

TOWNSHIP OF LOWER MAKEFIELD
ZONING HEARING BOARD
MINUTES – APRIL 7, 2009

The regular meeting of the Zoning Hearing Board of the Township of Lower Makefield was held in the Municipal Building on April 7, 2009. Chairman Malinowski called the meeting to order at 7:35 p.m.

Those present:

Zoning Hearing Board: David Malinowski, Chairman
 Paul Bamburak, Vice Chairman
 Gregory J. Smith, Secretary (left meeting in
 progress)
 Jerry Gruen, Member
 Anthony Zamparelli, Member
 Paul Kim, Alternate Member (joined meeting in
 progress)

Others: Robert Habgood, Code Enforcement Officer
 (left meeting in progress)
 David Truelove, Township Engineer
 James Majewski, Township Engineer
 Allen Toadvine, Zoning Hearing Board Solicitor

Absent: Matt Maloney, Supervisor Liaison

APPEAL #09-1507 – EDWARD AND VIRGINIA KOWZUN

Mr. Edward Kowzun and Ms. Virginia Kowzun were sworn in. The Application submitted was marked as Exhibit A-1. Attached to the Application was a two-sheet Plan for Lot #19 Rivergate time stamped by the Township 3/6/09, and this was marked as Exhibit A-2.

Ms. Kowzun stated they are present to ask for a Variance for the rear setback. She stated they are looking to build an addition for her mother which will be handicap accessible. She also needs a bathroom and bedroom on the first floor.

Mr. Gruen asked if they have any blueprints of what they are proposing, and Ms. Kowzun stated they have not moved forward with anything because of the need for the Variance. She stated they have talked to an architect who suggested that they first get the Variance.

She stated they are planning to have a bedroom, bathroom, and a living area. Mr. Gruen asked the number of square feet, and Mr. Kowzun stated it would be between 700 and 900 square feet. Mr. Gruen asked if it will have a separate entrance, and Ms. Kowzun stated they have not gotten this far, but it may. Mr. Gruen asked if they plan to have a kitchen, and Ms. Kowzun stated they do not.

Mr. Bamburak asked how they know they need a 37' setback if they have not prepared any plans, and Ms. Kowzun stated the architect came up with a master suite which went back to the shed, and she discussed this with Mr. Habgood who indicated they would need a Variance. She stated she does not want to build something that will take up the whole yard and feels 12' off the back of the house would be adequate. The architect felt that the 37' setback would be adequate. Mr. Bamburak stated normally they have professional drawings, and he wants to make sure that what they are asking for is all that they will need.

Mr. Gruen asked about impervious surface and asked if anyone looked into this. Ms. Kowzun stated she was told they are allowed 28%. Mr. Habgood stated he did the impervious surface calculations, and with the proposed addition of approximately 438 square feet, they would be well within the impervious limit.

Mr. Smith stated without a definitive Plan, he would not want to have them ask for a setback Variance for 37', and then after meeting with the architect find out that they need 36'. Ms. Kowzun stated the architect did come up with something that would have been 7 ½' which would have been a very tiny room, and she feels 12' would make an adequate size room. Mr. Kowzun stated they could go out to the side as well and they would not need a Variance for the side yard. Ms. Kowzun stated they do plan on putting a basement area under the addition, and they will move the Bilco door off to the side as well.

Mr. Truelove stated the Township is not participating in this matter.

Mr. Toadvine asked if there is open space behind the home, and Ms. Kowzun stated it is Township open space at Macclesfield Park. Mr. Toadvine asked if they have discussed this with their neighbors, and Ms. Kowzun stated they did and the neighbors had no issues.

There was no one present to speak in favor of or opposed to the Application, and the Public Hearing portion was closed.

Mr. Smith moved, Mr. Gruen seconded and it was unanimously carried that the relief requested be granted in the way of a 37' rear yard setback Variance.

APPEAL #09-1508 – NOTE BROTHERS CONSTRUCTION, INC.

Mr. Blaine Appelgate and Mr. Michael Note were sworn in. The Application submitted was marked as Exhibit A-1. Attached to the Application was a one-sheet Plan dated 7/17/87 last revised 11/1/07 for Tax Parcel No. 20-40-36, and this was marked as Exhibit A-2.

Mr. Appelgate stated for the last five years he has hosted an annual cancer research fundraiser at his home. He stated over the last five years he has accumulated a number of very large items related to the fundraiser and he is out of room to continue with the fundraiser because of all of the infrastructure items he has accumulated associated with the event. He is proposing to build an accessory building as shown on Exhibit A-2.

Mr. Malinowski asked if there will be power to the building, and Mr. Note stated there will. He stated there will be water but not sewer. There will also be phone service. There will be no bathroom facilities.

Mr. Bamburak asked if this will be used only for storage or will there be visitors to this building, and Mr. Appelgate stated he does have volunteers to help with mailings, etc.; and it has taken over rooms in his home. He stated he needs to have room to operate this independently of his home. Mr. Bamburak asked if the fundraiser happens on the property, and Mr. Appelgate stated it does; and for the last five years it has been held on the third Saturday in July. He stated the event started small with approximately one hundred people and last year they had 450 people come through the gates. He stated they were able to raise a significant amount of money for Fox Chase which is their primary beneficiary. His property is next to the Makefield Elementary School. He invited the Board to attend this year's event to be held on July 18.

Mr. Toadvine stated two Variances are needed – one for the location and the other for the height of the building; but it is unclear from the Application as to the exact height. Mr. Note stated it will be approximately 23'. Mr. Toadvine stated the Board needs an exact number, and Mr. Note asked that they be permitted to go to 23' and this would be to the peak of the roof. Mr. Malinowski asked why they need 23', and Mr. Appelgate stated with the refrigeration that he has to store food that is donated he is proposing a garage/storage area on the lower floor, and he would like to have an office space upstairs for the volunteers. He stated there is no living space proposed and he has no intention to convert it into rental space.

Mr. Truelove stated the Township would like to participate and stated they understand that there are some trees that may be taken down and there may be buffering issues because of the proximity to the School. Mr. Majewski stated he feels the Applicant should replace any trees that are taken down to necessitate the construction of the garage.

Mr. Appelgate stated he would be willing to do this. He stated it is a mature lot, and he has had to take some trees down that have become diseased. He feels three trees would have to be taken down to construct the garage. Mr. Majewski stated they would want the trees to be generally in the same location they are now but not interfere with the use of the garage. He stated they should be approximately 2 ½” caliper trees and the species should be native.

Mr. Gruen noted this is a large property, and he asked why he is proposing the garage to be constructed so close to the property line. Mr. Appelgate stated this is the only suitable location with the number of people that they entertain on the property during the event; and to put the garage anyplace else on the property would compromise the nature of the event. He stated they use a 40’ by 60’ tent and also have additional tables and chairs outside of the tent. He stated it is an all day event which is game related so they need the space to make it meaningful for those who come to the event.

Mr. Smith asked the height of the existing home on the property, and Mr. Note stated it is approximately 40’. Mr. Smith noted the existing 1 ½ story garage on the Plan, and asked if this is 23’ high, and Mr. Note stated he has not measured it, but feels it would be close to 23’. Mr. Smith stated there is also a 22’ by 22’ garage, and Mr. Note stated this is about 16’ high.

Mr. Gruen asked why they do not have enough space for refrigeration with all of the existing outbuildings, and Mr. Appelgate stated he has water issues in the basement and it cannot be finished. He stated he has yard equipment in the shed and cabana and the garage is already filled with items for the event. He also has items in his home.

Mr. Smith noted the rectangle on the Plan near the 130’ elevation line near the existing woods, and Mr. Appelgate stated there is a basketball court and to the left of this is a 12’ by 20’ shed; and currently he has two chest freezers in that shed which he is not comfortable with. Mr. Smith asked what is in the 1 ½ story garage, and Mr. Appelgate stated his office is upstairs and there is a gym downstairs. In the 22’ by 22’ garage he is storing the tent, tent poles, ladders, a commercial refrigerator, yard equipment, etc.

There was no one present to speak in favor or opposed to the Application, and the Public Hearing portion was closed.

Mr. Bamburak moved and Mr. Zamparelli seconded that the Variance be granted to allow the proposed building to have a height of 23’ and to have the building situated on the lot as shown on the Plan.

Mr. Smith moved to amend the Motion that approval is conditioned on the fact that the space will never be used as a living space and that the trees that need to be disturbed to effect the construction be replaced with a species and size agreeable to the Township engineer. Mr. Bamburak seconded the Motion to amend. Motion to amend carried unanimously. Motion as amended carried unanimously.

Mr. Habgood and Mr. Smith left the meeting at this time. Mr. Kim joined the meeting at this time.

A short recess was taken. The meeting was reconvened at 8:05 p.m.

