MINUTES
BLOOMINGTON TRANSPORTATION COMMISSION
REGULAR MEETING
TUESDAY, DECEMBER 19, 2017 4:00 P.M.
COUNCIL CHAMBERS, CITY HALL
109 EAST OLIVE STREET
BLOOMINGTON, ILLINOIS

MEMBERS PRESENT: Ms. Angela Ballantini, Ms. Jill Blair, Ms. Maureen (Reenie) Bradley, Ms. Katherine Browne, Mr. Michael Gorman

MEMBERS ABSENT: Ms. Elizabeth Kooba, Ms. Kelly Rumley

OTHERS PRESENT: Mr. George Boyle, City Attorney; Mr. Jim Karch, Director of Public Works; Mr. Kevin Kothe, City Engineer, Mr. Philip Allyn, City Traffic Engineer; Mr. William Caisley, McLean County Board Member and Chairman of the County's Transportation Committee, Mr. Eric Schmitt, McLean County Administrative Services Director; Mr. Jerry Stokes, McLean County Engineer, and several members of the public.

1. CALL TO ORDER: Mr. Gorman called the meeting to order at 4:05 pm.

2. ROLL CALL: Mr. Allyn called the roll. With five members in attendance, a quorum was established.

3. PUBLIC COMMENT:
Mr. William Caisley, McLean County Board Member and Chairman of the County's Transportation Committee, spoke regarding the Towanda Barnes Road and Ireland Grove Road Intersection. Mr. Caisley indicated the County's desire to see the project move forward. There are large backups and Towanda Barnes Road is the busiest highway on the County Highway system. There have been a number of crashes, most of which have been low speed crashes due to distractions while drivers are waiting in line at the intersection. There has also been at least one fatality. The intersection congestion diverts traffic onto a private road in an attempt to bypass the intersection, creating unsafe additional left turns from Towanda Bares onto the private road and from the private road onto Ireland Grove. The County Board would prefer to use MFT funds for their portion of the project. Mr. Jerry Stokes, County Engineer, is present and available if there are any questions for the County.

4. MINUTES: Reviewed and approved the minutes of the October 17, 2017 and November 28, 2017 regular meetings of the Bloomington Transportation Commission. Ms. Blair motioned to approve the minutes of the October 17, 2017 meeting with correction of several minor typos. Ms. Browne seconded the motion. The motion was approved by the Transportation Commission unanimously via voice vote.

Ms. Blair motioned to approve the minutes of the November 28, 2017 meeting with the correction of several minor typos. Ms. Browne seconded the motion. Ms. Bradley indicated that she should be removed from the voting results on each item as she was not present at the November meeting. The motion to approve the minutes with the requested modifications was approved by the Transportation Commission unanimously via voice vote.

5. REGULAR AGENDA

A. TC-2017-03 – Consideration of a recommendation to City Council concerning a Motor Fuel Tax Resolution for an additional $900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road.

Mr. Allyn presented information requested at the previous meeting, starting with the requested results of the roundabout alternate evaluation. Due to the heavy eastbound left turning movement in the PM peaks, a three-lane roundabout would be required. With just a dual-lane roundabout, the constant traffic stream of the eastbound left turns would prevent northbound and westbound vehicles from entering the roundabout, resulting in extremely long delays for these northbound and westbound drivers. To accommodate the heavy southbound right volume, the free-flow right turn bypass lane would still be required. While the traffic signal equipment would be removed, roadway lighting of the circle and the approach legs would be required, resulting in no net change in ongoing maintenance costs due to electricity and equipment maintenance. Since this intersection is in a higher speed area, the limits of the project would be extended noticeably to construct chicanes, (a series of successively tighter alternating curves) on the roundabout approaches to slow traffic before they entered the relatively tight radii in the roundabout itself.

