


AGENDA

**FORT SMITH BOARD OF DIRECTORS
STUDY SESSION
MARCH 29, 2005 - 12:00 NOON
FORT SMITH PUBLIC LIBRARY
COMMUNITY ROOM**

1. Review and discussion of the North Albert Pike Project ***Continued discussion from March 8, 2005 study session***
2. Review preliminary agenda for the April 5, 2005 regular meeting

INTER-OFFICE MEMO

TO: Bill Harding, City Administrator

FROM: Laura Page, P.E. Project Engineer 

DATE: March 24, 2005

SUBJECT: Albert Pike Avenue Widening - Free Ferry Road to Grand Avenue
Project No. 00-02-C

The above project, as currently designed, involves capacity improvements to Albert Pike Avenue including major reconstruction, widening to three lanes and replacement of existing open ditches with a closed drainage installation. This project also includes the installation of traffic signals at the intersections of Free Ferry Road, Park Avenue and Kinkead Avenue. Right-of-way acquisition is complete on a third of the tracts and we have settled with property owners on about another third of the tracts.

When completed, Albert Pike will provide a much needed north-south corridor between Rogers Avenue and North "O" Street. The existing north-south corridors are at Waldron Road 3/4 mile to the east and at Greenwood Road one mile to the west of Albert Pike. Traffic counts on this section of Albert Pike have increased by a total of 10% over the past two years (see attached letter from Traffic Engineering Consultants). When coupled with the upcoming Kinkead Avenue project improvements, this will be another improved, convenient way to access the University of Arkansas Fort Smith campus.

When the project first started design, the 1991 Master Street Plan designated Albert Pike as an arterial with a 52 foot wide, four lane, pavement section within an 80 foot right-of-way. After reviewing traffic counts and projections for the street, the Engineering Department decided that only a 37 foot wide, three lane, pavement section within a 60 foot right-of-way was needed.

At the signalized intersections of Free Ferry Road, Park Avenue and Kinkead Avenue, the intersecting streets were designed showing the roadways to be widened to include left turn lanes. The length of these left turn lanes were designed to accommodate the current and projected turning volumes while also providing adequate stacking room to prevent blockage of the turn lanes by the higher volume of the adjacent shared thru/right turn lane. The longer length of the left turn lanes would also prevent blockage of the shared thru/right turn lane by the left turn traffic during higher peak volumes.

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At the request of the Board, the Engineering Department conducted another public meeting on Thursday, March 17, 2005 to gather input from concerned citizens. During that meeting, and from e-mails to the City's website, we have received twenty-six comments from citizens with the majority expressing the need for improvements to Albert Pike. Copies of the comments are attached.

The Board of Directors has requested that the Engineering Department revisit the need for the center left turn lane along Albert Pike and the left turn lanes at the signalized intersections along Albert Pike at Free Ferry Road, Park Avenue and Kinkead Avenue. Attached is a letter from the City's traffic engineering consultant, Steve Hofener of TEC, which addresses the signals and left turn lanes.

The Board of Directors also requested that the Engineering Department look at ways to minimize the removal of the mature trees existing in the neighborhood. Normally, all trees that are within the new or existing right-of-way and within the temporary construction easement of a project can be removed. Previously, the plans were revised to indicate that 7 trees within the right-of-way and 32 trees within the temporary construction easement were not to be disturbed during construction. The current design shows a total of 72 trees to be removed, of which 10 are the 35" diameter or larger trees.

Four options have been developed that vary the road width and amount of left turn lanes provided which affects the amount of tree removal. In some of the options, we have also looked at jogging the waterline into utility easements in some areas to avoid groups of mature trees. These options are discussed below. Additional options to improve aesthetics of the roadway are also considered at the end of the memo.

OPTION 1 - 37' roadway (3-lane) throughout with shorter left turn pockets at the signalized intersections

Option 1 follows the current design with the exception that those left turn lanes at the signalized intersections which exceeded the minimum design length of 100 feet have been reduced to the minimum. This option reduced the left turn pockets on both legs of Free Ferry Road by 75 feet and on the westbound leg of Park Avenue by 25 feet. All other legs of the intersections remained the same at the minimum length of 100 feet.

- PROS: - Roadway design meets the minimum pavement section width for a major collector street.
- Center left turn lane will assist property owners in, and provide a safe haven during, ingress and egress to their properties fronting Albert Pike. During the public meeting, numerous property owners pointed out this feature as a positive effect of the project.
 - Traffic making left turns to the side streets and driveways will not block through traffic while waiting on gaps in oncoming traffic.
 - Enclosed storm drainage system improves safety and aesthetics of the roadway.
 - Traffic signals improve the safety and flow of traffic.
 - Saves one 48" magnolia, plus a portion of the screening shrubs, on the west end and a 36" oak on the east end of Free Ferry. Saves one 24" tree on Park Avenue.
 - Avoids the relocation of the brick gateway at 4000 Free Ferry.
- CONS: - During peak traffic hours, Free Ferry Road will likely experience some back-up due to inadequate left- turn lane storage.
- Highest cost of the four options.

