Louisville Metro Planning Commission
April 16, 2015

Docket No 14ZONE1057

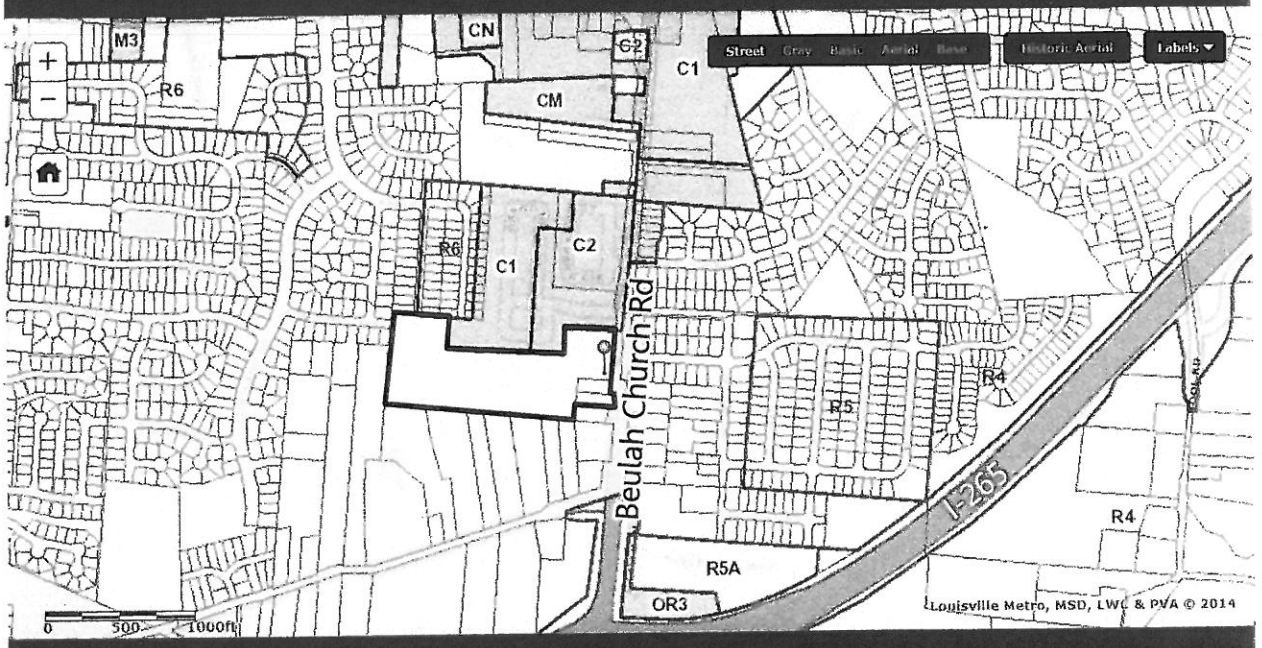
Partial zone change from R-4 to R-5A for apartments with landscape waiver combined with a proposed single-family subdivision on property located at 7508, 7506 and 7504 Beulah Church Road

Ashton Park, LLC
c/o Ken Blacketer & David Bright

Attorneys: Bardenwerper Talbott & Roberts, PLLC
Land Planners, Landscape Architects & Engineers: Land Design & Development, Inc.

INDEX

1. LOJIC Zoning Map
2. Aerial photographs of the site and surrounding area
3. Ground level photographs of the site and surrounding area
4. Neighborhood meeting notice list map, letter to neighbors inviting them to the meeting, and summary of meeting
5. Color Development Plan
6. Building elevations, exterior and interior photographs
7. Landscape buffer exhibit and photos of existing buffer
8. Traffic Study
9. Statement of Compliance filed with the original zone change application with all applicable Guidelines and Policies of the Cornerstone 2020 Comprehensive Plan and Waiver Justification
10. Proposed findings of fact pertaining to compliance with the Comprehensive Plan and Waiver criteria


Street
Gray
Basic
Aerial
Base
Historic Aerial
Labels
M3
R6
CN
C2
C1
CM
R6
C1
C2
Beulah Church Rd
R5
R4
I-265
R4
R5A
OR3
0
500
1000ft
Louisville Metro, MSD, LWC & PVA © 2014