APPEAL #08-1481(A) – THE FRANKFORD HOSPITAL OF CITY OF PHILADELPHIA

Mr. John VanLuvanee, attorney for the Applicant, Jennifer McGrath, attorney for Newtown Township, and Mr. Ron Smolow, attorney for Residents Against Frankford Relocation were present.

Mr. Michael Angelastro was reminded that he was still under oath. Mr. Truelove stated Mr. Angelastro had testified at the last Hearing on March 17. Mr. Truelove asked Mr. Angelastro if he is familiar with Lower Makefield Township's Traffic Impact Study requirements set forth in SALDO (Exhibit 3), and Mr. Angelastro stated he is. Mr. Truelove marked as Exhibit T-12 the Traffic Impact Study requirements. Mr. Angelastro was shown Exhibit T-12 and agreed that this is an excerpt from the SALDO. Mr. Truelove noted the Definition Section, Section C2 which indicates "Study Area," and asked Mr. Angelastro to read this Section into the record

Mr. Angelastro read as follows: "Study Area – This area will extend along all arterial and collector access roads serving the development to the nearest Township boundary line and shall in any event extend to all intersections along all roads within one half air line mile area."

Mr. Truelove noted Section D5 – Exhibit 3-3 – Analysis of Transportation Impact, and asked Mr. Angelastro to read the third sentence. Mr. Angelastro read as follows: "The rates should be based on acceptable parameters such as population and employment and be monitored to insure that the rates accurately reflects local conditions, the development-generated traffic, and the traffic generated by other proposed developments in the study area."

Mr. Truelove stated Mr. Angelastro's testimony was based in part on a review of the study prepared for the Applicant by McMahon & Associates, and Mr. Angelastro agreed. Mr. Truelove asked Mr. Angelastro if the McMahon report included reference to or a review of other proposed developments in the study area, and Mr. Angelastro stated it referenced the Capstone Development in the amount of 60,000 square feet when in actuality it has 180,000 square feet. Mr. Truelove asked if the McMahon study complied with the standards, and Mr. Angelastro stated he does not believe it did. Mr. Truelove asked for some of the other developments in the study area besides Capstone, and Mr. Angelastro noted the Cricklewood Green Development of 90,600 square feet of office space in Newtown Township off Lindenhurst Road north of the ICT Complex. He also noted the Villas of Newtown which is 120 units.

Mr. Truelove stated the standards that are indicated are the minimum standards of the Township according to SALDO, and Mr. Angelastro agreed. Mr. Truelove asked Mr. Angelastro from a transportation engineering perspective, what minimum standards did he apply in performing his review and analysis in this case; and Mr. Angelastro stated if there is a development in close proximity to the study area that will generate 100 or more trips to the study area or a series of developments that will generate trips, he feels it should be analyzed. Mr. Truelove asked for a number of aggregate square footage that would be appropriate to review, and Mr. Angelastro stated if there was ½ million square feet of office, non-residential projects within one or two miles from the site, he feels it should have been included.

Mr. Truelove had no further questions at this time.

Mr. VanLuvanee stated T-10 was introduced at the last Hearing which is a statement of Mr. Angelastro's professional qualifications. Mr. VanLuvanee noted his educational background and stated at the last Hearing he indicated he had a Masters in Civil Engineering and there was also a question if he had a PhD in Civil Engineering progress, and he asked what "in progress" means. Mr. Angelastro stated he has completed everything except for the dissertation. Mr. VanLuvanee asked how long he has been involved in pursuing the course work he needed in order to complete the course requirements, and Mr. Angelastro stated he has been going for eight years. He stated he has finished his class work, and is currently working on his dissertation which is related to transportation engineering.

Mr. VanLuvanee noted his work experience and stated between 1990 and 1995 he worked for a firm, and he asked the type of work he did. Mr. Angelastro stated this was primarily site inspection and some design work for Subdivisions and Land Developments. Mr. VanLuvanee asked what he did when he worked for the Burlington Township Department of Engineering between 1995 and 1998, and Mr. Angelastro stated he primarily reviewed Site Plans and Subdivision Applications for the Board and did some minor capital improvement projects. Mr. VanLuvanee asked what he did for

Springfield Township Department of Engineering when he worked there from 1999 to 2000, and Mr. Angelastro stated this was in Delaware County, and he was the Township engineer. He was responsible for project management of capital projects.

Mr. VanLuvanee noted a firm he worked for beginning in February, 2000 which specializes in transportation engineering. Mr. VanLuvanee asked Mr. Angelastro if this was the first job he had in which his work was specialized in the field of transportation engineering, and Mr. Angelastro agreed. Mr. Angelastro stated he was with that firm for approximately eight months and then went to work for Remington Vernick.

Mr. VanLuvanee asked in what capacity he joined Remington Vernick, and Mr. Angelastro stated he was a designer in their Transportation and Bridge Department. He prepared designs for intersection projects, roadway projects, and prepared traffic reports and studies. Mr. VanLuvanee asked if his job description changed through the years at Remington Vernick, and Mr. Angelastro stated he is still in the Transportation and Bridge Department and he currently does design work, prepares studies, and has a supervisory role within the Department.

Mr. VanLuvanee noted the top of his CV which lists three projects he did for the Delaware Valley Regional Planning Commission, and he asked what time period were the projects done. Mr. Angelastro stated the 561 Project was three to four years ago and there were seven to nine intersections they put into an arterial progression. The CR73 Cherry Hill corridor project was a different project with a similar scope. The Traffic Signal Equipment Inventory was a project where they went out to all the signalized intersections on Camden County Route 561 and took an inventory of the existing equipment, opened up the controllers, cataloged the equipment inside the controller, and created a data base. Mr. VanLuvanee stated this was not really a transportation design project, it was just an inventory; and Mr. Angelastro agreed.

Mr. VanLuvanee noted on the CV, projects done for the Port Authority of New York and New Jersey and asked the time frame for those projects. Mr. Angelastro stated this would have been in 2001/2002. Mr. VanLuvanee stated it appears that only one of those five projects was in the nature of a traffic study, and this was the fourth project listed. He asked what type of traffic study this was, and Mr. Angelastro stated it was an analysis of high crash locations within the Newark Liberty International Airport. Mr. VanLuvanee asked what was involved in the analysis, and Mr. Angelastro stated they reviewed the crash reports at the high accident locations, reduced the data, developed apparent causes for the crashes, and recommended mitigation measures. Mr. VanLuvanee stated this was not really in the nature of a traffic impact study, and Mr. Angelastro stated it was not.

Mr. VanLuvanee stated the CV lists, "Intersection, Traffic Signal, and Roadway Design" and he asked if all of these projects were done while he was at Remington Vernick, and Mr. Angelastro agreed. Mr. VanLuvanee noted the one project labeled as a "Traffic Study for eight intersections," and he asked what was involved in that traffic study.

Mr. Angelastro stated it was a couple different intersections, one which was a traffic signal warrant analysis, and others were a multi-way stop analysis. Mr. VanLuvanee asked if he would call this a traffic impact study, and Mr. VanLuvanee stated he would not.

Mr. VanLuvanee stated another category is labeled “Transportation Studies/Plan,” and asked if any of these projects were traffic impact studies, and Mr. VanLuvanee stated they were not.

Mr. VanLuvanee asked how many traffic impact studies he himself has developed or supervised, and Mr. Angelastro stated he would estimate forty to fifty. Mr. VanLuvanee asked if these were for Municipal clients or private clients, and Mr. Angelastro stated while he worked at Remington it would be for Municipal and public clients.

Mr. VanLuvanee asked if he had occasion to develop a study to project the impact of a particular development project in the course of doing traffic impact studies; and

Mr. Angelastro stated he has. Mr. VanLuvanee asked the type of development projects for which he has done traffic impact studies; and Mr. Angelastro stated elementary schools and one hospital which was Virtua Health Systems in Voorhees, New Jersey.

Mr. VanLuvanee asked who was the client for the Virtua job, and Mr. Angelastro stated it was the Hospital. Mr. VanLuvanee asked if there were any other private or public traffic impact studies he worked on, and Mr. Angelastro stated they did them for a number of Schools for the New Jersey School Construction Corporation as well as a number including a WaWa while he worked at Horner and Kanner when he worked there for eight months.

Mr. VanLuvanee stated on the CV he lists “Municipal Consulting-Traffic Engineer,” and asked if these are positions he has personally held or that his firm has held; and Mr. Angelastro stated they are positions his firm has held. Mr. VanLuvanee asked if these are all positions where he was the principal representative of the firm to the Municipality during the term of the consulting appointment, and Mr. Angelastro stated this is true for some of them.

Mr. VanLuvanee noted Conshohocken Borough and Mr. Angelastro stated he personally represented them as their traffic engineer on an as-needed basis, and they did not review every application that came before their Board. Mr. VanLuvanee asked if the work he did for them was primarily the review of Land Development Plans, and Mr. Angelastro agreed.

