Bobbie Walthall

To: Charles Soules
Subject: RE: March 27th Roundabout News

---------- Forwarded message ----------
From: **Carl Gallagher** <cgall311@gmail.com>
Date: Thu, Mar 27, 2014 at 4:00 PM
Subject: Fwd: Roundabout news
To: mdever@sunflower.com, mikeamyx515@hotmail.com, schummfoods@gmail.com, terry Riordan <riordan346@gmail.com>, Jeremy Farmer <voteyourselfafarmer@gmail.com>, Charles Soules <csoules@lawrenceks.org>, Nick Voss <nvoss@lawrenceks.org>, "David L. Corliss" <dcorliss@lawrenceks.org>

Hello all - this is the first part of the email where I hit send too early. Regards Carl

---------- Forwarded message ----------
From: **Carl Gallagher** <cgall311@gmail.com>
Date: Thu, Mar 27, 2014 at 2:36 PM
Subject: Re: Roundabout news
To: Kenneth Mishler <k.mishler@me.com>, Carl Gallagher <cgall311@gmail.com>, fhwrightiv <fhwrightiv@gmail.com>, "paul.popiel" <paul.popiel@gmail.com>, gratefulgraham <gratefulgraham@yahoo.com>, fishgmcb <fishgmcb@sunflower.com>, anderguardk <anderguardk@hotmail.com>, "brown.jayme" <brown.jayme@gmail.com>, "as.ferguson" <as.ferguson@yahoo.com>, my_moms_farm <my_moms_farm@yahoo.com>, jsoddie <jsoddie@sunflower.com>, lgay <lgay@sunflower.com>, themosiers <themosiers@sunflower.com>, "nedlit4@gmail.com" <nedlit4@gmail.com>, "Colin S. 'Chip' Howat" <cshowat@howatrisk.com>, "drbrittingham@legendsdrivedental.com" <drbrittingham@legendsdrivedental.com>, ranjbarorthodontics@yahoo.com

Hello all - It would if I would get a straight answer, or at least a consistent answer, from public works. Attached is the latest map received today when representatives of Public works (Chuck Soules and Nick Voss), City Legal (Scott Wagner) and the appraisers (Ron Aul and Deedra Odell) arrived to provide information about the project and to discuss the next steps. It is closer to what Chuck Soules and Nick Voss (public works) told Ken and me on February 27 rather than what the sent me two weeks ago, which wasn't what they had originally. The only caveat is Chuck and Scott Wagner telling me this was it - and then adding "probably." That is what I wrote in the upper right of the document. FYI Chip Howat, the president of Normandy Park HOA, who is also an engineer who analyzes process and risk for clients attended at my invitation.

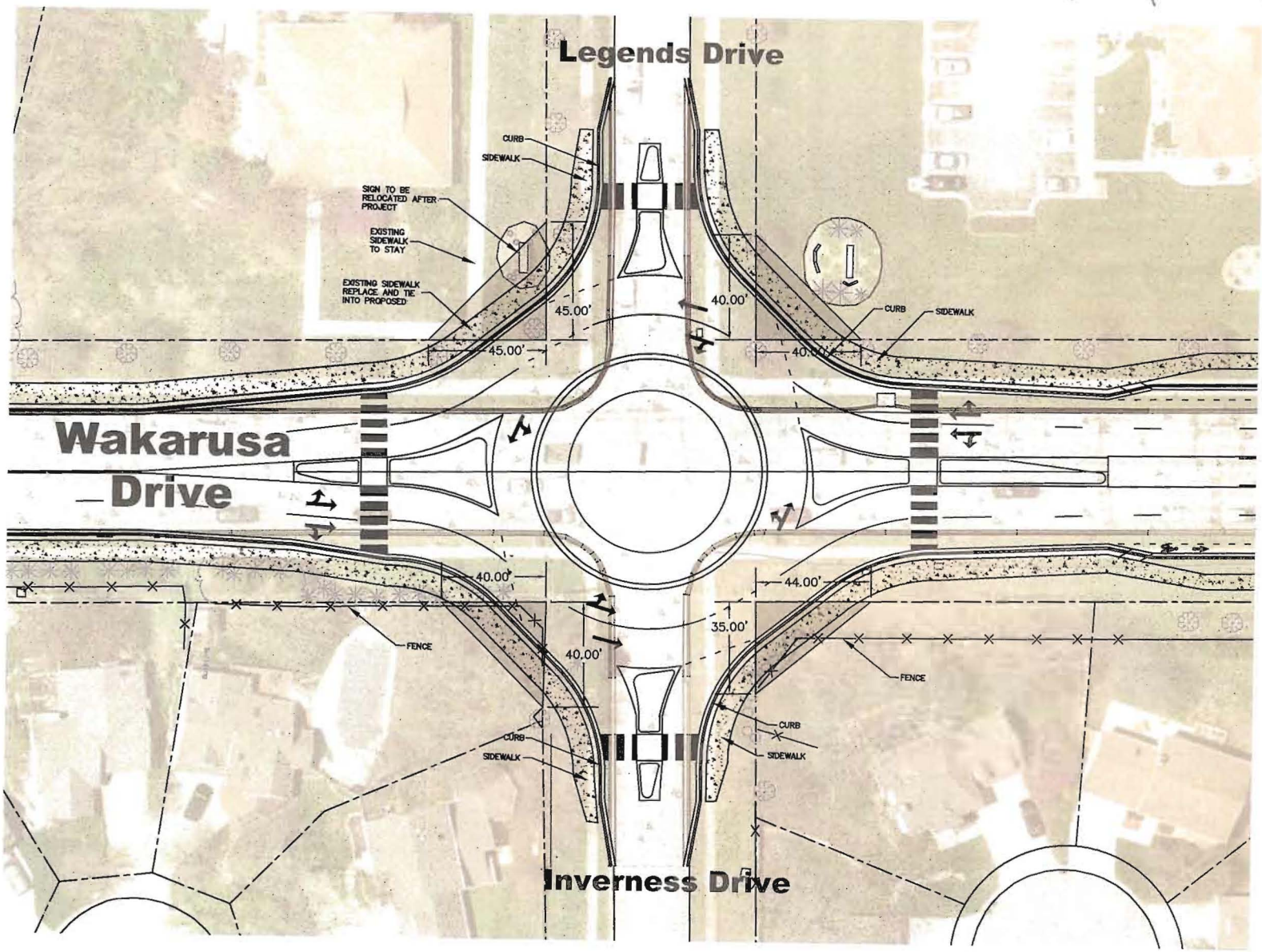
I was not given an appraisal value which is not surprising given that the appraiser wasn't sure what plantings etc. wpould be taken and, perhaps, exactly what property will be taken. They say they will simply move the fence back to the point behind what they are taking as right of way. wit todays map that is between three and four feet back from the fence's current location. The parts of the fence that will be moved are the two sections that are diagonal to the fence running north and south along Wakarusa. The first two sections at the south end of the fence will also become part of the diagonal rather than run north and south. Probably.