Mr. Allyn reviewed the positive benefits of the roundabout option. Speeds through the intersection would be reduced from 45-65 mph to likely under 30 mph and red-light-running would be eliminated. The lower vehicle speeds and reduced conflict points should noticeably reduce the severity of crashes that do occur. A roundabout will allow relatively continuous flow during off-peak times, providing much more efficient travel for motorists during these times. Finally, due to the location of this intersection and the high volumes of out-of-town traffic coming to Bloomington from the south and east, a roundabout could be landscaped to provide an aesthetically pleasing gateway feature into the community.

Mr. Allyn discussed the disadvantageous of the roundabout option. While crash severity should be reduced, due to the complexity of the three-lane roundabout, the number of crashes should not be expected to decrease and may actually increase. Pedestrian accommodations are not planned with the current intersection improvements since there is currently very little, if any, need. However, as the area develops, crosswalks and sidewalk/paths can be added to the traditional intersection with a minimum of cost and effort by painting crosswalks and adding the pedestrian signal equipment to the existing mast arms. With a multi-lane roundabout, HAWK pedestrian signal equipment would be required for each crosswalk amounting to a significant additional construction cost, as well as additional maintenance costs. These would also increase the complexity of navigating the roundabout for motorists and bicyclists. Since there are virtually no acceptable detour routes for a full closure, traffic would need to be maintained through the work area. Due to the entire pavement within the intersection being reconstructed for a roundabout, the work would need to be broken up into many smaller work areas to maintain traffic, reducing efficiency and increasing the difficulty, cost and duration of construction. The proposed intersection widening does not remove the existing pavement, so while the number of lanes might be reduced during construction, there is still adequate room to maintain traffic. Since the design and construction documents for the proposed intersection widening are complete and ready to be bid once Right-of-Way (ROW) acquisition is complete in the near future, construction of the project is anticipated to be ready to begin this summer (2018). However, with the roundabout alternate, the project would essentially start over from the beginning with a new preliminary design, and recreating construction documents. This would resulting in construction likely being delayed approximately two years. The roundabout alternate would also more significantly impact surrounding properties. ROW would be required in the southeast and southwest quadrants and the ROW required in the northeast quadrant would increase. The ROW required in the southwest quadrant would likely impact the existing private frontage road, potentially impacting the feasibility of development of the parcel. Utility impacts would also be more significant, specifically to the large Ameren transmission line along the east side of Towanda Barnes. The major pole in the northeast quadrant could be avoided with the currently proposal, but would require relocation to construct the roundabout. Total remaining costs for the currently proposed intersection design are estimated at $1.6 million for construction with an additional $40,000 to $60,000 for ROW acquisition and utility relocation. For the roundabout option, construction is estimated to cost between $2.5 million and $3.5 million due to the increased project limits and pavement reconstruction;

new Design Engineering will be required for around $150,000 - 200,000; utility relocation will likely increase to around $150,000 to relocate the large Ameren transmission pole and Nicor gas mains currently in easements; and ROW acquisition could easily double to over $50,000 for a total additional cost of $3 to 4 million.

Mr. Gorman mentioned that he was disappointed that a two-lane roundabout wasn't possible and that three-lanes would be required. If two left turn lanes are sufficient for the traditional intersection, why are three required for the roundabout? Mr. Allyn responded that in the roundabout, there is nothing to force the left turn traffic to stop and let other vehicles use the intersection. In a signalized intersection, even if a vehicle has to wait a cycle or two, there will always eventually be a red light stopping the conflicting movements (in this case the eastbound lefts during the afternoon/evening peaks) that allow the other legs to go. When the roundabout was modeled, it showed a constant steam of eastbound left turn traffic entering the roundabout unopposed. Since the northbound and westbound legs are required to yield to the traffic in the roundabout, they can't enter and end up waiting indefinitely. While there are different specific configurations that could be evaluated in greater detail during the actual design, three lanes around at least a portion of the roundabout would be required.