Mr. VanLuvanee noted Norristown Township, and Mr. Angelastro stated he served them as traffic engineer on an as-needed basis. He stated they were reviewing traffic reports for them, but he was not aware of the exact dates as to length of service.

Mr. VanLuvanee noted Monroe Township – Cumberland County; and Mr. Angelastro stated he has performed reviews for Monroe Township over the last two to three years, and they send reports to his firm on an as-needed basis.

Mr. VanLuvanee noted Upper Providence Township, and Mr. Angelastro stated this was also on an as-needed basis probably within the last two years.

Mr. VanLuvanee noted the Winslow Township Planning Board in Camden County; and Mr. Angelastro stated he personally served as the Township's Traffic Engineer in 2006, but does not presently have that position. When he had that position, he attended Planning Board meetings representing the Township on traffic-related issues.

Mr. VanLuvanee noted Gloucester Township, Camden County; and Mr. Angelastro stated he does not feel they had an appointed traffic engineer, but his firm was the appointed Planning Board engineer, and he reviewed a number of traffic studies. He stated he personally was not the appointed engineer.

Mr. VanLuvanee noted the Audubon Borough Land Use Board, Camden County, and he asked if Mr. Angelastro personally was their traffic engineer. Mr. Angelastro stated he is the appointed engineer for that Board and also handles the traffic reviews. He has had this position for three years and currently holds this position.

Mr. VanLuvanee noted Washington Township, Gloucester County, and Mr. Angelastro stated they are the named traffic engineer for the Zoning Board and the alternate traffic engineer for the Planning Board. He stated they will review traffic reports submitted in support of Applications. His firm has held this position for approximately three years. Mr. VanLuvanee asked how many traffic reviews he has done for Washington Township, and Mr. Angelastro stated it would be approximately fifty to sixty. Mr. VanLuvanee asked if all of these were traffic impact studies, and Mr. Angelastro stated they were.

Mr. VanLuvanee noted Logan Township, Gloucester County; and Mr. Angelastro stated they are the Planning Board engineer, and they will review traffic reports on an as-needed basis.

Mr. VanLuvanee noted Hamilton Township, Mercer County; and Mr. Angelastro stated they were the appointed traffic consultant for Hamilton Township for approximately two years. The firm does not currently have that position but they are the Board engineers.

Mr. VanLuvanee asked at the present time, how many of these Municipalities are represented by Remington Vernick and in how many of them does he personally, currently do traffic reviews for those listed on Exhibit A-10. Mr. Angelastro stated he handles all of the traffic reviews for Remington Vernick and stated they are still the

Borough engineer for Conshohocken, Norristown on an as-needed basis so that when a traffic report is required, they will call him, and he will perform the review and testify as needed.

Mr. VanLuvanee stated in connection with the Frankford Hospital Application for a Special Exception, he does not believe that he told the Zoning Hearing Board at the last Hearing exactly what materials were given to him for review that he did in fact review prior to giving his testimony. Mr. Angelastro stated primarily they looked at the Traffic Impact Study prepared by McMahan Associates dated 6/2008. They also went through the two big binders that were submitted in support of the Application. Mr. VanLuvanee asked if prior to beginning his review, was he given a specific assignment by Mr. Truelove or anyone else at the Township; and Mr. Angelastro stated he was asked to review the traffic report.

Mr. VanLuvanee asked if other than the power point presentation that was handed out at the last Hearing and marked as Exhibit T-11 has he prepared any written reports with regard to the Frankford Hospital project that he has provided to the Township, and Mr. Angelastro stated he does not believe so. He stated there have been internal memos but no formal reports. Mr. VanLuvanee asked if these would be internal Remington Vernick memos or memos between himself and Mr. Truelove, and Mr. Angelastro stated they would be between himself and Mr. Truelove.

Mr. VanLuvanee asked if in connection with his preparation for his testimony he reviewed the Lower Makefield Township Traffic Impact Fee Ordinance, and Mr. Angelastro stated he did not. Mr. VanLuvanee asked if he was aware that Lower Makefield Township had such an Ordinance, and Mr. Angelastro stated he was aware of this. Mr. VanLuvanee asked if there was a reason why he chose not to review that Ordinance; and Mr. Angelastro stated it was not mentioned in the traffic study, and his review was limited to that report. He added he felt that if it were relevant it would have been mentioned in the report. Mr. VanLuvanee asked if he knows that any Applicant for development would be required to pay an impact fee, and Mr. Angelastro stated this is his understanding.

Mr. VanLuvanee asked Mr. Angelastro if he reviewed the Roadway Sufficiency Analysis dated 10/91 that was adopted by the Board at that time and is referenced in the Impact Fee Ordinance, and Mr. Angelastro stated he did not. Mr. VanLuvanee asked if he knows who prepared that Report, and Mr. Angelastro stated he believes that McMahan Associates prepared that Report. Mr. VanLuvanee asked Mr. Angelastro if he reviewed the Land Use Assumptions Plan that is Appendix A to the Roadway Sufficiency Analysis, and Mr. Angelastro stated he did not. Mr. VanLuvanee asked Mr. Angelastro if he is familiar with what improvements were proposed in the Roadway Sufficiency Analysis that was adopted by the Township and forms a part of the Impact Fee Ordinance, and Mr. Angelastro stated he is not.

Mr. VanLuvanee stated Lower Makefield was not on the list that he chose to put on his CV (Exhibit T-10) indicating that he served Lower Makefield Township in any consulting capacity, and he asked if there was a reason for this omission. Mr. Angelastro stated this is the first project he has done with Lower Makefield Township.

Mr. VanLuvanee stated his firm does not generally serve as transportation engineer for Lower Makefield, and Mr. Angelastro stated they do not. Mr. VanLuvanee asked if he was aware that in the past Lower Makefield had retained McMahan Associates to do the Roadway Sufficiency Analysis, and Mr. Angelastro stated this is his understanding.

Mr. VanLuvanee stated they also did the Alternatives Analysis Study for the O/R Zoning District that Mr. Angelastro referred to in his testimony at the last Hearing, and Mr. Angelastro agreed.

Mr. VanLuvanee stated Mr. Truelove introduced this evening Exhibit T-10 a copy of the Township's Traffic Impact Study Requirements, and he asked Mr. Angelastro if he has reviewed the entire document, and Mr. Angelastro stated he has. Mr. VanLuvanee asked if he reviewed the requirements of that document in connection with his review of the traffic impact study that McMahan Associates submitted, and Mr. Angelastro stated he did. Mr. VanLuvanee asked Mr. Angelastro if he would agree that the traffic impact study requirements for Lower Makefield Township do not require the submission of a queue analysis, and Mr. Angelastro agreed that it is not listed.

Mr. VanLuvanee stated with respect to the study area, the traffic impact study requirements do not tell the Applicant from what source the Applicant is to obtain information with respect to proposed projects within the study area, and Mr. Angelastro stated it does not. Mr. VanLuvanee asked Mr. Angelastro if he is aware that the Lower Makefield Township Website publishes a list of projects, and Mr. Angelastro stated this is his understanding but he did not look at it. Mr. VanLuvanee asked Mr. Angelastro knows what McMahan would have seen if they had printed out the list in June of 2008 at the time the traffic impact study was prepared, and Mr. Angelastro stated he does not know what they would have seen, and he would not know what they would have seen if they printed it out today. Mr. VanLuvanee asked from what source Mr. Angelastro obtained the information with regard to the projects that he has testified tonight should have been included in the McMahan study, and Mr. Angelastro stated it was through conversations with the Township engineer. Mr. VanLuvanee asked if he knows if McMahan was referred to the Township engineer to get that information at the time the inquiry was made of the Township to determine what projects they should taken into consideration, and Mr. Angelastro stated he would not know what internal conversations were had.

Mr. VanLuvanee asked if he would be correct in assuming, since Mr. Angelastro only testified to two projects this evening, that he believes that there are only two projects and one partial project located within the study area as defined by the Township's traffic impact study requirements (Exhibit T-12) that were not taken into consideration by McMahan. Mr. Angelastro asked for a restatement of the question, and Mr. VanLuvanee stated Mr. Truelove had asked Mr. Angelastro what projects he felt should have been taken into consideration given the study area as defined by the Ordinance, and Mr. Angelastro agreed. Mr. VanLuvanee stated Mr. Angelastro testified that McMahan had considered Capstone but only 60,000 square feet rather than 180,000 square feet and did not consider the Cricklewood Green project in Newtown Township or the Villas Project in Newtown Township, and Mr. Angelastro agreed. Mr. VanLuvanee asked if he would be correct in assuming that those were the only projects that Mr. Angelastro concluded were located within the study area as defined by the Ordinance that were not taken into consideration or not fully taken into consideration by McMahan in the preparation of their traffic impact study, and Mr. Angelastro stated this is correct.