They say that the roundabout will be lower on our corner than the current road so they will build a retaining wall if we would like. I told them that such a retaining wall may very well slow down a vehicle coming through the fence enough that it won't enter our sunroom. So, if this roundabout happens, I told them to go with the retaining wall.

The timetable is:
1.

On Wed, Mar 12, 2014 at 2:36 PM, Carl Gallagher <cgall311@gmail.com> wrote:
Got this in the mail today. Maybe it means reconsideration is out of the question. If you compare the original map they sent, also attached, it now goes inside our fence rather than just along it. I am not surprised given that Chuck Soules and Nick Voss assured be that along the fence line was all that would be taken. Notice they are also moving the sidewalk along Wakarusa east onto all the property lines backing onto Wakarusa.

3/27/14 This is it. Probably



Right of Way for Wakarusa Project

Bobbie Walthall

From: Charles Soules
Sent: Monday, April 14, 2014 9:28 AM
To: Charles Soules
Subject: March 23rd, Wakarusa/Inverness/Legends Roundabout
Attachments: too detailed email.pdf; Repinsky guinea pig email.pdf; Voss map from Repinsky information.pdf

---------- Forwarded message ----------
From: **Carl Gallagher** <cgall311@gmail.com>
Date: Sun, Mar 23, 2014 at 10:46 PM
Subject: Re: Wakarusa/Inverness/Legends Roundabout
To: mdever@sunflower.com, mikeamyx515@hotmail.com, Jeremy Farmer <voteyourselfafarmer@gmail.com>, terry Riordan <riordan346@gmail.com>, schummfoods@gmail.com
Cc: "Colin S. 'Chip' Howat" <cshowat@howatrisk.com>, "drbrittingham@legendsdrivedental.com" <drbrittingham@legendsdrivedental.com>, dcorliss@lawrenceks.org, Scott Wagner <swagner@lawrenceks.org>

Hello all - while awaiting a response I made upon staff on March 14 I began taking a closer look at the response to an open records response and found these two emails which cause me some concern that you were not given sufficient information when rendering your decision on the Inverness, Wakarusa and Legends Drive roundabout.

First, it appears that the remarks made about conflict points in a roundabout related to single lane roundabouts - you were not given information about the configuration the City staff has designed because it was "probably too detailed to even understand." email string between Voss and Woolsey attached. I think you probably could understand . I think you are at least entitled to give it a try.

Next, it appears that staff relied on a MARC analysis of this roundabout where we are guinea pigs. This is significant because staff used the guinea analysis was incorporated into the Powerpoint presentation presented on November 26 as pure fact. I attach the Repinsky "guinea pig" email and the map presented in the Powerpoint without providing the Commissioners with full disclosure. See also November 26 video at 25:25.

As I told you in my March 3, 2014 letter, someone is likely to get hurt. Staff's comments on November 26 that only one in ten pedestrians would be killed in a 20 mph crash is quite appalling. November 26 video beginning at 17:45 through 18:50. Currently cars come to a stop - or relatively close to it. I suspect the data shows that pedestrians are generally not struck by cars that are not moving which would reduce fatalities to less than one in ten.

I will be blunt. It is likely that someone will be hurt because of the configuration. The design results in attentive drivers and pedestrians being unable to see one another while following the rules of the road with a likelihood of a collision occurring. This means the design is the problem rather than inattentive drivers or pedestrians. The City staff is designing this roundabout in house. This means that if there is a design defect which causes injury to persons or property, the City is on the hook for it. I am unaware of a Kansas Tort Claims Act exception which would insulate the City from liability.

Quite frankly, if someone is hurt simply because this roundabout is being installed simply because the City is improving the road rather than because traffic counts indicate that a change is necessary, I don't see how the

City can justify what it is doing. The discussion between the Mayor and staff member between 31:14 and 32:50 of the November 26 video makes clear that the this is a matter of convenience to the City without genuine concern for the safety or other aspects. Mr. Voss candidly admits there is no reason to install this roundabout other than the City is working on Wakarusa. I really cannot believe that the City is willing to risk the safety of a single person to install a roundabout that doesn't solve any existing problem.

You are now aware that staff has not fully provided you with information you needed to make a rational decision. You are now aware of the safety issues that may arise if this roundabout is installed. It is ultimately your responsibility whether or not there is full disclosure.

Please reconsider and put safety ahead of convenience. Regards Carl

On Mon, Mar 3, 2014 at 7:50 PM, Carl Gallagher <cgall311@gmail.com> wrote:

> Hello all - attached is a letter outlining concerns with the proposed roundabout. I also attach the emails between City staff and KDOT which relate to part of the letter. Regards, Carl Gallagher

From: Nick Voss
To: David Woosley
Subject: RE: Conflict Points
Date: Tuesday, November 05, 2013 11:34:00 AM

Thanks David,
I will talk about both the fewer conflict points and the speeds. I think I will leave out the pictures because I am afraid that they will ask about how it is different for larger intersections.

From: David Woosley
Sent: Tuesday, November 05, 2013 10:17 AM
To: Nick Voss
Subject: RE: Conflict Points

This is for a single lane approach for each situation; there are many more for a 4 lane intersection and a 2 lane roundabout, but probably too detailed to even understand.

City of Lawrence

David E. Woosley, P.E., *Transportation/Traffic Engineer* – dwoosley@lawrenceks.org
Public Works Department | City of Lawrence, KS
P.O. Box 708, Lawrence, KS 66044
office (785) 832-3034 | fax (785) 832-3054

From: Nick Voss
Sent: Tuesday, November 05, 2013 10:14 AM
To: David Woosley
Subject: RE: Conflict Points

Is this the same for a multiple lane roundabout?

From: David Woosley
Sent: Tuesday, November 05, 2013 10:01 AM
To: Nick Voss
Cc: David Cronin
Subject: Conflict Points

You may want to include in your presentation tonight one of the reasons that roundabouts are so much safer for motorists than traditional intersections, conflict points. From FHWA; a traditional intersection has 32 conflict points; a roundabout has 8 conflict points:

From: Andrea Repinsky
To: Nick Voss
Subject: RE: round abouts
Date: Tuesday, November 26, 2013 4:23:35 PM
Attachments: Roundabouts_crash_hsa.jpg
Roundabouts_crash_hsa_platte.jpg
Roundabouts_crash_hsa_johnson.jpg

Nick,

Sorry for the delay, but this has been a challenge with new data and new tools. You're our guinea pig, but I think it has gone well. I'll be using this same analysis to investigate hot spots involving pedestrians, to facilitate discussions on project priorities.

1) There are many roundabouts in other communities, providing precedent for roundabout construction. Many of them are 2-lane roundabouts.
2) Hot spot analysis was used, which is a good method to determine the locations of statistically significant clusters of crashes. Showing a map of just 'lots' vs. 'few' crashes isn't good enough. Only the hot spots really matter. They were determined in a way that took traffic volume into account, so that high-traffic areas, where there would be lots of crashes because of the high traffic volume, are not over-emphasized as hot spots.
3) None of the roundabouts are in crash hot spots.

See below and attached!