As an addition to this option, the Board can also consider an aesthetic improvement to portions of the center turn lane. In numerous cities where landscaping is not desired, concrete or brick pavers, stamped concrete, or other stone material has been installed in the median of roadways to provide an upgraded appearance to a roadway. These medians can still be driven on for use as a safe haven for left turns and driveway access but provide a visual barrier that is more aesthetically pleasing than plain asphalt concrete.

**OPTION 2 - 37' roadway (3-lane)at signalized intersections
with 32' roadway (2-lane) in between**

This option narrows the existing roadway design from the full three lane 37' wide major collector width to the two lane 32' wide curbed residential collector width between the signalized intersections. It also includes the reduced turn lanes on Free Ferry and Park included in Option 1. Curb and gutter, sidewalks and enclosed storm drainage system are still provided throughout the project.

- PROS: - Enclosed storm drainage system improves safety and aesthetics of the roadway.
- Traffic signals improve the safety and flow of traffic.
 - Widens the grass strip between the curb and the sidewalk.
 - As an alternative to widening the grass strip, we can increase the yard size on ten houses that under the current design have the sidewalk within 25' of the house.
 - Reduces the number of trees to be removed by approximately fifteen, five of which are the 35" or larger trees. This number includes those shown as saved in Option 1.
 - With further adjustment of utility lines and sidewalks, this option will also save five more trees, two of which are greater than 35" in diameter, if the property owners are willing to have a utility easement behind the right-of-way.
 - One more 48" diameter tree can be saved, north of Park Avenue, if all the sidewalk is deleted on the east side of the road.
- CONS: - Roadway between the intersections would not meet the minimum pavement section width for a major collector street.
- There will not be a center left turn lane to assist property owners in, and provide a safe haven during, ingress and egress to their properties fronting Albert Pike.
During the public meeting, numerous property owners pointed out this feature as a positive effect of the project.
 - Traffic making left turns to the side streets and driveways will block through traffic while waiting on gaps in oncoming traffic.
 - Significant redesign will be required which would delay the project 3-6 months.
 - Second most costly of the options.

Removal of the sidewalk on the east side of the roadway, as alternative to this option, decreases the number of trees to be removed by only the one mentioned above since the impact of the utility trenching will still remain. Removal of the sidewalk would increase the perceived yard area of some of the properties along the east side.

**OPTION 3 - 3-lane 37' roadway at signalized intersections
with overlay of existing street in between**

This option improves the existing roadway to the full three lane 37' wide major collector width with curb and gutter and enclosed storm drainage at the three signalized intersections only. It also includes the reduced turn lanes on Free Ferry and Park included in Option 1. The remaining existing street in between the intersections will be overlaid without any improvements to the ditches, replacement of the utilities, or addition of sidewalk on either side.

- PROS: - Traffic signals improve the safety and flow of traffic.
- Reduces the number of trees to be removed by thirty-five, eight of which are the 35" or larger trees. This number includes those shown as saved in Option 1 & 2.
 - Thirty-one properties will remain in same condition as before the project.
- CONS: - Roadway between the intersections would not meet the minimum pavement section width for a major collector street.
- There will not be a center left turn lane to assist property owners in, and provide a safe haven during, ingress and egress to their properties fronting Albert Pike. During the public meeting, numerous property owners pointed out this feature as a positive effect of the project.
 - Traffic making left turns to the side streets and driveways will block through traffic while waiting on gaps in oncoming traffic.
 - Ditches along Albert Pike will not be improved and replaced with storm drainage system except at the intersections. This was a desired improvement expressed by some property owners during the public meeting and other contact.
 - Existing older waterline system will be replaced only at the intersections.
 - Significant redesign will be required which would delay the project 2 - 4 months.

OPTION 4 - Overlay of existing street and keep intersections as 4-way stops

This option converts the project from a capacity improvement project to a maintenance project with only an overlay of the roadway being accomplished.