Mr. VanLuvanee stated Mr. Angelastro was present when Mr. Majewski and the representative from Newtown Township testified about a number of projects that were not taken into consideration by McMahan, and Mr. Angelastro. Mr. VanLuvanee stated he assumes that Mr. Angelastro reviewed the definition of the study area, and determined that many of those projects were not in fact located within the study area as required by the Ordinance.

Mr. Truelove objected and stated he believes that question was asked last time, and there was an objection which was sustained. Mr. VanLuvanee asked who attempted to ask this question, and Mr. Truelove stated he himself tried to ask that question at the end of the last meeting. Mr. VanLuvanee stated he read the Transcript and did not see it. Mr. Malinowski agreed to allow the question.

Mr. Angelastro stated he feels the Ordinance outlines the minimum requirements for the traffic study; and if he has projects that extend beyond that half mile air line mile area which is "as the crow flies," such that if there were a project that is .6 miles from a project that could add significant trips to a study intersection, he feels it should be included. He stated just because there is an artificial half mile radius, he feels you still need to have engineering judgment to see if the projects should be included in the study area. Mr. VanLuvanee asked what level he determines whether or not background traffic growth takes into consideration that project. Mr. Angelastro stated generally he will put together background growth plus any adjacent developments. Mr. VanLuvanee stated

Mr. Angelastro is suggesting some adjacent developments would be outside of the half mile radius, and Mr. Angelastro stated he feels they should be included; and just because they are beyond the arbitrary line, if it is a project that will generate trips to a study location, it should be included. Mr. VanLuvanee stated this is true of background traffic

growth as well, and Mr. Angelastro agreed. Mr. VanLuvanee asked where he would draw the line if a half mile is not far enough should they go one mile, a mile and a half, or three miles or four miles like some of the projects they saw on the list. Mr. Angelastro stated he feels they need to look at each individual project to determine the size and the number of trips to be generated and the distribution of those trips. Mr. VanLuvanee asked how they would get this information, and Mr. Angelastro stated they could use previous traffic studies since most Municipalities require the issuance of a traffic study; and if one is on file, it is standard practice to look at that document to see if it should be included in your report. Mr. VanLuvanee asked how far they would go, and Mr. Angelastro stated it would depend on the size of the development. He stated he believes that it was testified to that there was over half million square feet of office, non-residential projects in Newtown within one or two miles from the project; and those projects would be expected to generate a significant amount of trips to the study area, and he would expect those projects to be included.

Mr. VanLuvanee asked how far they should go beyond the study area. Mr. Truelove objected stating this has been asked and answered, and Mr. Angelastro has answered that it depends on the individual project.

Mr. Angelastro stated this would be engineering judgment; and if a project is large enough that it will generate trips to your study intersections, he feels you should include it. Mr. VanLuvanee asked if there is a line between a project that is taken into consideration by your background traffic growth factor as distinguished from a particular project.

Mr. Truelove objected and stated this is not a “cookie-cutter” approach, and he feels Mr. Angelastro has answered the question more than once.

Mr. Malinowski stated it appears that it is a judgment call and he asked that they move on.

Mr. VanLuvanee noted the bottom of Page 44 to the top of Page 45 of the partial transcript, Mr. Truelove had asked “Okay, and did you also review other Applications in Lower Makefield Township and Newtown Township and surrounding Municipalities where McMahan Engineers has performed studies,” and Mr. VanLuvanee stated Mr. Angelastro’s answer was “yes.” Mr. VanLuvanee asked Mr. Angelastro what Applications and what studies he reviewed that have been prepared by McMahan in Lower Makefield, Newtown Township, and surrounding Municipalities. Mr. Angelastro stated they obtained a copy of the traffic study for the Melsky Tract Residential Development in Newtown and Upper Makefield Township, and in that particular project twenty-one other developments were studies which ranged from .6 miles from the project

to 3.7 miles from the Melsky Tract project. Mr. VanLuvanee asked Mr. Angelastro if he knows what the requirements in Newtown Township and Upper Makefield are with respect to the traffic impact study, and Mr. Angelastro stated he does not. Mr. VanLuvanee stated he does not know whether in fact that was the study area that was defined by those Townships, and Mr. Angelastro stated he does not.

Mr. VanLuvanee asked if this is the only study he reviewed, and Mr. Angelastro stated they also looked at the traffic impact study for the Newtown Office Development where they looked at eleven future developments which were between one quarter mile and 1.3 miles from the site which was the ICT Building in Newtown. Mr. Angelastro stated this was a McMahon report.

Mr. VanLuvanee asked if there were any other reports that he reviewed that had been prepared by McMahon; and Mr. Angelastro stated there was another report for the Melsky Tract/White Farm residential development prepared by McMahon, and they looked at twenty future developments ranging from .7 miles from the project site to four miles away.

Mr. VanLuvanee asked Mr. Angelastro if the reason he looked at these other projects was to see how far from the project site McMahon had considered other projects, and Mr. Angelastro stated this is correct. Mr. VanLuvanee asked if he looked to see what the Township requirements were for those traffic studies, and Mr. Angelastro stated he does not know what the limits were for those Municipalities.

Mr. VanLuvanee stated Mr. Angelastro's first major area of testimony at the March 17, 2009 Hearing was the queue analysis, and Mr. Angelastro stated he feels he called it a "queue observation or vehicle queue." Mr. VanLuvanee stated Mr. Angelastro testified: "We primarily observed the vehicle queue at the intersection of Stony Hill Road and Newtown-Yardley Road," and Mr. Angelastro noted this is correct. Mr. VanLuvanee stated he is reading this is at the bottom of Page 48 of the transcript.

Mr. Truelove stated Mr. Angelastro has not had an opportunity to review the Transcript as they only received it at 7:30 p.m.

Mr. VanLuvanee provided Mr. Angelastro a copy and noted the bottom of Page 48 – Line 22, and Mr. Angelastro agreed this is correct.

Mr. VanLuvanee stated it was not clear from his testimony at the last Hearing, and he asked Mr. Angelastro who is the "we" who observed the vehicle queue; and Mr. Angelastro stated they had two of their associates from their office go out to observe the vehicle queue. Mr. VanLuvanee asked Mr. Angelastro if he gave them the instructions for the work they were to do, and Mr. Angelastro stated he did and told them to go out to the intersection of Stony Hill and Newtown-Yardley Roads and observe the vehicle queues from all approaches during the a.m. and p.m. peak hours.

Mr. VanLuvanee asked how you observe a queue, and Mr. Angelastro stated they measure it and they put stakes in the grass areas adjacent to the road at certain intervals which he believes was every 100 feet. He stated in this way they can look at the vehicle queue over each cycle and write down the actual length of the vehicle queue.

Mr. VanLuvanee stated he would assume that the vehicle queue would change almost continuously, and Mr. Angelastro stated it would not change continuously, but would change frequently. Mr. VanLuvanee stated every time a light changes, it changes; and Mr. Angelastro agreed. Mr. VanLuvanee stated on that particular stretch of the road, the changes in the light cycle are primarily what would change the length of the queue as well as the amount of cars on the road; and Mr. Angelastro stated there are a number of issues that effect queue. Mr. VanLuvanee asked if the queues that were measured, queues that were extending back from a traffic signal, and Mr. Angelastro agreed.

Mr. VanLuvanee asked if there was a reason why Mr. Angelastro sent his associates out to the site on September 10, and Mr. Angelastro stated they picked a random day, but noted it had to be a Tuesday, Wednesday, or Thursday; and they picked a day with good weather.

Mr. VanLuvanee asked if they kept worksheets, and Mr. Angelastro stated they did. Mr. VanLuvanee asked what was done with the worksheets, and Mr. Angelastro stated they are in his office. Mr. VanLuvanee stated as he understands it, they had people on the site from 6 a.m. to 9 a.m. and again from 2 p.m. to 6 p.m. on September 10, and Mr. Angelastro stated this is correct. Mr. VanLuvanee asked if they have worksheets in a form prepared by his office, and Mr. Angelastro agreed. Mr. VanLuvanee asked at what frequency do they record the queue length. Mr. Angelastro stated it is every couple of minutes that they observe and record the queue length. Mr. VanLuvanee asked if it as often as they can do it; and Mr. Angelastro agreed and stated this is the purpose for putting out the stakes, so that they could sit at one location, look at the stake number, and write down the queue. Mr. VanLuvanee asked if they retained these worksheets, and Mr. Angelastro stated he believes they are in the file. Mr. VanLuvanee requested of Mr. Truelove that he produce those worksheets so that he can analyze them before the next Hearing, and Mr. Truelove agreed to do so. Mr. VanLuvanee stated this request would also extend to the other dates Mr. Angelastro testified to which were four to five different dates that they did queue analysis.

Mr. VanLuvanee noted the bottom of Page 49 where Mr. Angelastro stated, “On subsequent dates we had our folks go back to that particular intersection and observe the operating characteristics of the intersection to make sure that one day was not an anomaly.” He then testified as to the other four days when they went back.