Best,

Andrea

Roundabouts were located and mapped in the 9-county Kansas City area. 2008, 2010, and 2012 aerial photos were used to determine the date of construction and number of lanes for the mapped roundabouts. Crash data and roundabout locations from the same time period were compared to determine whether existing roundabouts are within current crash hotspots. Crashes were used that occurred after 3/31/10, the date of the 2010 aerial photo collection. 14 one-lane roundabouts and 20 two-lane roundabouts were located, mostly in Johnson County, Kansas, plus Platte County, Missouri and Leavenworth County, Kansas. Optimized Hot Spot analysis was used within ArcGIS 10.2 software to determine statistically significant clusters of crashes. This analysis will show hotspots occurring in high-traffic locations, which obscures other safety problems that may be of interest, so crashes within 500 ft of major roads with modeled traffic volume data was used to calculate the number of crashes per modeled daily auto trip per road segment. These values were transferred back to the crash point locations. Optimized hot spot analysis was run on the ratio of crashes per auto trip, at crash locations within 500 ft. of the traffic volume road data. Few hot spots resulted, and none were co-located with roundabouts.

From: Nick Voss [mailto:nvoss@lawrenceks.org]
Sent: Tuesday, November 26, 2013 10:19 AM
To: Andrea Repinsky

Subject: RE: round abouts

Thanks Andrea,

From: Andrea Repinsky [mailto:arepinsky@MARC.ORG]
Sent: Tuesday, November 26, 2013 9:02 AM
To: Nick Voss
Subject: RE: round abouts

Nick,

It's been a really tricky analysis, but I'll send you something ASAP today if I can.

Andrea

From: Nick Voss [mailto:nvoss@lawrenceks.org]
Sent: Tuesday, November 26, 2013 8:22 AM
To: Andrea Repinsky
Subject: RE: round abouts

Andrea,
I will be presenting tonight to the commission. I was checking in to see if you were able to find any data.
Thanks,
Nick

From: Andrea Repinsky [mailto:arepinsky@MARC.ORG]
Sent: Thursday, November 14, 2013 5:07 PM
To: Nick Voss
Subject: RE: round abouts

Nick,

I'm still working on a software upgrade to allow me to access the analysis tool I want to use for this. I should have it tomorrow. Lots of the roundabouts I located in the KC metro are 2-lanes.

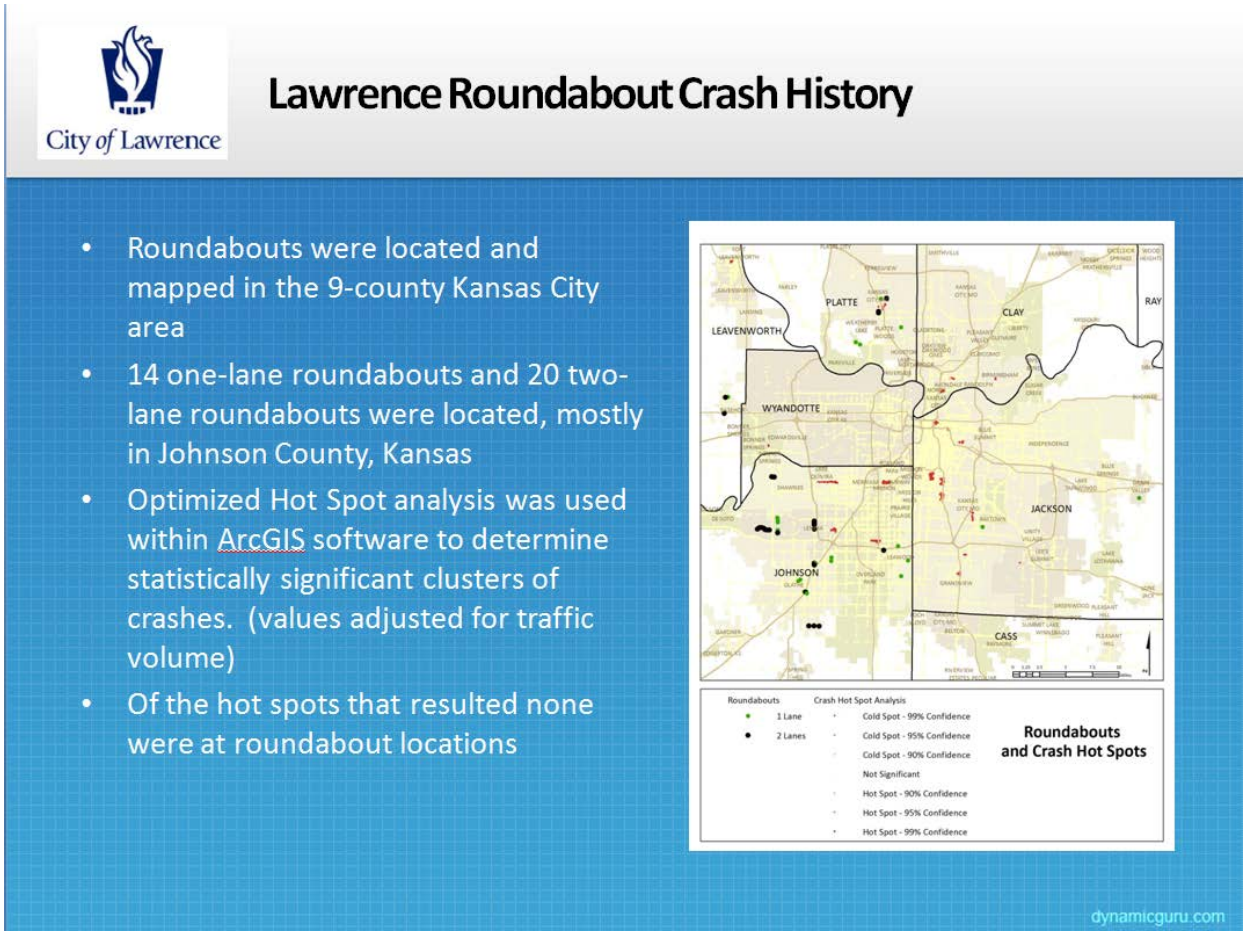
Andrea

From: Nick Voss [mailto:nvoss@lawrenceks.org]
Sent: Wednesday, November 13, 2013 4:13 PM
To: Andrea Repinsky
Subject: RE: round abouts

Thank you Andrea!

From: Andrea Repinsky [mailto:arepinsky@MARC.ORG]
Sent: Wednesday, November 13, 2013 3:09 PM
To: Nick Voss

From: Nick Voss
To: "Andrea Repinsky"
Subject: RE: round abouts
Date: Tuesday, November 26, 2013 4:37:00 PM
Attachments: image001.png



Andrea,
This is what I would like to add. Does everything look correct?

From: Andrea Repinsky [mailto:arepinsky@MARC.ORG]
Sent: Tuesday, November 26, 2013 4:23 PM
To: Nick Voss
Subject: RE: round abouts

Nick,

Sorry for the delay, but this has been a challenge with new data and new tools. You're our guinea pig, but I think it has gone well. I'll be using this same analysis to investigate hot spots involving pedestrians, to facilitate discussions on project priorities.