Mr. Gorman inquired about how traffic projections are determined and whether the Community Development Department and the City's Comprehensive Plan are consulted. Mr. Allyn responded that typically, the actual existing traffic volumes are counted and then a growth factor is applied to arrive at a projected volume for the chosen design year. The growth factor is based on the actual growth that has been experienced in the recent past. Most roads are counted every two to four years by the City, County or IDOT. Shifts in patterns are taken into consideration; for example, we currently ignore the high-growth rates seen prior to 2008, and look at the changes in volumes over the last 5-6 years. If there is a significant new source of traffic that will be established in the near future, then additional traffic volumes are added based on Trip Generation data. Ideally, local data specific to the new generator type will be used. However, when it's not available, the Institute of Transportation Engineers (ITE) has collected data into its *Trip Generation Manual*. Counts of actual traffic volumes created by real developments of all different sizes all across the country are completed and categorized by type: single-family house, apartment, gas station, fast food restaurant, etc. All these counts are then compiled by the type of use and best-fit lines are generated. This allows someone to determine that a certain number of houses could be expected to generate a certain volume of traffic. This expected "new" traffic is added to the existing traffic to project the future traffic volumes. For this project, we counted the number of homes that are expected to be constructed at the Grove in the phases currently underway and estimated the amount of additional traffic they would generate. This was then added to the existing traffic increased at the growth that is currently being seen to project the anticipated traffic volume in the 20-year design period. This is very typical for projects with IDOT involvement. If only local funds were being used, a shorter design year could be considered, or even just the existing traffic. This was the case at the Ireland Grove and Streid Drive intersection we reviewed last month. We looked at the current year traffic to determine if there is a problem right now rather than whether there could there be a problem 10 or 20 years from now. In the case of the Towanda Barnes intersection, we know that we have a problem right now. In order to not have to come back and redo the intersection every 5 years and traffic changes, we designed the improvements with the expectation that they will be sufficient for 20 years.

Mr. Gorman mentioned that he is aware of criticisms of the ITE *Trip Generation Manual* and how volumes are derived. For example, studies focus on suburban settings without mass transit options, the "ideal" automobile model. Are there ways that traffic can be reduced at this location, such as can Connect Transit come out there and reduce the number of vehicles to modify the way that the ITE *Trip Generation Manual* would estimate future traffic volumes? Mr. Allyn responded that the ITE Manual is a collection of real live collected data. The number of houses is counted, the number of vehicles entering and leaving is counted and the data is documented. It is collected across the country and averaged out. There will be

some variation from place to place. For example, a subdivision with primarily retired occupants in Florida may generate different numbers than a subdivision in the suburbs of Chicago or LA or in a town in Wyoming. There is variability; however, it is the best approximation available. In this particular case, we could have paid the consultant to do an extensive study counting the cars going to and from the first phase of the Grove and then applied those rates to the homes yet to be constructed in the current phases. However, there are no certainties that those numbers would be any better of a guess of the actual volumes to be seen in 20 years than the ITE rates. It's just another data point. In this case, the only trip generation that was done was for the next phase of the Grove that we knew was under construction and would be occurring. There were not any additional traffic volumes added for any of the other potential development that might occur in to the north, south or west. In response to whether the ITE Trip Generation is valid, which seems to be the ultimate question, it is the industry standard and is the best data available.

Mr. Gorman mentioned that the growth rates seen over the past several decades are valid but are based on an outdated growth pattern that the new Comprehensive Plan discourages. Under the new Comprehensive Plan, is it likely that we will still see the same rates of growth? Mr. Allyn responded that one of the biggest unknowns in Traffic Engineering is what exactly is going to happen over the next 20 years. The current Comprehensive Plan may change again in 10 years. Until we see how the current Comprehensive Plan affects traffic volumes, it's very hard to guess what those impacts will be. It's very possible that things may change in the coming years to be different than how we assume they will be now.

Mr. Allyn addressed other questions and requests for information from the November meeting, reviewing the various exhibits from the agenda packet. The exhibit showing the various Average Daily Traffic volumes along Towanda Barnes Road and each of the major crossroads was reviewed. Volumes are highest between Ireland Grove Road and Empire/Route 9, and decrease as you go further north. When applying the ADT volumes to the number of crashes calculated by the County for the major intersections along Towanda Barnes, Raab Road has the highest rate at 1.418 crashes per million vehicles. However, this intersection was also under significant reconstruction with work zone traffic control during the period analyzed, so it's possible the numbers are skewed. Ignoring Raab, the next highest rate intersection along Towanda Barnes is Ireland Grove at 1.199 crashes per million vehicles, followed by the Empire intersection at 0.988 and Fort Jesse at 0.868.