Mr. Angelastro stated this is correct. Mr. VanLuvanee asked if they used the same technique on those other four days, and Mr. Angelastro stated they did not take measurements on those days. Mr. VanLuvanee asked how they measured the queues on the other four occasions, and Mr. Angelastro stated they did not measure the queues on those other four occasions.

Mr. VanLuvanee noted the queue length table slide where it indicated “Maximum Queue Length Observed,” and asked were those all observed on the September 10 date, and Mr. Angelastro agreed. Mr. VanLuvanee asked if his people had worksheets with them on the other four dates they were there – 11/25, 12/10, 1/9/09, 3/12/09; and Mr. Angelastro stated they did not. Mr. VanLuvanee asked if they brought any notes back, and Mr. Angelastro stated he does not believe so, but he would have to check the file. Mr. VanLuvanee asked if they were the same people who had done the measurements on September 10, and Mr. Angelastro agreed. Mr. VanLuvanee asked if there was a reason why he did not have them take measurements on the other four days. Mr. Angelastro stated they got the queue lengths on the September 10 date and they went back on the subsequent dates to see if they observed the same queuing condition out there on the road. He stated on the subsequent trips he asked them to take photographs of the queue, and it was very consistent with what was observed on September 10.

Mr. VanLuvanee stated “consistency” is somewhat subjective. He stated when the Board looks at the pictures that were produced for the various dates, he is not certain that they could determine whether or not what is seen on March 12 is consistent with what was seen on September 10. He stated you can see pictures of a lot of cars, but you do not see any limit of the queue to compare the condition on September 10 to the condition on 11/25, 12/10, 1/9/09 or 3/12/09; and Mr. Angelastro stated it his their testimony that the queues on those other dates are similar or the same as what was observed on September 10. Mr. VanLuvanee stated this is Mr. Angelastro’s testimony but he was not there, and Mr. Angelastro agreed. Mr. VanLuvanee asked if he is basing his testimony on a verbal report given to him by his two associates; and Mr. Angelastro stated this is correct.

Mr. VanLuvanee stated he is advising he may not have notes from these observations; and Mr. Angelastro stated he would have to look as she may have written something down but he would have to ask her. Mr. VanLuvanee stated by indicating “she” it appears that only one person made notes, and Mr. Angelastro stated on the September 10th date both people made notes, but on the subsequent dates he sent one person out to observe and photograph the queues. Mr. VanLuvanee stated he is now stating that only one of the two people who had been there on September 10 was there the subsequent dates, and Mr. Angelastro agreed adding they were not recording queues on those dates.

Mr. VanLuvanee asked if the assignment for the subsequent four dates was to go out and make a visual observation, take pictures, and report back to Mr. Angelastro; and Mr. Angelastro agreed adding they felt since the queue was consistent with what they observed on September 10, they did not feel they should spend the time and money to count on multiple days when they felt the results were the same.

Mr. VanLuvanee asked the qualifications of the individual who went out on all five occasions and came back and advised the results were consistent, and Mr. Angelastro stated she is an engineer in training with an Undergraduate Degree in Civil Engineering from Rutgers University. Mr. VanLuvanee stated based on her report of what she observed as she related it to Mr. Angelastro on those four occasions and the pictures he observed, Mr. Angelastro is telling the Board that the conditions were consistent; and Mr. Angelastro stated this is correct and also based on his observations of the site as well. Mr. VanLuvanee stated Mr. Angelastro stated he was not there on those five days; and Mr. Angelastro agreed but added on subsequent days when he was out there, he observed similar situations. Mr. VanLuvanee asked Mr. Angelastro when he was out there on subsequent days, did he ever do a queue measurement himself, and Mr. Angelastro stated he did not. Mr. VanLuvanee asked what was the nature of his observations that led him to conclude that the queues were consistent with what was measured on September 10; and Mr. Angelastro stated it was just the observation and the traffic on the roads as he observed them. Mr. VanLuvanee stated he saw a lot of traffic, and Mr. Angelastro stated he saw a lot of queuing.

Mr. VanLuvanee asked Mr. Truelove to produce for him any notes that may have been taken on any of these other occasions by the individual who was conducting the observation.

Mr. VanLuvanee stated Mr. Angelastro indicated that on Tuesday, November 25, "We were there during the a.m. and p.m. peak hours." Mr. VanLuvanee stated they now know that "we" means one person, and Mr. Angelastro agreed. Mr. VanLuvanee asked how many hours that person was physically present that day, and Mr. Angelastro stated he does not know the exact time and he would assume an hour or two during those periods and would have to check and get back to Mr. VanLuvanee on this. Mr. VanLuvanee asked when Mr. Angelastro stated they were there during the a.m. and p.m. peak hours, was there a particular hour in mind, and Mr. Angelastro stated he had them go there between 7 a.m. 9 a.m. and 4 p.m. to 6 p.m.

Mr. VanLuvanee noted Wednesday, December 10, and Mr. Angelastro had testified, "We were there during the a.m. and p.m. peak hours," and Mr. VanLuvanee stated again, they now know that this was one person, and Mr. Angelastro agreed. Mr. VanLuvanee asked if the a.m. and p.m. peak hours would be the two hour periods just described, and Mr. Angelastro agreed.

Mr. VanLuvanee noted Thursday, January 9 a.m. and p.m. peak hours – again those four hours; and Mr. Angelastro stated she may have been there a little earlier or stayed a little later, and he will have to get the exact times.

Mr. VanLuvanee noted the queue length table – Slide 6. Mr. VanLuvanee stated he understood the first column describes the intersection and location and Mr. Angelastro agreed. The second column states, “Maximum Vehicle Queue Length Observed,” and they now know that this was on 9/10/08, and Mr. Angelastro agreed. Mr. VanLuvanee stated this was done with the measuring technique described putting stakes along the side of road, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if he knows at what intervals the stakes were put; and Mr. Angelastro stated he believes that they started out at 50 foot intervals; and when they realized they were going to run out of stakes because the queue was pretty long, they jumped to 100 foot intervals. Mr. VanLuvanee stated this was what was reported back to him, and Mr. Angelastro agreed.

Mr. VanLuvanee stated with respect to the maximum vehicle queue length observed, looking at the line opposite eastbound Newtown-Yardley Road approach, the top number says greater than 1650’, and he assumes this was an a.m. number because the next line across was the a.m. number from the McMahan study, and Mr. Angelastro agreed. Mr. VanLuvanee stated on this, they did not indicate a.m. or p.m. peak; and Mr. Angelastro agreed that this was unfortunate. Mr. VanLuvanee stated below this again it indicates greater than 1650’ with a Footnote #2, but if you look down to Footnote #2, it refers to an a.m. period and yet they are comparing it to a McMahan p.m. period. Mr. Angelastro stated unfortunately this should have been associated with the first greater than 1650’ number so the Footnote belongs up above. Mr. VanLuvanee asked how he knows this, and Mr. Angelastro stated he helped prepare the Chart.

Mr. VanLuvanee stated under the “Maximum Vehicle Queue Length Indicated In the Traffic Study,” Mr. Angelastro previously testified that those figures came from Appendix F of the McMahan report, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if he prepared the queue length table, and Mr. Angelastro stated he helped prepare it. Mr. VanLuvanee asked what he did, and Mr. Angelastro stated they had one of their people in the office put it together and he ran through it and checked it.

Mr. VanLuvanee noted the line across from “Northbound Stony Hill Road Approach” on the two numbers there for a.m. and p.m. peak, there is a Footnote #1 opposite each of these, and Footnote #1 states, “Traffic Report indicates queue length might be longer.”

Mr. VanLuvanee stated he would normally assume that the absence of that Footnote opposite the other numbers as you go down the column would indicate that there was no similar qualification, but he does not feel this is entirely accurate; and Mr. Angelastro agreed. Mr. VanLuvanee stated the Footnote could have been placed at other locations, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if there was a reason why he did not put the Footnote every place that it applied, and Mr. Angelastro stated there was no intentional reason. Mr. VanLuvanee asked if he knows today where the Footnote belongs and where it does not, and Mr. Angelastro stated he would have to go

through and compare it to Appendix F. Mr. VanLuvanee asked if he would agree that Appendix F indicated that places other than the two places they show Footnote #1 that the queue might be longer than the number Mr. Angelastro listed, and Mr. Angelastro agreed.

Mr. VanLuvanee noted with respect to the intersection of Newtown-Yardley Road and Campus Drive, Mr. Angelastro has the figures for the westbound Newtown-Yardley Road approach, and for the matching in the McMahan Column the p.m. peak is shown as 246. He asked that Mr. Angelastro check Appendix F to see if it should not have been 582 rather than 246 as shown in his chart, and Mr. Angelastro agreed that it should have been 582.