- PROS: -
- No trees are removed from the project.
 - No properties will be affected by project.
 - Lowest cost of the options.
 - Shortest construction time and least impact during construction
- CONS: -
- None of the roadway would not meet the minimum pavement section width for a major collector street.
 - There will not be any capacity improvements to the roadway system, intersections, or any additional north-south corridor provided in this area.
 - The planned improvements to Kinkead Avenue, from Albert Pike to No. 48th Street, will result in a curbed 32' roadway being reduced down to a 22' estate style street at the intersection of Albert Pike.
 - High accident intersections will continue to be a problem.
 - There will not be a center left turn lane to assist property owners in, and provide a safe haven during, ingress and egress to their properties fronting Albert Pike. During the public meeting, numerous property owners pointed out this feature as a positive effect of the project.
 - Traffic making left turns to the side streets and driveways will block through traffic while waiting on gaps in approaching traffic.
 - Ditches along Albert Pike will remain open.
 - Existing older waterline system will not be replaced at all.
 - OG&E has already spent over \$75,000 in transmission line materials and engineering that have already been ordered and delivered based upon our signed franchise relocation agreement. The City may be obligated to pay these costs since these materials are special order and probably cannot be reused elsewhere.

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Exhibits for Options 1 thru 3, which will be presented at the study session, will be on high-resolution aerial photo images. They're not included in the Board packet because of the large size and lengthy printing time. They will be available for review at the Engineering Department beginning Monday at noon and at the study session by 11:30 Tuesday. The designs shown for the options are conceptual designs only. The actual affect on properties and trees may change as the designs are finalized when an option is selected.

In line with the desires of the majority of citizens who commented on the project, and in order to provide the needed north-south corridor shown on the Master Street Plan, my recommendation is that we proceed with the project either as currently designed or using Option No. 1. This will provide the needed level of service for motorists currently, and in the future, using Albert Pike between Rogers Avenue and Grand Avenue. I do not recommend that Option 4 be selected since it does nothing to improve road safety or traffic flow.

AESTHETICS

There are three options that the Board of Directors can elect to help improve the aesthetics of the neighborhood after construction. These options include the decorative pavement in the median center lane addressed under Option 1, the relocation of aerial utility line crossings underground, and the replanting of trees and landscaping in available areas of the right-of-way behind the curb.

1. DECORATIVE MEDIAN PAVEMENT - There is approximately 2700 LF of 12 foot wide center turn lane that can have decorative pavement installed. This decorative pavement can be constructed of concrete or brick pavers, stamped concrete and other similar stone material. This option has been used in numerous cities of the south and southwest where landscaped medians are not feasible.

2. UNDERGROUND UTILITY CROSSINGS. Currently, there are approximately 33 aerial power and telephone lines that cross Albert Pike between Grand Avenue and Free Ferry Road. The majority of these lines are individual service lines to the buildings along the roadway or are distribution lines down alleys.

Under the current design for relocation of their facilities, Oklahoma Gas & Electric would have approximately 16 aerial power lines that cross Albert Pike, not including their transmission line crossing at Park Avenue. Approximately twelve of these lines can be replaced with underground crossings at the estimated cost of \$36,075 over their current estimate of \$164,000 to relocate their distribution facilities. The three major distribution crossings at the intersections of Grand Avenue, Park Avenue and Free Ferry Road, plus one crossing to an alley between Alabama Avenue and Hardie Avenue, will have to remain as an overhead crossing.

Under the current design for relocation of their facilities to accommodate the roadway project, all except one aerial telephone line will be replaced with an underground crossing. Southwest Bell Telephone has estimated that it will cost an additional \$1,500 over the original estimate of \$135,955 for which we have a signed franchise relocation agreement.

3. REPLACEMENT OF LANDSCAPING. Due to the location of utilities both overhead and underground, it is not feasible to replant trees within the right-of-way except at one location between Kinkead and Grand Avenue. Trees could be replanted outside the right-of-way on those four properties acquired by the City or on other properties with permission of the owners.

Low growing shrubs and plants whose root systems would not damage the underground utilities can be planted within the green space between the sidewalk and curb as long as visibility for vehicles exiting side streets and driveways is not impaired.

Selection of the decorative median pavement only applies if the Board elects to use either the original design or Option 1 of the roadway design.

The decision to relocate utility crossings underground is needed if the Board elects to use either the original design, Option 1, Option 2, and possibly Option 3 of the roadway design.

The decision to replace landscaping mostly applies to the original design or Options 1 and 2 of the roadway design. If Options 3 or 4 of the roadway design are selected then only the decision to plant trees in the now vacant lots is required.

TEC TRAFFIC ENGINEERING CONSULTANTS

March 23, 2005

Mr. Stan Snodgrass
City of Fort Smith
P.O. Box 1908
623 Garrison Ave.
Fort Smith, AR 72901

Dear Stan:

I have evaluated the traffic data for the intersections on Albert Pike. In 2001, TEC conducted traffic counts along Albert Pike and at the intersections of Albert Pike and Free Ferry, Albert Pike and Park, and Albert Pike and Kinkead. Additional counts were taken in 2003. The most recent counts were conducted March 14 & 15, 2005.