Mr. Allyn explained Level of Service (LOS) and associated Control Delay as defined by the *Highway Capacity Manual*, a research and data based manual that governs traffic modeling. The LOS is a letter grade A through F that corresponds to each point at which a user's experience gets worse. For example, LOS A corresponds to a driver being impacted very little by an intersection. LOS F corresponds to a failed intersection where drivers have to wait multiple signal cycles to pass through. Each letter is associated with a range of seconds of Control Delay. Control Delay is the additional number of seconds that it takes a user to navigate the traffic control device. If you approach the intersection at 45 mph, and pass through maintaining 45 mph, your delay is zero. If you have to slow down from 45 mph to 5 mph before accelerating back to 45 mph, even though you didn't stop, you still were delayed, maybe 5-10 seconds. If you have to stop for 20 seconds, you have the stop time, plus the slow down and speed back up times, and your delay is maybe 35-40 seconds. The thresholds are based on experience. For example, the change from LOS B to LOS C is 20 seconds, which is about the point at which people start to first feel impatient and may creep forward or start to wonder when the light is going to change. At about 55 seconds (LOS C to LOS D), people start to think maybe there is something wrong with the signal. The typical standard that we try to maintain is a LOS of C for Arterial roadways, with LOS D allowed in extenuating circumstances. Collectors and Local Streets have lower volumes and slower speeds, so the typical accepted minimum LOS is D for those roads.

Mr. Allyn reviewed the Capacity Analysis Comparison Tables. The LOS for the intersection today with no improvements currently ranges between C and F with the worst delays seen on the southbound

movements as can be expected. With the projected 20-year traffic volumes, LOS for many movements drops from C and D to E or F. It's likely that the delays shown over 300 seconds (1,825.2 seconds for example) are examples of the traffic model "breaking" because the delays are high enough that the governing equations are no longer valid. In these cases, while the numbers may not be technically correct, they do represent an extremely long and typically unacceptable delay.

The third group of data shows the expected 20-year results with the proposed improvements. Note the LOS is B, C, or D for all movements with the proposed improvements. While the high number of D's don't meet the desired LOS of C, they are significantly better than even the current conditions.

The final columns show the expected LOS for the roundabout alternate using a two-lane roundabout configuration. While it functions well in the morning since we still have the southbound right turn bypass, it fails in the evening. It can be seen that the westbound, northbound and eastbound legs all have a LOS of F, again due to the eastbound left turning traffic over-powering the roundabout and blocking the south and east legs. The southbound approach is still fairly good since those drivers will be able to enter the roundabout ahead of the eastbound left turns and thus do not get stopped indefinitely.

Mr. Allyn mentioned that after collecting speeding data on Ireland Grove and reviewing it with the Police Department, they would be initiating increased enforcement in January.

Mr. Allyn discussed the review of crash data for the other intersections along Towanda Barnes and how crash rates changed with the addition of right turn lanes. Most of the intersections had right turn lanes added as part of the larger projects widening Towanda Barnes from two lanes to five lanes, so there isn't really comparable data. The one intersection in which the addition of right turn lanes was the dominant modification was at Oakland, where the volumes are noticeably lower than at Ireland Grove. The crash rate dropped from 0.392 before the turn lanes to 0.379 after. Note this rate is already fairly low compared to the other intersections.

Ms. Bradley asked about school buses being able to navigate a three-leg roundabout and which directions would they be traveling. Mr. Allyn indicated he wasn't sure on how the School District routes the buses, but they would be traveling through the roundabout. Buses should have no issues navigating the roundabout, regardless of the number of lanes. Since these are arterial roads, the roundabout would be designed to accommodate semi-trucks, which require more room to turn than a school bus.