Mr. VanLuvanee asked if Mr. Angelastro is familiar with the Synchro7 Software; and Mr. Angelastro stated he is familiar with it, and he does use it at his firm. Mr. VanLuvanee asked if he is familiar with the definitions of the 95th percentile and 50% percentile used in that software, and Mr. Angelastro stated he is. Mr. VanLuvanee asked if he is familiar with the fact that they publish a software user guide for that software, and Mr. Angelastro stated he is and he has used it.

Mr. VanLuvanee marked as Exhibit A-18 excerpts from the Traffic Signal Software User Guide for Synchro Studio 7. Mr. VanLuvanee stated he was curious about what the 95th percentile and 50th percentile queues referred to. He noted page 7-27 under Timing Settings where it states, “The 50th percentile maximum queue is the maximum back of queue on a typical cycle,” and he asked Mr. Angelastro what a “typical cycle,” means to him.

Mr. Truelove objected since he does not know what “typical cycle” means in this report.

Mr. VanLuvanee stated Mr. Angelastro has stated he has used this report, and he is the expert. He feels if he indicates it does not mean anything to him, he will so advise.

Mr. Angelastro stated a “typical cycle” would be the typical traffic signal cycle experienced during the day.

Mr. VanLuvanee stated the report goes on to say, “and the 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes.” He asked Mr. Angelastro what this means to him, and Mr. Angelastro stated he presumes it means 95% of the time or less, the volumes will be less than that number.

Mr. VanLuvanee noted on the same page it also states, “In many cases, the 95th percentile queue will not be experienced due to upstream metering.” He asked Mr. Angelastro what this means, and Mr. Angelastro stated he would have to read through this and refresh his memory. Mr. VanLuvanee stated in that occasion the manual indicates that the 50% percentile queue would represent the maximum queue experienced.

Mr. VanLuvanee asked Mr. Angelastro when he excerpted the maximum vehicle queue length from the McMahan Study, in each case he used the 95th percentile, and Mr. Angelastro agreed. Mr. VanLuvanee asked if there was a reason for this, and Mr. Angelastro stated it was the queue that was observed 95% of the time or less.

Mr. VanLuvanee noted page 7-28 of Exhibit A-18, it indicates in the Note: “Due to upstream metering, the 95th queue may be less than the 50th queue.” Mr. VanLuvanee asked Mr. Angelastro if he understands why this would be, and Mr. Angelastro stated he would have to read through it.

Mr. VanLuvanee stated underneath that Note it states, “The ~ and # footnote indicate that the volume modeled exceeds capacity.” Mr. VanLuvanee stated if that happens it goes on to say, “The ~ footnote indicates that the approach is above capacity and the queue length could be much longer.” Mr. Angelastro agreed. Mr. VanLuvanee stated there were a number of ~ in the McMahan Report especially under the queue length for the 50th percentile, and Mr. Angelastro agreed. Mr. VanLuvanee stated the indication is that this could be much longer than what was indicated in the Report, Mr. Angelastro agreed.

Mr. VanLuvanee stated the statement on page 7-28 goes on to state “The queue length is theoretically infinite and blocking problems may occur.” Mr. VanLuvanee stated this is where they see the ~ line, and Mr. Angelastro agreed.

Mr. VanLuvanee stated page 7-28 goes on to state, “The value shown for the 50th percentile queue is sufficient to hold one cycle of traffic.” Mr. VanLuvanee asked Mr. Angelastro what is “one cycle of traffic,” and asked if this would mean one cycle of the traffic light signal in the case of the Newtown By-Pass, and Mr. Angelastro agreed. Mr. VanLuvanee stated this would be different than what Mr. Angelastro’s people were measuring out in the field for one cycle of traffic if that is what it means where they saw the ~ in the McMahan report and it would not be a projected measurement – it would be a measurement of one cycle of traffic under the 50th percentile; and Mr. Angelastro stated he believes so, but he would have to look at it in more detail.

Mr. VanLuvanee stated page 7-28 then states, “The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity,” and Mr. VanLuvanee stated he thinks that this is where Mr. Angelastro applied Footnote #1 in his queue length table, and Mr. Angelastro agreed. Mr. VanLuvanee stated Mr. Angelastro testified tonight that there were other places where he probably should have put that footnote to indicate that there was a # sign in the McMahan Report, and Mr. Angelastro agreed.

Mr. VanLuvanee noted page 13-72 of Exhibit A-18 where it talks about Calculation of Queues, and there is a sentence that reads, “If the volume to capacity ratio exceeds 1, the queue length is theoretically infinite. Synchro calculates the queue length as the maximum queue after two cycles.” Mr. VanLuvanee asked if there is any place on the

Newtown By-Pass where Mr. Angelastro believes the volume to capacity ratio would exceed one, and Mr. Angelastro stated he believes so. Mr. VanLuvanee stated the software at that point is not going to tell you that the number they have in the McMahon Report under those circumstances would be accurate – it is telling you it would be the maximum after two cycles. Mr. Angelastro asked for a re-statement. Mr. VanLuvanee stated if there were an area of the Newtown By-Pass where the volume to capacity ratio exceeded one, then the software would indicate that the queue length would theoretically be infinite and so instead of putting an infinity sign, the software calculates the queue length as the maximum queue after two cycles, and Mr. Angelastro stated that is what it says.

Mr. VanLuvanee stated when Mr. Angelastro did his analysis of the McMahon Report, he just excerpted the numbers and did not take into consideration or try to explain exactly what the Synchro software did and why it does not project which Mr. Angelastro's people in the field actually measured, and Mr. Angelastro stated this was not part of his testimony.

Mr. VanLuvanee noted Page 57 of the Transcript where Mr. Angelastro and Mr. Kim were engaged in a dialogue about the queue analysis and the accuracy or inaccuracy of the McMahon Report as it related to what Mr. Angelastro's folks observed in the field.

Mr. VanLuvanee stated on Line 20 Mr. Kim stated, "Even though they didn't do a queue study, if you input the data correctly, the statistical analysis should be relatively the same, within the ballpark." Mr. Angelastro's answer in the Transcript was, "You would think the algorithms inside the model would generate a model reasonable to the existing conditions." Mr. VanLuvanee stated if you read the User Guide for the Synchro Studio Software, there is really an explanation for those inconsistencies; and Mr. Angelastro stated there appears to be, but his position was that the model should have been calibrated to account for these. Mr. VanLuvanee stated he does not really know whether it was or was not, and Mr. Angelastro stated the Report did not indicate that the models were calibrated.

Mr. VanLuvanee noted Page 63 of the Transcript where they are talking about what was observed on different occasions. He noted Line 5, where Mr. Angelastro stated, "What we have on the next slide is an actual photograph taken on 11/25 at 7:45," and Mr. VanLuvanee stated they showed a back-up across Corporate Center Drive which he believes was the purpose of the photo, and Mr. Angelastro agreed. Mr. VanLuvanee stated on that date, Mr. Angelastro advised that he thought his person was there for two hours, and Mr. Angelastro stated it may have been more or less and he will have to check.

Mr. VanLuvanee asked if he knows if the picture his person took was intended to project the worst case that she observed on that date, and Mr. Angelastro stated she was there to document the queuing on the northbound approach. Mr. VanLuvanee asked how many photographs she took, but Mr. Angelastro stated he did not know. Mr. VanLuvanee asked if the rest of the photographs are in his files, and Mr. Angelastro stated they may be. Mr. VanLuvanee asked if he knows when the photographs were taken and if they are documented as to date and time, and Mr. Angelastro stated he feels they are dated. Mr. VanLuvanee stated the ones he has in his report do not have dates and times on the pictures, but underneath there is a date, and time and he is trying to determine how this was memorialized; and Mr. Angelastro stated they cropped them out to fit them on the slide. He feels on the original pictures there is a date and time. Mr. VanLuvanee asked Mr. Truelove that he produce copies of all the photographs that were taken on all of the time periods representatives of Remington Vernick were on the site. Mr. Truelove agreed to do so.

Mr. VanLuvanee noted Line 17 on Page 63 of the Transcript which states, "At 5:50 on the 25th, vehicles queued from Newtown-Yardley Road past the Corporate Center Driveway and it happened again at 5:58." Mr. VanLuvanee asked if he would be correct in assuming that these were the only two times that it occurred that day during the time that his representative was at the site, and Mr. Angelastro stated he does not know. He stated it may have occurred more and these are the only two times for which they have photographs. Mr. VanLuvanee stated he does not know, and Mr. Angelastro stated he does not know the answer. Mr. VanLuvanee asked who would know the answer, and Mr. Angelastro stated the young lady who took the photographs. Mr. VanLuvanee stated Mr. Angelastro does not know if she has any notes that would indicate whether or not that occurred more than twice, and Mr. Angelastro stated tonight he does not know.