1) There are many roundabouts in other communities, providing precedent for roundabout construction. Many of them are 2-lane roundabouts.
2) Hot spot analysis was used, which is a good method to determine the locations of statistically significant clusters of crashes. Showing a map of just 'lots' vs. 'few' crashes isn't good enough. Only the hot spots really matter. They were determined in a way that took traffic volume into account, so that high-traffic areas, where there would be lots of crashes because of the high traffic volume, are not over-emphasized as hot spots.
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Colin S. Howat Ph.D., P.E.
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March 5, 2014

Lawrence City Commissioners:
Mayor Mike Dever, mdever@sunflower.com
Mr. Mike Amyx, mikeamyx515@hotmail.com
Mr. Jeremy Farmer, voteyourselfafarmer@gmail.com
Dr. Terry Riordan, riordan346@gmail.com
Mr. Bob Schumm, schummfoods@gmail.com

Re: Proposed Wakarusa/Inverness/Legends Roundabout

Dear Sirs:

I write to provide perspective on the intended roundabout at Wakarusa, Inverness and Legends intersection.

My name is Colin Howat. My wife and I own 4804 Normandy Park St. We built this house in 1990 and lived here since.

I am a licensed engineer directing the engineering firm C. S. Howat & Associates. We focus on risk assessment, i.e. frequency that there will be an error or event due to design or operation, consequence should it happen and safety culture supporting the risk evaluation. We analyze operating data, project it to the future and assess the risk accounting for any operating, installation and/or cultural changes.

I am also Director of the USA Cycling Mechanics Clinic at the Olympic Training Center in Colorado Springs focusing on preparation and support of world event cycling including the World Championships, Olympics and Tour de France. I am also an avid recreational cyclist with experience in the US and Europe.

As President of the Normandy Park Homeowners Association, I have kept my neighborhood informed of the city internal communications, city/KDOT communications, research on roundabout safety and roundabout-related activities of other area neighborhood organizations. Nevertheless, I write this letter as a single resident.

In both the risk consulting and cycling activities, my mantra is: "***First, Do No Harm***". Within this context, I want to focus this letter on the proposed roundabout.

SUMMARY

- The proposed design will make accidents more frequent for attentive drivers.
- The open literature does not support the locally-published opinions that a roundabout intersection interfacing an arterial, four-lane roadway with two-lane residential ones is safer.
- The open literature, in fact, suggests that multi-lane roundabout applications are more dangerous for cyclists.
- The literature cautions that statistics from single-lane roundabouts are not applicable and cannot be applied to multilane installations.
- The literature does not address the propriety of placing a roundabout on interfacing an arterial four-lane road with two-lane residential ones making this proposed installation unprecedented.
- There have been no injury accidents to motorists, pedestrians or cyclists at this intersection reducing the motivation for a 'safer' intersection for motorists.
- The minimal, incomplete traffic measurements and subsequent projections are unlikely to be accurate.
- The added cost of $350,000 for the roundabout or $500,000 for control lights does not include the cost for land acquisition from the neighborhoods and businesses opposed to this installation.

I can only conclude the ***"First, Do No Harm"*** mantra has not been invoked and this proposal is a costly answer in search of an unknown question.

Therefore, I strongly encourage you to re-consider this proposed installation and while doing so include actual safety, traffic, cost and engineering analysis. I believe you, as the Lawrence City Commission, will draw the conclusion that this is not the proper location for an experimental roundabout and that the current 4 Way Stop should remain in place after Wakarusa reconstruction.

DISCUSSION

<u>Usage</u>

At a 4 Way Stop, an attentive motorist stops, establishes eye-contact with the other motorists, pedestrians and cyclists, evaluates the situation and implements the next step in their progress. For a multi-lane roundabout, the motorist must make all of the same decisions while operating the vehicle with his/her line of sight blind to cross traffic, i.e. instead of seeing merging traffic head on, they see it through the corner of their eye while negotiating a curve at speed. For single-lane roundabouts, which I support, this is easily done. But, for multilane roundabouts into a residential street, this is not easily accomplished. The additional processing increases the risk by increasing the frequency of error. While the discussion of the multitude of impact points on 4 Way Stops v. roundabout presented to the Commission implies that the 4 Way Stops are more dangerous, that

documentation fails to account for human processing of information and decision making. In the one case, the operator is stopped before proceeding into a residential neighborhood. In the other, the operator is in a dynamic situation.

So, what is the impact on cyclists, in particular? Consider a routine event. The cyclist is traveling southbound on Wakarusa and wants to turn into their east residential neighborhood. This requires a left hand turn. By law, the cyclist is a legitimate vehicle of the road, has all the privileges and all the responsibilities. Therefore, the cyclist must move to the center lane to enter the roundabout, negotiate the inner radius then cross the through, northbound lane. The cyclist approaches the northbound cars at an acute angle out of the field of vision of the motorist who is looking nominally northeast away from the cyclist. While the blow will be glancing implied by the PowerPoint presentation to the Commission, it will be a significant injury to the cyclist. Stating that cyclists will go onto a sidewalk is contrary to the vehicle of the road law, inconsistent with the left hand turn requirements into the residential neighborhood and cannot be expected to be executed.

If there is a delivery van, school bus or large private vehicle in the northbound inner lane, the cyclist will be completely out of the sight line of the outer-lane northbound motorist. An accident here will be unavoidable and an unprecedented injury at this intersection will result.

Please keep in mind that this is largely a residential area not represented by the KDOT video and literature for installations in high commercial traffic zones. So, we must emphasize the residential use of the intersection. Day care facilities and Quail Run School are in the area. Since the city continues to support a 45 mph limit on Wakarusa, the speeds through this intersection will ***increase***, reaction times available will ***decrease*** and ***frequency***, therefore, of poor decisions will ***increase***, resulting in higher risk. While a 4 Way Stop is certainly a risk challenge to an inattentive motorist, the arterial roundabout feeding a residential neighborhood with children, pedestrians and cyclists will increase the risk of accident caused by an attentive motorist and do nothing to reduce the risk from an inattentive one.

First, Do No Harm.

Literature

The following is a representative excerpt from the literature. Much of the following is taken directly verbatim from the citations.

The state of Florida has reported on roundabouts (http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_SF/FDOT_824.pdf 11/27/13). The highlighting in this citation and others is mine. Among the conclusions drawn from this study are the following:

- The introduction of roundabouts leads to a slight reduction in pedestrian casualty accidents, yet increases bicycle casualty accidents.
- Casualty accident rates for motorists are reduced by 68% following the installation of roundabouts.

- Roundabouts effectively reduce right-angled accidents by 87%, with a 47% reduction in overall reported accidents.
- Bicycle accident rates at roundabouts are 15 times those of cars, and pedestrian accident rates are equivalent to those of cars
- Accident studies found that multi-lane roundabouts are more stressful to bicyclists than single-lane roundabouts.
- In comparison, multilane roundabouts are not as safe as single-lane roundabouts, since pedestrians have to cross a larger distance. In most situations, single-lane roundabouts provide a satisfactory level of safety for bicyclists compared to other types of controlled intersections. This is due to the lower speeds of vehicles, as well as fewer conflict points, compared to multi-lane roundabouts or other types of intersections.