Daily Traffic Volumes

Comparing the 24 hour traffic volumes, the traffic on Albert Pike has increased as follows:

Location	2003 (VPD)	2005 (VPD)
North of Kinkead	7,000	8,000
Between Park and Free Ferry	7,300	7,900

This is a growth rate of 5 % per year which is high. The number of north/south continuous routes in Ft Smith is limited. The traffic volumes and increase in traffic on Albert Pike reflects the need for north/south routes.

The daily traffic on Free Ferry east of Albert Pike increased from 5,800 vehicles per day to 6,200 vehicles per day or a 3.5% per year growth rate. Traffic on Park increased slightly and the traffic on Kinkead was slightly less.

A general rule of thumb based on capacity is when the daily traffic approaches 7,000 to 7,500 vehicles per day, consideration is given to widening a roadway from two lanes to four lanes. This criteria is used by many agencies including the Arkansas Highway and Transportation Department. Four lanes is not being proposed on Albert Pike, but the daily traffic supports the

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need to increase the capacity of the roadway by adding traffic signals and left turn lanes at the controlled intersections (Free Ferry, Park and Kinkead).

Crash Data

The city recently completed the citywide 2004 High Accident Location Summary. The intersections with the highest crash rates were identified. All intersections with 5 or more crashes in a year were listed. For 2004 there were 105 intersections with 5 or more crashes. The first ranking was the crash rate for intersections based on only right angle collisions and left turn collisions. This ranking identifies intersections where there may be a need to change the traffic control, i.e change from two way stop signs to four way stop signs, or from 4 way stop signs to traffic signals. Albert Pike and Kinkead is 7th on the list. Albert Pike and Free Ferry is 9th on the list out of 105 intersections. Right angle and left turn crashes at 4 way stop locations is unusual. This is in indication that the 4-way stops are not adequate to handle the traffic demand.

A second ranking was the crash rates based on all types of crashes. The intersections of Albert Pike and Free Ferry, Albert Pike and Kinkead, and Albert Pike and Park all were in the top 30 intersections. Again, this is of particular note as generally four way stop signs have the fewest crashes.

Alternatives

The decision to leave Albert Pike as is or to widen it, has to strike a balance on the impacts to the community, and the impacts to the surrounding property owners. From a safety and traffic standpoint there are many considerations in the decision process.

As stated above, there is a need for additional north/south capacity in Ft Smith. However, widening of Albert Pike cannot be justified solely on a capacity basis. If a decision is made not to widen Albert Pike, the traffic volumes can be expected to continue to grow until they reach a level where there are longer delays. The additional traffic will find another route. Widening or not widening of Albert Pike will not influence the demand and growth in traffic as this is a function of the development of the city. There is a substantial improvement to the flow of traffic and the safety at the three intersections by widening for left turn bays and installing traffic signals.

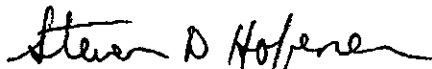
Secondly, it is recommended that traffic signals not be installed at the intersections unless widening for left turn bays is also constructed. Four way stops assign equal right of way to all vehicles. If a traffic signal is installed without widening, one left turning vehicle will hold up all through traffic until an adequate gap is found in the opposing traffic to make the left turn. If there is an opposing left turn vehicle, confusion often results. Additional crashes can result by someone passing a left turning vehicle and an opposing left turn being made in front of the passing vehicle. Without widening, it is recommended the intersections remain as four way stops.

Widening the intersections without the installation of traffic signals can also increase crashes. When vehicles have to turn across multiple lanes, crashes often increase. The widening in and of itself will create pressure to signalize the intersections at a later date.

A question was raised as to whether the intersections could be signalized with the use of pedestal poles and without mast arm poles. The standards allow such an installation but only because so many of these exist on the east coast (older systems). The standards recommend against such an installation because of the poor visibility of the signal displays, and the unexpected location of the poles. There aren't any pedestal installations currently in Ft Smith. TEC has never designed an intersection with pedestal signal poles in the 21 years of being in business. We have always recommended and designed short unobtrusive mast arms that blend with the surroundings but adequately display the traffic signals. Traffic crashes at existing pedestal pole installations have always been higher and these intersections are generally on a list to upgrade to mast arm poles.

Based on traffic demand, traffic growth, and safety, it is recommended that as a minimum, Albert Pike be upgraded, widened at the three intersections and traffic signals be installed.

Sincerely,



Steven D. Hofener, P.E., PTOE
President

SDH/tm