Mr. VanLuvanee noted Line 20 on Page 63 where Mr. Angelastro stated, "Again on December 10th a similar situation we have blocking of the Corporate Center driveway with queued vehicles." Mr. VanLuvanee stated Mr. Angelastro then testified, "Again on two different occasions during that count period, and these are just representatives as observed about that time period," and Mr. VanLuvanee asked what he meant by this. Mr. Angelastro stated he meant that these are representative photographs of what they observed. Mr. VanLuvanee asked if he knows whether the condition that was depicted in those photographs occurred more than two occasions on that date, and Mr. Angelastro stated tonight he does not know that answer.

Mr. VanLuvanee stated the same would be true of the March 12 time period, and stated Mr. Angelastro does not know how many times the condition that they depicted in the photograph that was included in the power point may have occurred during that timeframe, and Mr. Angelastro agreed.

A short recess was taken at this time. The meeting was reconvened at 9:40 p.m.

Mr. VanLuvanee noted Page 64 of the Transcript, where Mr. Angelastro referred to a McMahon Associates Report entitled Alternatives Analysis Study For the O/R Zoning District. Mr. VanLuvanee asked Mr. Angelastro if he reviewed that study, and Mr. Angelastro stated he did read through it. Mr. VanLuvanee asked if he was looking for anything in particular when he went through it, and Mr. Angelastro stated they were just trying to familiarize themselves with it and see what improvements were anticipated for intersections within the study area. Mr. VanLuvanee asked if he remembered looking at the purpose of the study, and Mr. Angelastro stated he does remember this. He noted he does have the study with him this evening. He read from the report as follows, “The purpose of the study is to examine access alternatives for the Office/Research Zoning District O/R Districts of Newtown Township and Lower Makefield Township to determine what roadway and intersection improvements would be required to support full build out of the O/R District as currently Zoned.” Mr. VanLuvanee asked that he read the second sentence, and Mr. Angelastro read, “The Townships will be able to use this information from the Study to update the Roadway Sufficiency Analysis and Capital Improvement Plan and adjust the Traffic Impact Fee for the O/R District.”

Mr. VanLuvanee asked Mr. Angelastro if he knows whether or not Lower Makefield Township used the information in this study to update the Roadway Sufficiency Analysis and Capital Improvement Fund, and Mr. Angelastro stated he did not know if they did.

Mr. VanLuvanee noted Page 64 of the partial Transcript where Mr. Truelove asked at Line 16, “If I can interrupt you – and that would be an office complex at the site,” Mr. Angelastro’s answer was “That’s correct. I believe they used the General Office Land Use Code for the build out of the subject site.” Mr. VanLuvanee provided Mr. Angelastro a copy which he marked as Exhibit A-19 which is excerpts from the Alternatives Analysis Study for the O/R Zoning District. Mr. VanLuvanee noted Pages 27 and 28 and the Heading, “Study Area Trip Generation.” Mr. VanLuvanee noted a portion of Page 28 which he asked Mr. Angelastro to read which he did as follows: “The 5.4 million square foot of Office/Research floor area tabulated in Table 5 in the Section Future Land Use was divided equally into Office, ITE Land Use Code 710, Warehouse, ITE Land Use Code 150, and Light Industrial, ITE Land Use Code 110.” Mr. VanLuvanee asked Mr. Angelastro if he would agree that based on what he just read, that he was incorrect when he said they used the General Land Use Code, and Mr. Angelastro stated it looks like they used a portion of the Land Use as Office. Mr. VanLuvanee stated they divided the 5.4 million square feet into three different categories and apparently used one third of each, and Mr. Angelastro agreed.

Mr. VanLuvanee stated this would give a different number for traffic generation than all Office, and Mr. Angelastro agreed.

Mr. VanLuvanee noted Pages 64 going into Page 65, Mr. Angelastro indicated at Line 21 on Page 64, that “In the Report prepared by McMahon acknowledging the traffic at this particular intersection, their recommendation was to construct triple left-hand turn lanes on the northbound Stony Hill Road approach and to widen Newtown-Yardley Road in each direction with two additional lanes. That was Alternative 1.” Mr. Angelastro agreed that this was his testimony.

Mr. VanLuvanee noted Pages 62, 63, and 64 of the Alternatives Analysis, entitled “Conclusions and Recommendations.” Mr. VanLuvanee asked if he would agree that McMahon actually discussed four alternatives, and Mr. Angelastro agreed. Mr. VanLuvanee stated at the last Hearing, Mr. Angelastro only mentioned two alternatives, and Mr. Angelastro agreed. Mr. VanLuvanee noted when you get down to “Recommendations,” what McMahon actually recommended was Alternative 3, and Mr. Angelastro agreed. Mr. VanLuvanee stated this was an alternative that Mr. Angelastro did not discuss during his testimony, and Mr. Angelastro agreed. Mr. VanLuvanee stated McMahon did not actually recommend Alternative 1, and Mr. Angelastro agreed they did not.

Mr. VanLuvanee noted the Bullet Points on Page 63, and he noted the second sentence of the third Bullet Point which reads, “Due to a lack of driver familiarity, it is not recommended that triple left-turn lanes be considered at any of the intersections.” Mr. VanLuvanee stated at the last Hearing, Mr. Angelastro told the Board that McMahon’s recommendation was to construct triple left-hand turn lanes, and that was incorrect. Mr. Angelastro stated it was one of their Alternatives. Mr. VanLuvanee stated that it was not what their recommendation was, and Mr. Angelastro agreed.

Mr. VanLuvanee noted Page 65 of the Transcript where Mr. Angelastro made a comment specifically at Line 19 as follows, “The significance of this, is with this project the Applicant is proposing to signalize the proposed driveway which is opposite the Corporate Center driveway,” and he was referring back to the two Alternatives that he had discussed which were only two of the four Alternatives that were mentioned in the Alternatives Analysis. Mr. VanLuvanee asked what was the point he was trying to make. Mr. Angelastro stated he does not recall, and he would have to go through the Transcript.

Mr. VanLuvanee asked Mr. Angelastro if he would agree with respect to the issue of the Corporate Center driveway, that Frankford Hospital owns enough frontage on Stony Hill Road that the traffic light could in fact be moved further away from the Newtown By-Pass if that was everyone’s preferred option, and Mr. Angelastro agreed that they do own quite a bit of frontage along Stony Hill Road. Mr. VanLuvanee asked Mr. Angelastro if he would agree with the earlier testimony that it is difficult to get out of the Corporate Center Drive at times during the present time, and Mr. Angelastro stated it may take some time to get an acceptable gap. Mr. VanLuvanee stated if the photographs

are to be believed, there are times when he said that driveway is actually blocked so you could not get out; and Mr. Angelastro agreed. Mr. VanLuvanee stated if they moved the traffic light that Frankford has indicated it would be willing to construct on Stony Hill Road further away from the By-Pass, this will not help the condition at Corporate Center Drive, and Mr. Angelastro stated it may create additional gaps for those people to make their turns. Mr. VanLuvanee asked if he heard the testimony from Mr. O'Brien that if that is what PennDOT ultimately wants, Frankford would move the light and there is room to do it; and Mr. Angelastro stated he recalled that this was his statement.

Mr. VanLuvanee noted Page 75 of the Transcript where Mr. Angelastro testified about travel time. He noted Page 9 where Mr. Angelastro had testified, "What we did is we did some additional field work. We went out there during the a.m. and p.m. peak hours and we drove starting at Lower Silver Lake and Newtown-Yardley Road intersection and we proceeded toward the I-95 intersection in the eastbound direction." Mr. VanLuvanee asked if he was included in the "we;" and Mr. Angelastro stated he did not do this. Mr. VanLuvanee asked who did this, and Mr. Angelastro stated he believes it was one of his field inspectors and Mr. Majewski. Mr. VanLuvanee asked if there are notes that were made by either of those persons on the occasion of this exercise, and Mr. Angelastro stated there are. Mr. VanLuvanee asked Mr. Truelove if he would produce those, and Mr. Truelove stated he will.

Mr. VanLuvanee asked if Mr. Angelastro gave Mr. Majewski and his other employee instructions as to how to do this or did Mr. Majewski instruct himself as to how to do this; and Mr. Angelastro stated he believes that he and Mr. Majewski had a discussion on what they wanted to do and it was to start at one end of the queue and see how long it took to get through. Mr. VanLuvanee stated this is a stretch of roadway that has a number of traffic signals, and he asked how many are in the 8/10th of a mile stretch starting at Lower Silver Lake Road and Newtown-Yardley Road proceeding to the I-95 Intersection in the eastbound direction. Mr. Angelastro stated there are three signals.

Mr. VanLuvanee stated he testified at Line 18 through Line 20, "Free flow speed not hitting lights, it should take 52 seconds to travel that distance." Mr. VanLuvanee asked if there is really any relevance to that statement when you know you have traffic signals there. He asked what relevance is it to this particular situation to tell somebody how long it takes to drive 8/10ths of a mile at 55 miles an hour as if you did not have any traffic signals. Mr. Angelastro stated the relevance is without any queuing, and you do not catch the lights, this is how long it would take a person driving at the speed limit to traverse that distance as compared to the queuing condition.