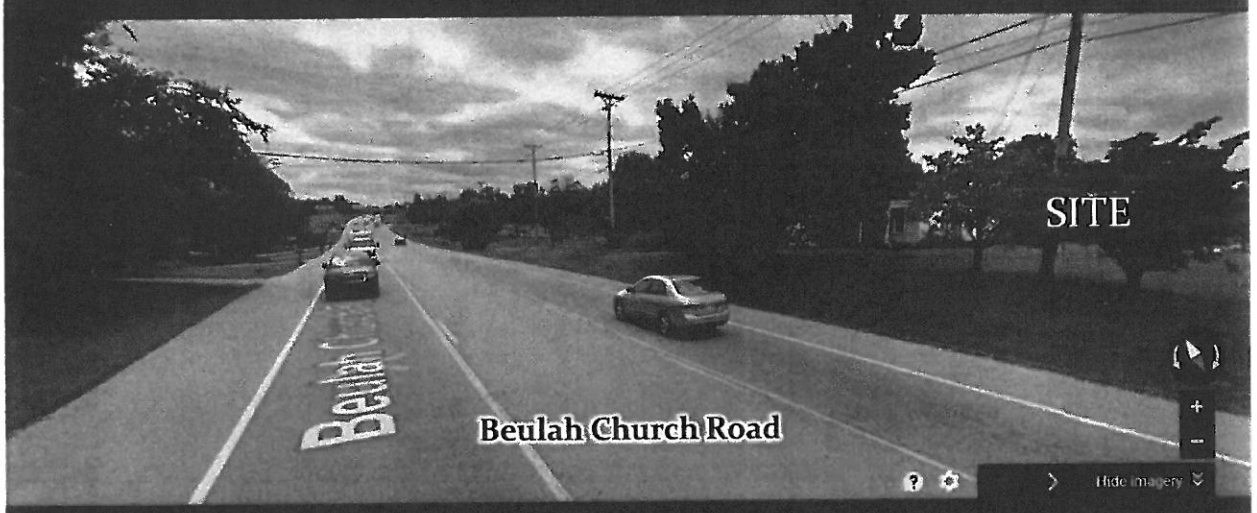
Street
Gray
Basic
Aerial
Base
Historic Aerial
Labels
R6
C1
C2
R1
R5
HAPPINESS WAY
BEULAH CHURCH RD
E MANSLICK RD
ZELMA FIELDS AVE
SILVER BELL AVE
RED BUD HILLS DR
SKAND CASCADE DR
APPLE TREE WAY
APPLEVALLEY DR
APPLEVIEW LN
N MANSLICK SPY DR
STAYMAN WAY
WINNSAP WAY
JONATHAN WAY
CONTRAND
0
200 ft
400 ft

View of site from Zelma Fields Subdivision.

View of Beulah Church Road, looking north. Site is the left.

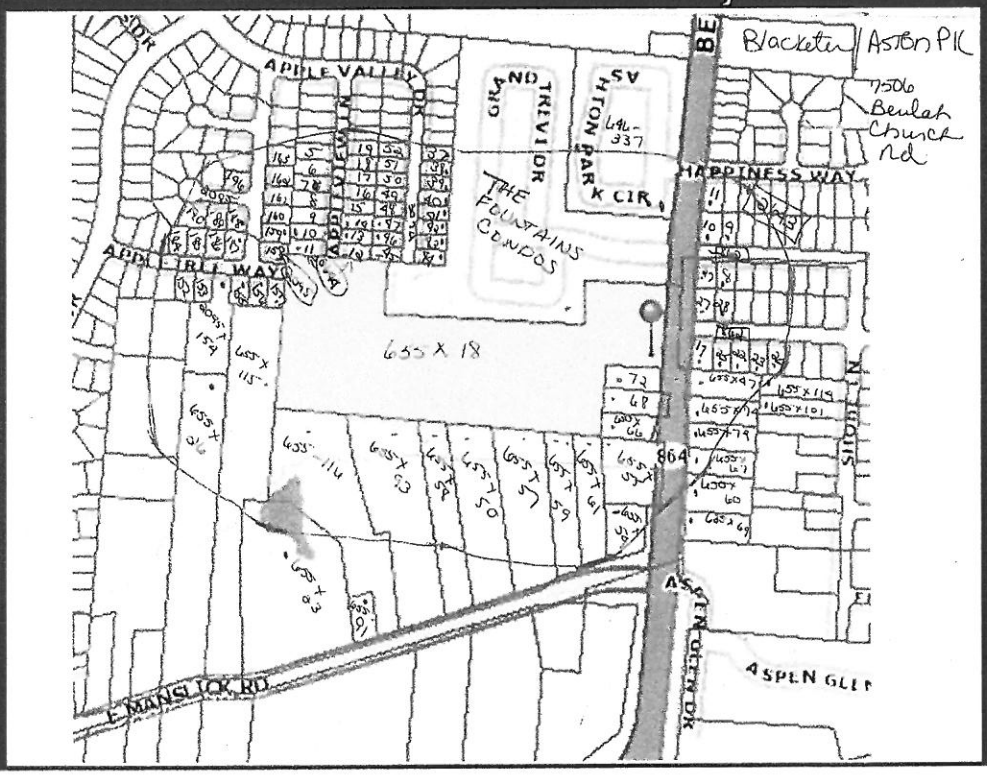
View of existing Ashton Park.