Since the Wakarusa intersection handles through and residential traffic, the opinion that this installation is safer than the current 4 Way Stop is tenuous. Further, since there haven't been injuries, much less casualties, the statistics have no meaning.

The Insurance Institute of Highway Safety findings find that increased safety for multi-lane roundabouts is contradictory (http://www.iihs.org/iihs/topics/t/roundabouts/qanda) stating most U.S. studies have focused primarily on single-lane roundabouts. When included, two-lane roundabouts have been associated with smaller reductions in crashes compared with single-lane roundabouts[1, 2, 3] or with increases in crashes[4].

Therefore, the smaller reduction in accidents when there is already a statistical body developed by the city showing no injury accidents does not warrant the addition of the roundabout.

Further, the US DOT addressed the impact on cyclists with inconclusive results. So did the Transportation Research Board. What most studies have found is that there can be an increase in bike crashes at roundabouts compared to traditional signal intersections. This generally is because of difficulty motorists entering or exiting the roundabout have in seeing the bicyclist already in the roundabout. Design guidelines from Federal Highway Administration recommend that cyclists take the lane and there not be cyclist-only lanes in the roundabouts. (http://www.activetrans.org/blog/dpersky/roundabouts-bike-and-ped-friendly 11/27/13)

In summary, single-lane roundabouts, in particular, can work well for most cyclists and pedestrians if properly designed and implemented. Lower operating speeds compared to conventional intersections reduce the overall severity of crashes that do occur. Multi-lane roundabouts that would be found on multi-lane roadways are not going to make these corridors work better for cyclists or pedestrians, but their lower operating speeds have some advantage. (http://www.bicyclinginfo.org/faqs/answer.cfm?id=3454 11/27/13)

However, in the proposed installation, speeds will be higher than the present 4 Way Stop speeds because a satisfactory 4 Way Stop requiring 0 mph is being replaced on a road with a 45 mph speed limit and an expected 15-20 mph speed through it.

Perhaps another way to look at this, if there is a bicyclist fatality at this intersection because of the roundabout installation or usage, the approximate, average cost is $4,500,000 according to the National Safety Council. Looking at this another way, if the rate of accidents is 15 times higher for cyclists at a multi-lane roundabout in a residential neighborhood, the likelihood is that accidents will increase for bicyclists. And, if this likelihood is known in advance by the city, will the family of the deceased have legal recourse exposing the city? If so, is the $350,000 increase in cost now for this installation in anticipation of a traffic need ten years from now cost effective? (http://www.nsc.org/news_resources/injury_and_death_statistics/Pages/EstimatingtheCostsofUnintentionalInjuries.aspx 03/04/15)

Motivation

Traffic measurements were done on a single day during peak usage. This is not representative of the use of the intersection and can hardly be used as a statistical or engineering basis for the intersection modification and cost.

Secondly, any statistical or historical usage extrapolated to the future will have a large uncertainty. Currently, motorists wishing to access campus use Wakarusa to reach Bob Billings Parkway, the principal access to campus. Shortly, the new Bob Billings Parkway/K-10 interchange will likely unload that traffic from Wakarusa. Further, some of the historic growth must be due to the development of the neighborhoods surrounding this intersection. The neighborhoods have matured and growth has decreased.

Third, as I understand the documents, the roundabout will not be justified based on projected traffic growth for ten years. Wakarusa hardly resembles the environment that it had ten years earlier.

Is the city that confident in its traffic projections to conclude that the estimates are accurate ten years from now?

Design

The literature from KDOT suggests that the width of the lanes must be far larger than the widths proposed. Therefore, the roundabout radius must be larger at least four times the current width not accounting for the sidewalks, which according to KDOT must be angled away from the road (not running concentrically) to minimize pedestrian/motorist accidents. It seems, therefore, that the design proposed to the Commission does not meet KDOT guidelines, will have significantly greater impact on the neighborhood in land acquisition and character, and bring traffic closer to the corner houses than that proposed.

Since KDOT has asked for more information from the city, will the city be modifying the design infringing more on the neighborhoods and dentist offices than what was shown on the design last November?

Cost

This Commission accepted an increase in budget of $350,000 for the roundabout comparing it to an alternative prepared by staff requiring $500,000 for a signaled intersection with turn lanes. Traffic won't warrant changing for ten years if the projections are correct. Does one conclude that the status quo is $0 additional cost which traffic fully justifies now? Neither of these budget increases addressed the land acquisition, legal costs, utility movement, etc. which is not required for the status quo. Is this a good use of tax payer money when safety will not be improved and traffic doesn't justify it?

CONCLUSION

"First, Do No Harm." This roundabout interfacing an arterial four-lane road and residential two-lane roads is unprecedented. Safety will not be increased and will deteriorate for one set of particularly vulnerable users. Those users cannot alter their choice of streets as they live in the neighborhoods. Motor traffic doesn't warrant the change at the intersection. The accident statistics at this intersection don't warrant the change. The current use statistics are anecdotal. The projections are likely to be inaccurate. The cost appears to be under-estimated. And, the neighborhoods are negatively affected by moving traffic close to houses, increasing direct impact.

I strongly encourage you to re-visit this decision and retain the 4 Way Stop for the benefit of ALL users.

Sincerely,

SENT VIA EMAIL 03/05/14
Resident, Normandy Park Neighborhood

cc: Mr. Dave Corliss, dcorliss@lawrenceks.org
Mr. Chuck Soules, csoules@lawrenceks.org
Mr. Nick Voss, nvoss@lawrenceks.org

Carolyn Hicks

From: Carl Gallagher <cgall311@gmail.com>
Sent: Thursday, March 27, 2014 3:58 PM
To: Kenneth Mishler; Carl Gallagher; fhwrightiv; paul.popiel; gratefulgraham; fishgmcb; anderguardk; brown.jayme; as.ferguson; my_moms_farm; jsoddie; lgay; themosiers; nedlit4@gmail.com; Colin S. 'Chip' Howat; drbrittingham@legendsdrivedental.com; ranjbarorthodontics@yahoo.com
Cc: mdever@sunflower.com; mikeamyx515@hotmail.com; schummfoods@gmail.com; terry Riordan; Jeremy Farmer; Charles Soules; Nick Voss; David L. Corliss
Subject: Re: Roundabout news

I am still trying learn Google - sorry about the premature send.

1. Now - get utilities to move their stuff and acquire property.
2. May - put out for bids
3. June - begin work - utilities must move their stuff and they must have acquired property.
4. Complete by first day of school.

Chip and I think this is an optimistic schedule.

Additional facts learned today:

1. The sidewalk around the roundabout will abut the curb. In other words, the 2 1/2 feet of grass now between the sidewalk and street will no longer exist. Chip told Chuck Soules that the lack of separation between curb and sidewalk is violates KDOT's requirements. Chuck Soules agreed but said this is the City's project and they do not have to meet KDOT standards.

