schools and main business district has remained untouched. Part of which is still a DIRT Road!

Like · Reply · Message · 2d · Edited

1



Jason Lowery **Zac Forsyth** I totally get that...I would love to see more city developed side walks. Unfortunately, the problem is that back when those streets were first developed no one was assessed a specials tax to cover the building of a proper road/street- A la... [See More](#)

Like · Reply · Message · 2d



Elray Matlock **Zac Forsyth** that road is in terrible shape the asphalt is completely broken up and full of potholes. It needs to be milled up and resurfaced. Your problem with the Commisioners is your business but that road needs replaced.

Like · Reply · 1h



Write a reply...



Kelly Wheatley Slaton As inconvenient as the construction would be, the third lane would be a MAJOR improvement.

1

Like · Reply · Message · 2d



Sharon Myers Slade Agreed!

Like · Reply · Message · 2d



Write a reply...



Meghan Heywood This is all well and good, but my question is why they turned the train tracks on Custer Lane into a death trap.

Like · Reply · Message · 3d



Leonard Lee Wakefield Go with 3 lanes. Reasons: Cost of construction isn't going to get any cheaper, later. Plan ahead for future NE expansion and traffic flow. Traffic safety

5

Like · Reply · Message · 3d



Zac Forsyth Pave the existing unpaved roads for your tenured tax paying citizens first !! Harrington Ave and others.

1

Like · Reply · Message · 3d · Edited



Diana Roberts Zac Forsyth I agree also Ada st. Is really bad

Like · Reply · Message · 3d



Write a reply...



Diana Roberts Third center lane please!

6

Like · Reply · Message · 3d



Brad Cox The 3rd lane on Ohio gets my vote.

2

Like · Reply · Message · 2d



Cale Magruder Thanks to everybody for weighing in. Your input will be helpful in moving the discussion forward at the work session on Monday. I have copied the summary of the proposals from the engineer and will link to the detailed report (begins on page 31).

... See More

[Like](#) · [Reply](#) · [Message](#) · 6h · Edited



Deb Lakin Engelbrecht Trying to turn into Ohio from Arnold in the mornings is a nightmare. Thank you to our city council for the work you do to help make our community better,

[Like](#) · [Reply](#) · [Message](#) · 2d



Tim Davis 3rd lane all the way.

1

[Like](#) · [Reply](#) · [Message](#) · 10h



Todd Albright 3 lanes. A lot of potholes formed this winter so far. Better now than later.

1

[Like](#) · [Reply](#) · [Message](#) · 2d