Ms. Blair commented on the LOS tables that even with the improvements, there are still a lot of C's and D's, which doesn't seem to be a significant improvement. Would we need to be returning in another 10-15 years for more changes? Mr. Allyn responded that the typical "acceptable" LOS is C or D, and we fall within that range. In addition, the values shown are for the 20-year design period. Immediately after the project is constructed, the LOS should be slightly better. As traffic then grows naturally over time, it could be expected to reach the values in the table. One of the reasons 20 years is the standard design period is because after that amount of time, more involved maintenance work is often beginning to be needed and other modifications, if needed, can be made as part of that work. In addition, the reason the project started only as an initial "interim" 10-year improvement with just the southbound right turn lane was because of the East Side Highway planning that was being completed. As part of that study, a 20-year intersection design was completed with the assumption that the East Side Highway would be completed. This resulted in a significantly larger intersection with multiple through lanes, dual left turn lanes, and dual right turn lanes on all four legs as the "ultimate" intersection. Obviously, this is contingent upon if/when the East Side Highway is completed. Right now Towanda Barnes functions as the major north-south road on the east side of town. Airport Road is blocked by the airport. Hershey is already at capacity, so people travel a little further east to Towanda Barnes to travel north and south. When/if the East Side Highway is ever built, that changes the entire situation at this intersection. Ms. Blair confirmed that we don't want to build the full improvements now, not knowing when that will happen and potentially need

to redo work. Mr. Allyn reiterated that the proposed project should be adequate for the 20-year design period. There is obviously a balancing act between not just building a short-term fix that needs revisited in 5 years and overbuilding because you want to plan for 50. That happened in the past with some of the intersections and roads build 15 years ago during the building boom that now have extra lanes that aren't needed.

Ms. Bradley reiterated that people avoiding the intersection by traveling on the private road and using the Pony entrance is a problem. Are there steps that can be taken to eliminate this such as a "No Thru Traffic" sign? Mr. Allyn indicated that since the road is on private property, the only way to really stop people from using this road is to put up a gate, which we can't do on private property. Signs very likely won't stop someone currently bypassing the intersection illegally. Mr. Gorman believes that there are law-abiding citizens that are just fed-up that would choose to obey the law if there was a sign indicating "No Left Turns" even if it meant the extra delay at the intersection. Ms. Bradley mentioned that there are also people traveling to the Pony fields that would be impacted by the left turn restriction. Mr. Allyn indicated that it's might be possible to restrict the left turns by making the entrance a right-in-right-out with a large channelizing island that would physically restrict left turns. There could be funding issues as well since it's private property and the entrance is on the County Highway. Ms. Bradley reaffirmed that the cut through traffic seems to be a safety problem, but acknowledged that since it is private property, it's the owner responsibility.

Ms. Bradley motioned to recommend that City Council approve the Motor Fuel Tax Resolution for an additional $900,000 for intersection design, plans, construction documents, right-of-way, utility relocation, and construction for the intersection of Towanda Barnes Road and Ireland Grove Road and the Mayor and City Clerk be authorized to execute the necessary documents. Ms. Ballantini seconded the motion.

Ms. Blair requested verification that Staff was comfortable with the recommendation and asked if there were any reservations. Mr. Allyn indicated he had no reservations about the project and believes that both the proposed improvements and the use of MFT funds for the project are the proper thing to do for this intersection. The proposed improvements alleviate the problems currently occurring at the intersection with a long-term solution while not overbuilding. This project is the right complexity and size matching the most efficient use of MFT funding as opposed to local funds.