This scares the heck out of me given all the the tire marks one sees from curb jumping at the other roundabouts. Even the dreaded (by some) Monterrey and Harvard roundabout has about 2 1/2 to 3 feet of separation between sidewalk and curb. Our kids went to Stepping Stones and standard summertime procedure is to walk the kids from Stepping Stones to the playground at Quail Run or down the Nature trail that begins behind the Normandy Park neighborhood. They were doing it as recently as last summer. With Free State now having ninth graders I also see more teens on foot along Wakarusa than in the old 10-12 grade configuration.

2. Nick Voss has never designed a roundabout with a four lane like Wakarusa merging with two lanes such as Legends and Inverness. Neither has Chuck Soules, the Director of Public Works, or David Woolsey, the City traffic engineer. Nick wasn't sure if Dave Cronin had - maybe when he was with KDOT. I assume that if this were true Dave Cronin would have told the City Commission about it.

By chance a T bus rolled by which gave me the opportunity to show that large vehicles block the sight of vehicles entering from Inverness as well as vehicles in the left lane traveling in the same direction as the bus. I told them I was afraid someone would get hurt. Scott Wagner said that was not the City's intent. I like to think that no one intends to hurt anyone else while driving around in their car. I think we should minimize the risk of someone being hurt. As you all know, I believe this roundabout increases the risk of someone being hurt through no fault of their own or another driver.

3. While KDOT will review the design it will offer no opinion about the propriety of the location of the safety aspects of the design. Chuck confirmed this twice to Chip and me. This means that the City is completely responsible for the design of this roundabout.

4. I asked about lighting the roundabout. Chuck isn't really sure but he thinks it will be illuminated with decorative lighting in the circle portion of the roundabout.

There may be a new wrinkle, like the Billings Parkway/K-10 interchange, which may affect traffic at this intersection assuming the Journal Worlds report on changing attendance areas is correct. http://www2.ljworld.com/news/2014/mar/24/some-school-boundaries-could-shift-2015/ Currently, the eastern boundary of Langston Hughes attendance area, south of 6th/US 40, is Wakarusa. If some of the Langston Hughes student population is moved to Quail Run, it is likely that the neighborhood west of Wakarusa off Legends Drive will be the area moved. This will change the traffic pattern during peak school hours. Here is a map of attendance areas available on the USD 497 web site.http://www.usd497.org/documents/USD497_School_District_WEB_Map_2013.pdf

For persons - and school buses - traveling to and from Quail Run via Legends and Inverness this means that to continue eastbound to Quail Run from Legends or westbound to the neighborhood one must cut across four lanes of traffic with the line of sight for any vehicles traveling southbound in the left obscured by any vehicles traveling southbound on Wakarusa in the right lane. If these two lanes are negotiated safely, the driver then must cross two lanes of northbound traffic, with the line of sight for any vehicles traveling north on Wakarusa in the right lane obscured by any vehicles traveling north on Wakarusa in the left lane. It is extremely unlikely that there will be no traffic on Wakarusa during school opening and closing times. And in a roundabout, traffic doesn't stop if the driver cannot see that another vehicle has already entered the roundabout.

The City remains unresponsive on my request for reconsideration. If I hear anything, I will let you know.

Regards Carl

On Thu, Mar 27, 2014 at 2:36 PM, Carl Gallagher <cgall311@gmail.com> wrote:
Hello all - It would if I would get a straight answer, or at least a consistent answer, from public works. Attached is the latest map received today when representatives of Public works (Chuck Soules and Nick Voss), City Legal (Scott Wagner) and the appraisers (Ron Aul and Deedra Odell) arrived to provide information about the project and to discuss the next steps. It is closer to what Chuck Soules and Nick Voss (public works) told Ken and me on February 27 rather than what the sent me two weeks ago, which wasn't what they had originally. The only caveat is Chuck and Scott Wagner telling me this was it - and then adding "probably." That is what I wrote in the upper right of the document. FYI Chip Howat, the president of Normandy Park HOA, who is also an engineer who analyzes process and risk for clients attended at my invitation.

I was not given an appraisal value which is not surprising given that the appraiser wasn't sure what plantings etc. wpould be taken and, perhaps, exactly what property will be taken. They say they will simply move the fence back to the point behind what they are taking as right of way. wit todays map that is between three and four feet back from the fence's current location. The parts of the fence that will be moved are the two sections that are diagonal to the fence running north and south along Wakarusa. The first two sections at the south end of the fence will also become part of the diagonal rather than run north and south. Probably.

They say that the roundabout will be lower on our corner than the current road so they will build a retaining wall if we would like. I told them that such a retaining wall may very well slow down a vehicle coming through the fence enough that it won't enter our sunroom. So, if this roundabout happens, I told them to go with the retaining wall.

The timetable is:
1.

On Wed, Mar 12, 2014 at 2:36 PM, Carl Gallagher <cgall311@gmail.com> wrote:
Got this in the mail today. Maybe it means reconsideration is out of the question. If you compare the original map they sent, also attached, it now goes inside our fence rather than just along it. I am not surprised given that Chuck Soules and Nick Voss assured be that along the fence line was all that would be taken. Notice they are also moving the sidewalk along Wakarusa east onto all the property lines backing onto Wakarusa.

Carl Gallagher

1129 Williamsburg Court

Lawrence, Kansas 66049

Cgall311@gmail.com

March 3, 2014

To: Mayor Mike Dever, mdever@sunflower.com

Mike Amyx, mikeamyx515@hotmail.com

Jeremy Farmer, voteyourselfafarmer@gmail.com

Dr. Terry Riordan, riordan346@gmail.com

Bob Schumm, schummfoods@gmail.com

Re: Wakarusa/Inverness/Legends Roundabout

Dear Commissioners:

My wife and I live at 11 29 Williamsburg Court which sits at the northeast corner of Wakarusa and Inverness. We moved to our house at the beginning of October, 1991. If installed, the roundabout will take up some portion of our property for which we will be compensated monetarily. In addition, we will have less lawn to mow. We consider both of these occurrences to be favorable. On the other hand, we do have serious concerns about safety of the proposed roundabout which more than counterbalances our personal favorability. I have reviewed that City Commission minutes and documents I received from the City pursuant to my Kansas Open Records Act (KORA) request. After review, my major concern is safety for the following, in order of priority: 1. pedestrians; 2. bicyclists; 3. motorists.

BACKGROUND

During late October, 2013, I received a letter with a color photograph of the options which explained that the options for the intersection were a four way stop, traffic lights or a roundabout. The options would be discussed on the November 9, 2013 meeting. The staff preference was for the roundabout because roundabouts are "safer" than other intersection options.

I agree that the data shows that roundabouts are safer in the most general terms. However, as with virtually all overgeneralizations, it is not true that all roundabouts are safer. Whether a roundabout is safer depends, among other things, on design, lines of sight and the types of roads that feed the roundabout. Maryland and Florida have published guidelines concerning roundabouts according to a study by the National Cooperative Highway Research Program (NCHRP). I attach the link for your perusal. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_264.pdf. It appears both states heavily relied on the Australian experience with roundabouts in preparing their guidelines. Parenthetically, I note that in 2011the worst intersection for accidents in South Australia was at the Britannia Roundabout. http://www.adelaidenow.com.au/news/south-australia/britannia-roundabout-was-the-worst-intersection-for-crashes-in-2011/story-e6frea83-1226528076394. This alone disproves the theorem that all roundabouts are safer. It also appears from this article that once the roundabout has been installed in error, the taxpayer cost of remediation is extreme. In my opinion, the City must be absolutely certain this is the correct configuration for this intersection before going this route.