Mr. VanLuvanee stated he then testified, “That if you had to stop at the Lindenhurst/Campus Drive Intersection, that fifty-two seconds would increase to approximately two minutes and thirteen seconds plus or minus,” and Mr. Angelastro agreed.

Mr. VanLuvanee asked if that determination was made arithmetically or in the field, and Mr. Angelastro stated he believes that it was arithmetically. Mr. VanLuvanee stated they would have to make some assumptions as to how long it takes to stop at the light, wait the light cycle, etc; and he asked the relevance of that particular exercise if it is an arithmetic calculation. Mr. Angelastro stated the relevance is to generate a comparison between free flow through the corridor, stopping at the Lindenhurst Intersection, and what it would take with the vehicle queue.

Mr. VanLuvanee asked if it likely that you would have signals on the By-Pass if you could expect to experience a free-flow condition. He added the signals would probably not have been Warranted, and Mr. Angelastro agreed.

Mr. VanLuvanee asked Mr. Angelastro if he knows how many times Mr. Majewski and his other employee did this test drive, and Mr. Angelastro stated while he knows they ran it more than once, he does not recall the exact number of times.

Mr. VanLuvanee asked Mr. Angelastro if he is familiar with the Traffic Engineering Handbook 6th Edition issued by the Institute of Transportation Engineers, and Mr. Angelastro stated he is. Mr. VanLuvanee asked if this is a reference book that he as a transportation engineer uses in his work, and Mr. Angelastro stated it is.

Mr. VanLuvanee marked as Exhibit A-20 excerpts from the Traffic Engineering Handbook 6th Edition. He noted page 279 where there is a Heading, “Travel Time” which explains the purpose of a travel time study, and he asked Mr. Angelastro if he agrees with the statement of purpose; and Mr. Angelastro stated he does.

Mr. VanLuvanee stated the next four to five paragraphs are methods and equipment and it states, “The travel time data is almost always from a moving vehicle method,” and he assumes that this is the method that Mr. Majewski and his other employee told him was utilized, and Mr. Angelastro stated it would be a vehicle moving through the traffic.

Mr. VanLuvanee noted the sentence which he underlined which states, “The driver also should attempt to vary the time at which the vehicle enters the traffic stream at the beginning of the segment so the vehicle does not always join a platoon that is progressing well or one that is stopping at most red signals.” Mr. VanLuvanee asked Mr. Angelastro if he knows whether that was done, and Mr. Angelastro stated he would have to talk with Mr. Majewski and the other employee.

Mr. VanLuvanee noted the next underlined sentence which states, “As mentioned earlier for volume studies, a sample of six or more test vehicle runs on a segment usually is considered adequate to provide a reasonable estimate of travel time for the data collection period.” Mr. VanLuvanee asked Mr. Angelastro if he knows whether six sample runs were taken, and Mr. Angelastro stated he would have to check with Mr. Majewski and the inspector. He does to know tonight. Mr. VanLuvanee asked if he knows whether the information he is going to provide will answer the question, and Mr. Angelastro stated he will have to see what he comes up with.

Mr. VanLuvanee noted Page 77 of the partial Transcript where Mr. Angelastro discussed the differences between a signalized intersection analysis and a roadway segment analysis. Mr. VanLuvanee stated in Line 5 Mr. Angelastro stated: “They (referring to McMahan) did not analyze roadway segments,” and he also discussed the fact that the Highway Capacity Manual and software has two different types of analyses – one was the roadway segment analysis and one was the signalized intersection analysis, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if he would agree that this stretch of roadway has a number of signalized intersections, and Mr. Angelastro agreed. Mr. VanLuvanee stated Mr. Truelove had asked Mr. Angelastro “which is the more accurate measure of level of service – road segments or signalized intersections for this location,” and Mr. Angelastro had answered, “For this corridor, it would be a road segment because you are analyzing a particular section or roadway.” Mr. VanLuvanee asked what was meant by this. Mr. Angelastro stated the signalized intersection analysis would be appropriate for all the signalized intersections along this corridor.

Mr. VanLuvanee stated Mr. Angelastro is not suggesting that they were wrong or used improper methodology in analyzing signalized intersections, and Mr. Angelastro agreed.

Mr. VanLuvanee asked why a road segment analysis would be a more accurate measure of level of service which is what he testified to or did he not understand Mr. Truelove’s question.

Mr. Truelove objected stating if you continue with the Testimony the next two pages, he explains it in detail.

Mr. VanLuvanee stated he is asking him to explain it here.

Mr. Truelove just he just had an opportunity to get this Transcript tonight at 7:30 so the aspect that Mr. VanLuvanee has had the opportunity to review this and neither the Witness nor he has, is putting Mr. Angelastro at a disadvantage which is not appropriate.

Mr. Malinowski asked why it would not be appropriate if it was his testimony.

Mr. Truelove stated it is a misleading question because he does explain it in the Transcript. It's misleading, and he is Objecting to it.

Mr. Toadvine stated he can answer the question, and Mr. Truelove stated he cannot if it is a misleading question.

Mr. VanLuvanee stated it is not a misleading question. He said, "For this road particular corridor, it would be a road segment analysis," and Mr. VanLuvanee stated he is asking him to explain it simply why this is true.

Mr. Truelove stated he explains it later in his Testimony and this is his point.

Mr. VanLuvanee stated he read the Transcript, and he does not find the explanation.

Mr. Toadvine stated he feels they should let the Witness answer the question.

Mr. Truelove stated he would then ask for the opportunity to ask him the question so the record will reflect his answer that he gave the first time.

Mr. Malinowski asked if his answer would be different or has his opinion changed.

Mr. Truelove stated he is not sure because it would depend on whether he is shown his prior Testimony.

Mr. VanLuvanee stated he gave him the Transcript.

Mr. Malinowski asked that he answer the question.

Mr. VanLuvanee stated Mr. Truelove's question was, "Which is the more accurate measure of level of service – road segments or signalized intersections for this location." On page 77, Line 19, Mr. Angelastro stated, "For this particular corridor, it would be a road segment because you are analyzing a particular section of roadway." He stated Mr. Angelastro then went back to the queuing analysis. Mr. VanLuvanee stated he now asking him to explain his answer. Mr. Angelastro stated if you want to identify the level of service at the intersection, you use signalized intersection analysis, and if you are interested in what the capacity is of the roadway level of service for the roadway segment, you would use the roadway segment analysis.

Mr. VanLuvanee stated it depends on the purpose of your analysis which would provide the best information. Mr. VanLuvanee stated if you wanted to analyze intersections which happened to be signalized, the signalized intersection analysis would provide the best information, and Mr. Angelastro agreed. Mr. VanLuvanee stated he was only asking him to clarify this because he found it unclear.

Mr. VanLuvanee noted Page 84 of the Transcript where Mr. Angelastro talked about trip generation, and Mr. Angelastro observed that ITE has a publication entitled “Trip Generation 7th Edition” which was the most current Edition when McMahon did its study, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if he is aware that there is now an 8th Edition which came out after the McMahon report, and Mr. Angelastro agreed. Mr. VanLuvanee asked Mr. Angelastro if he has looked at the 8th Edition to see whether it would make any changes in the trip generation information that was in McMahon’s report, and Mr. Angelastro stated he did not.

Mr. VanLuvanee asked Mr. Angelastro if he would agree with McMahon’s use of ITE Trip Generation as an appropriate way to determine what you estimate traffic generation to be from a particular use or combination of uses, and Mr. Angelastro agreed. Mr. VanLuvanee asked if this is the source that he would use were he to do a similar study, and Mr. Angelastro agreed. Mr. VanLuvanee stated if he were to do it today, he would assume he would use the 8th Edition instead of the 7th Edition, and Mr. Angelastro agreed. Mr. VanLuvanee stated it is his understanding that the 8th Edition is essentially cumulative in that they have perhaps included some more recent studies that they added into the studies that had formed the basis for the 7th Edition, and Mr. Angelastro stated this is his understanding as well.

Upon questioning, Mr. VanLuvanee estimated it would take approximately one half hour more to complete his cross-examination of this Witness. Mr. Truelove stated he will also have re-direct.

There was discussion on items already scheduled for the next several meetings of the Board.

Mr. Bamburak moved, Mr. Kim seconded and it was unanimously carried to continue the matter to June 2 at 7:00 p.m. It was also agreed that if necessary they will hear this matter on June 16 as well. It was noted that if Mr. Angelastro were unable to attend June 2, they would proceed with other Witnesses.

There being no further business, Mr. Gruen moved, Mr. Bamburak seconded and it was unanimously carried to adjourn the meeting at 10:15 p.m.

Respectfully Submitted,

David Malinowski, Chairman