Mr. Gorman indicated that his understanding was that before involving IDOT and planning to use MFT funds, the project was smaller and was increased to the current size by IDOT. Mr. Allyn responded that the County and City initially approached IDOT about the project in 2014 to request using MFT funds to alleviate congestions associated with the heavy southbound right and eastbound left turn volumes. At that time, the Intersection Design Study (IDS) for this intersection was just being completed as part of the East Side Highway study as mentioned before. IDOT gave special permission to do a project with a 10-year interim design to help with the current situation, knowing that the ultimate 20-year project would be completed as part of the East Side Highway project. This lead to the preliminary design consisting of just the southbound free-flow right turn lane and changing the lane markings on the west leg to provide an eastbound dual left turn lane. During the IDS approval process in 2016, additional backups on the east leg began to present themselves. In addition, it was becoming apparent that the East Side Highway project was not likely to be completed within the next 20 years. In light of the issues developing on the other legs of the intersection and the anticipated delay of the East Side Highway, IDOT rescinded the permission for an interim 10-year project and required the full 20-year design based on new traffic projections. It is not that they did not allow just the southbound right turn lane at the beginning; it's that they changed their mind half-way through.

Mr. Gorman indicated that he was planning on voting no on this motion. He views the biggest issue and safety concern to be speeding. Certainly there are crashes due to rear ends and such from the congestion, but the bigger problem is the severe crashes resulting from high speeds and this proposal doesn't address the speeding problem. Hopefully, there are additional engineering changes that can be made in the future to help reduce speed at the intersection. Mr. Allyn indicated that there really isn't a way to directly affect speeding half a mile north or south of the intersection by making changes at the intersection. The best solution at this intersection is to allow it to function properly. The speeding issue relates to the overall corridor along Towanda Barnes, which cannot physically be addressed with a project at a single point along the corridor. Mr. Gorman indicated that he understood that the proposed intersection improvements won't affect areas outside the intersection. He stated that he is not concerned with the congestion at the intersection. The problem is speeding along the Towanda Barnes and Ireland Grove corridors. Since this project does not address the speeding issues in the larger overall area, he cannot support the proposed project.

Ms. Bradley stated that she's compelled to vote in favor of the motion. She sees this as a project that is almost completed and needs to be finished. Something needs to be done at this intersection. Engineering cannot replace enforcement and enforcement cannot replace engineering. She is conscious of the speed issue and severity of accidents and is concerned about the traffic volumes. We need to protect those most vulnerable in our community and the location of the school close to this intersection is a concern. We can not go back and change where the schools have already been placed. What we have is an intersection that needs some help before 2020. This is may not be the perfect option, but it should fix a lot of the problem. We can't just wait for the next idea. There will still be a speed problem, and there will still be a need for enforcement, but the proposed project addresses a lot of the problems at the intersection and she will be voting in favor.

Mr. Allyn added that there will be some indirect positive effects on speeding with the proposed improvements. If motorists are not forced to sit for an extremely long period at this intersection, they will be less likely to speed prior to and following the intersection in an effort to "make up" the lost time. This is the same reason why we do not use stop signs at every intersection in a subdivision as a method to control speed. The result of frequent stop signs is that drivers actually drive faster between intersections if they are forced to stop at every one.

Ms. Browne shares Mr. Gorman's concerns about needing to address the speeding and other issues of the intersection. She believes there is a need to change driver behavior as part of the remedy for the intersection. While reviewing the project, it has been impressed upon her that the Commission has not been asked to address problems with human behavior, but to address the engineering. We have been asked to evaluate whether this project makes the intersection the best it can be, not whether it solves every problem. Her initial hesitation on voting in favor of the proposal was having one intersection that is split 50-50 with the County but the larger burden is on the County and non-City roads with traffic diverting to other roads. In addition, she recognizes the concern with speeding as documented in multiple public comments and presentations by various people. However, those issues are not what the Commission has been asked to address and she will be voting on the proposal itself.

The motion was approved by the Transportation Commission by a vote of 4-1 with the following votes cast: Ms. Ballantini – yes, Ms. Blair – yes, Ms. Bradley – yes, Ms. Browne – yes, Mr. Gorman – no.

6. OLD BUSINESS: None

7. NEW BUSINESS: None

8. ADJOURNMENT: The meeting adjourned at 5:08 pm unanimously by voice vote; motioned by Ms. Blair and seconded by Ms. Browne.

Respectfully,

Philip Allyn
City Traffic Engineer