Please note that both Maryland and Florida recognize that there are inappropriate sites for roundabouts and recommend that the SIDRA software program be used in the consideration and design of a roundabout. If the City consulted with these design guidelines or used the SIDRA software in considering or designing the roundabout at Wakarusa/Inverness/Legends it is not shown in any of the documentation I received in response to my KORA request.

In making inquiries at the informational meeting, I learned that City's sole traffic count used in the analysis was taken during afternoon peak hours on October 1, 2013. This was consistent with the KORA materials provided. The specific hours were unknown though I was told the Kansas Department of Transportation had traffic counts for Wakarusa. Staff did not know where the traffic counts on Wakarusa were taken. I went to KDOT's web site and reviewed that traffic count map. Here is the link. http://www.ksdot.org/burtransplan/maps/CountMaps/Cities/lawren13.PDF. This map was published during August 2013. I am unable to learn when these traffic counts were taken. Zooming in on Wakarusa between 6th Street and Billings Parkway, it appears there is no traffic count for the Wakarusa/Inverness/Legends intersection. From the emails between KDOT and the City, KDOT asked for information regarding traffic counts at this intersection. I attach these emails. Thus, it appears we have limited information on the traffic actually using the intersection.

When I asked about the grade of Inverness in conjunction the effect on line of sight for north bound traffic on Wakarusa and

east bound traffic on Inverness, I was told that KDOT would have to approve the plans. As you should know, the approach for westbound traffic on Inverness is uphill. I was also told the City intended to keep most of the evergreen trees that line Wakarusa along the Normandy Park neighborhood. Between the grade of Inverness approaching the intersection and the trees along Wakarusa, there will be minimal lines of sight for both northbound Wakarusa and westbound Inverness vis-à-vis each other.

I was told that the 45 mile per hour speed limit on Wakarusa would remain in place though it is anticipated that the roundabout will cause drivers to reduce speeds to 15 to 25 mph. There were no animations prepared to anticipate possible scenarios where a major arterial, multi-lane road where there is a volume of commercial vehicles and passenger vehicles bisects a single lane road. I was told the design called for 15 foot lanes traversing the roundabout. I was told there was no cost estimate done for land acquisition though it was thought to be "not much."

PROBLEM

The problem I perceive is the installation of a roundabout at an intersection of a major arterial roadway (Wakarusa) with secondary or collector roads (Inverness and Legends). Complicating the issue is Quail Run School to the east on Inverness and the Montessori school, Dance Gallery and Lawrence Gymnastics Academy facilities to the east on Legends as well as the T bus stops on the northwest corner of Wakarusa and Legends and on the southeast corner of Wakarusa and Inverness. These facilities cause traffic counts to vary depending on the time of day and the activities at these facilities. Anecdotally, it has been my observation that at certain times of day the traffic on either Inverness or Legends is greater than on Wakarusa. This is why a more traffic count that covered greater periods of time over a longer period of time would give a better indication of the propriety of a roundabout in this location.

In addition to the schools on Legends and Inverness, there is a Lawrence/Douglas County Fire and Ambulance Service facility on Wakarusa near Clinton Parkway. The Pioneer Ridge assisted living facility at Harvard and Wakarusa. There appears to be a number of calls from Pioneer Ridge serviced by that ambulance facility. Thankfully, there appear to be fewer fire calls from that facility traveling north on Wakarusa though if the fire rigs are diesel powered the firefighters must take the rigs on the road periodically so that the engines will fire up immediately in case of an emergency.

Both north and south of the intersection are offices and the Stepping Stones day care is north of the intersection. All these facilities will be affected by the change from a four way stop at this intersection to a continuous flow of traffic on Wakarusa.

More importantly, there is no information regarding pedestrian or bicycle traffic at this intersection. Again, anecdotally, my observation in the twenty-two plus years of living at the intersection has been that there are a good number of walkers and runners traversing this intersection and their numbers increase each year. There is a lesser but still fair and increasing number of bicyclists crossing the intersection. I drive, bicycle and walk along Wakarusa regularly.

I have also seen the types of vehicles that use all three streets. Along north and southbound Wakarusa there passenger cars, vans, panel trucks, box type delivery vehicles, school buses and City trash trucks. Along Inverness and Legends, the vehicles tend to be passenger with school buses and vans during opening and dismissal hours for the schools and when there are activities at Dance Gallery and Lawrence Gymnastics Academy. Frequently there are trucks traveling eastbound on Inverness to make deliveries to Quail Run School. Viewing these many type of vehicles is what causes me major concern about the roundabout.

The background information, or lack of information, about roundabouts provided to the Commissioners is problematic. The data concerning safety of roundabouts are largely based on one lane roundabouts rather than roundabouts similar to that proposed at this intersection. I am unable to find any information that staff provided to the Commission concerning where it is inappropriate to place a roundabout. The NCHRP study (link provided above) sets out where a roundabout may be inappropriate at page 42. Factors include whether there is a flat plateau for the roundabout. This affects the unanswered question of the grade and vision obstruction along northbound Wakarusa and westbound Inverness.

Another example is where there are heavy traffic flows on one road and lighter flows on the other. The absence of information of traffic flow on each road leaves this question unanswered except by speculation.

Presence of bicycles and pedestrian are also an issue to be analyzed. The literature suggests that where there is pedestrian and bicycle traffic on a multi-lane roundabout, safety issues can be resolved through pedestrian activated crossing signals farther away from the roundabout. This solution is antithetical to one of the major goals of the roundabout, which from the KORA materials, is to keep traffic flowing. Further, such a signal which allows sufficient time for a pedestrian to cross four lanes of traffic is likely to clog the roundabout itself.

Given the use of Wakarusa of semi-trucks which, at a minimum may be described as infrequent, it appears from the KDOT material that the lane width for this roundabout with the minimum of 150 foot diameter should be 32 feet where there is infrequent semi traffic. Here is the link:

http://www.ksdot.org/burtrafficeng/Roundabouts/Roundabout_Guide/Chapter_6_Geometric_Design.pdf. Page 77. If the 15 foot lane width design information is correct, the lane width is inadequate. I was also told that any design was subject to KDOT approval. I was also told that no more property would be taken than was shown in the City's mailings. If wider lanes are required after KDOT review, it appears more property will be taken. As of the beginning of February, 2014, KDOT expressed concern with the design because there were "a lot of details missing." These emailed concerns are found in the attachment.

SCENARIOS

Imagine that a box truck delivery vehicle is northbound in the right lane on Wakarusa approaching the roundabout. Also northbound in left lane some short distance behind the box truck is a passenger vehicle. A pedestrian wishing to board a T bus which will be southbound on Wakarusa is on the north side of the roundabout. The box truck can see the pedestrian and slows to a stop as the rules of the road require. Keep in mind that because the box truck will have slowed to enter the roundabout the slowing process may not initially include tapping the brakes as it begins to clear the roundabout. The passenger vehicle continues through the roundabout with the box truck blocking its view of the pedestrian who is entering the roadway to catch his bus. At twenty miles per hour on a dry pavement, which is the estimated speed of a vehicle traversing the roundabout according to City staff and data generally available concerning roundabouts, the distance traveled allowing for driver recognition that a pedestrian is in the roadway and then application of the brakes, the distance traveled is approximately 40 feet. In this scenario, the pedestrian is likely to get hurt.

Imagine that a passenger vehicle is traveling southbound on Wakarusa on its way to Quail Run School. Imagine that the box truck is northbound in the left lane to make a delivery to the office park located on the west side of Wakarusa north of the roundabout. The passenger vehicle signals the left turn and the box truck, which is slowing as needed to enter the roundabout sees the left turn signal. As in the other scenario, a passenger vehicle is northbound on Wakarusa in the right lane. Again the northbound vehicle, though slowing to enter the roundabout, cannot see the left turning vehicle. Using the same recognition and stopping distances as in the paragraph above, a collision is likely to occur. That the accident is a sideswipe rather than a broadside will be cold comfort to the drivers who may have avoided a collision altogether had they simply been able to see one another.

You can rotate these scenarios for northbound Wakarusa turning left onto Legends, or westbound Inverness turning left onto Wakarusa or pedestrian or bicyclist trying to cross from any direction.

For your information, the state of Oregon has published a study concerning stopping sight distance and decision sight distance. This provides data on the time an average driver can observe, analyze, and decide to apply brakes. Here is the link: http://www.oregon.gov/ODOT/HWY/ACCESSMGT/docs/stopdist.pdf. This study establishes that stopping distances are longer than one might think. Likewise, you should consider the effect of the multiple sources of information with which a driver must observe, analyze and decide when entering a multi-lane roundabout converging with single lane roads with other motor vehicles, pedestrians and bicycles. Distractions are multiplied at a roundabout. For your information, here is a link to a Stanford University study on multi-tasking, specifically cell phone usage, and vehicle operation. http://www-psych.stanford.edu/~ashas/Cognition%20Textbook/chapter3.pdf. Cell phones are not the only things that cause a driver to be distracted. Simply processing the information viewed at the roundabout from multiple directions while moving causes distraction and increases the likelihood of error.

At a four way stop, the drivers who obey the law have the opportunity to see and make decisions without moving the vehicle. Courteous and attentive drivers make eye contact with one another and with pedestrians and will often signal one another. This happens more often than you might think at this intersection.

SOLUTION

In my practice of law and use of engineers as experts and consultants, I reached my own generalization: there is a difference between the thought processes of some engineers and most other folk. Some engineers look at the traffic pattern of a roundabout with a bird's eye view and in two dimensions and see a perfectly acceptable result. Other folk see the roundabout in three dimensions from the perspective of people on the ground and in their vehicles and see unacceptable results.

At the risk of offending some of my friends and neighbors, I think one lane roundabouts are excellent solutions in many areas, including residential areas such as those along Harvard Road from Monterey Way west to Wakarusa and beyond. From my own regular use of that stretch of Harvard Road, the lines of sight are good from all directions and the traffic handled through these is appropriate. Some of the roundabouts could have slightly wider lanes but the width probably either slows speed or increases business at our local tire stores. Retro-fitting a roundabout in the existing intersections undoubtedly caused some of the tight fit on Harvard Road. Multi-lane roundabouts are also appropriate in high traffic areas. I have used them in places where on and off ramps for limited access highways. They seem to work well.

Based on the scenarios that are easily imagined and the lack of data which might provide the Commission with a justifiable basis for proceeding with this roundabout, I urge you to reconsider your decision. The safety issues of the roundabout at this

location is of paramount importance. The scenarios set out are not farfetched. The type of traffic, turns and pedestrian and bicyclist crossings described occur frequently each day. There is no evidence that the Commission considered the scenarios or the lines of sight, grades of the approaches of the road or the experience of a similarly situated roundabout. Examples such as 37th and Wanamaker in Topeka or Prairie Star Parkway and Gleason Road in Lenexa are not similarly situated. They have large open space, long lines of sight and commercial facilities located or planned at all four corners. The Wakarusa roundabout is a retrofit combining a major arterial with feeder streets from largely residential areas in a compressed area with lines of sight that simply do not compare to the Topeka or Lenexa examples.

Someone described the November 26 staff presentation in support of this roundabout as "bulletproof." I do not think so. In my law practice I discourage clients from being the first to try something. In other words, it is better to have another community install a similarly situated roundabout and see how it works for that community. Then there is a basis for drawing conclusions on the relative safety of the roundabout in this location. Being the first is acceptable when there is a demonstrable problem needing an immediate solution for which there does not seem to be workable alternatives. The City should not be a guinea pig for this type of roundabout unless it has virtually no other choice. There is nothing in the material I have obtained that indicates that a pressing problem exists at this intersection that needs a roundabout solution. If one of the scenarios set out above comes to pass, we have a real problem.

Applying a cost-benefit analysis, I cannot see how being a guinea pig at this intersection provides a greater benefit than its cost. The scenarios demonstrate genuine risk to the safety of persons and property. We simply do not know what the traffic on Wakarusa between 6th Street/US 40 and Billings Parkway will be after the interchange at Billings and the South Lawrence Traffic way/K-10 is installed. Whether traffic control other than the four way stop will be needed ten years down the road is completely speculative. I also do not understand why the City wants to increase speed along Wakarusa rather than slow it down. The roundabout is not as effective as a stop sign in slowing traffic.

My primary concern is safety at this intersection. I have seen a lot of changes in the area during the past 22 plus years, some wise while others were at variance with what I thought was wise. This is the first change that makes me concerned about safety of the people who pass through the intersection and to communicate the concern to the Commission. Neither a roundabout nor traffic lights nor four way stop signs provide any protection from the inattentive driver. Under the scenarios, this roundabout creates danger that does not exist in the current configuration. Drivers, pedestrians and bicyclists may have accidents and suffer injury without being inattentive. To me, given the issues and unanswered questions outlined above, the only reasonable solution is to retain the four way stop for the foreseeable future.

For your information the City's staff has been very courteous and responsive to my inquiries about this project. I believe the staff hold a genuine belief that roundabouts are the safest intersections. As a general principle, this theorem has support. However, as with virtually all overgeneralizations, it is not always true and this roundabout is an exception to the general principle. I think that in their haste to meet the time limitations to get the next phase of the Wakarusa improvement project completed with this roundabout, in conjunction with their other duties, some analytical steps were overlooked and relevant research was not done. The result of installing this roundabout may be tragic.

Regards, Carl Gallagher

Cc: Dave Corliss, dcorliss@lawrenceks.org

Chuck Soules, csoules@lawrenceks.org

Nick Voss, nvoss@lawrenceks.org