View of The Fountains Condominiums at Grande Cascade Drive. Existing Ashton Park is to the right. Site is to the left.



View of Beulah Church Road, looking south. Site is to the right.

Notice map inviting 44 first and second tier property owners, plus those on the "Interested Parties" list e-mailed by DPDS



Neighborhood meeting letter

ASHTON PARK, LLC
7600 Beulah Church Road
Louisville, KY 40228

November 21, 2014

Dear Neighbor,

RE: Proposed zone change from R-4 to R-5 and R-5A to allow a combination of single-family and multi-family homes. 6.9 acres of the site proposed to be zoned R-5 for single-family use, and the remaining 9.1 acres proposed to be zoned R-5A for multi-family use on property located on the west side of Beulah Church Road just north of E. Manslick Road at 7506 Beulah Church Road

We are writing to invite you to a meeting regarding our proposed zone change to allow a combined single family and apartment community to be located as above.

A meeting will be held on **Wednesday, December 3rd** at **7:15 p.m.** at the **Central Government Center, Room A** located at **7201 Outer Loop** to discuss the plan with interested neighbors.

If you cannot attend the meeting but have questions or concerns, please call our attorney Bill Bardenwerper at 426-6688 or our land planning and engineering firm representative Kevin Young at 426-9374.

We look forward to seeing you.

Sincerely,

Ken Blacketer, Ashton Park, LLC, Member

c: Hon. James Peden, councilman, District 23
David Wagner, case manager, Department of Planning & Design Services
Bill Bardenwerper, attorney with Bardenwerper, Talbott & Roberts, PLLC
Kevin Young, land planner with Land Design & Development

E:\CLIENT FOLDER\Blacketer-Bright\Beulah Church\Nov 2014 Zone Change\Neighbor Meeting\Neigh Ltr 11 21 14.doc
AMC Rev. 11/21/2014 4:10 PM

Summary of neighborhood meeting

Neighborhood Meeting Summary

The Neighborhood Meeting was held at the Central Government Center, Room A located at 7201 Outer Loop on Wednesday, December 3rd, 2014 The meeting was mostly attended by owners of properties in the area, as well as Council Member James Peden.

Nick Pregliasco presented a PowerPoint showing the location, other uses in the area, the design of this property, how it is accessed, and how it will provide screening and buffering. Kevin Young with Land Design and Development, Inc. (LD&D) was present to address technical issues relating thereto, including drainage concerns.

After their presentations, the floor was opened to questions. Most of the questions pertained to traffic and the upcoming traffic improvements in the area. Many of the residents were from the adjoining subdivision and were particularly concerned with the connection from this property to their Apple Valley subdivision by Appleview Lane. Many residents were concerned that this property will become the main cut through in the area and will cause major traffic problems. Ken Blacketer, Kevin Young, and Nick all explained that the applicant would prefer not to connect to Appleview Lane, but this was Land Development Code requirement for connectivity. Other than the connection, many questions related to the additional traffic on Beulah Church Road, which Kevin Young explained was the reason for the upcoming road improvements.

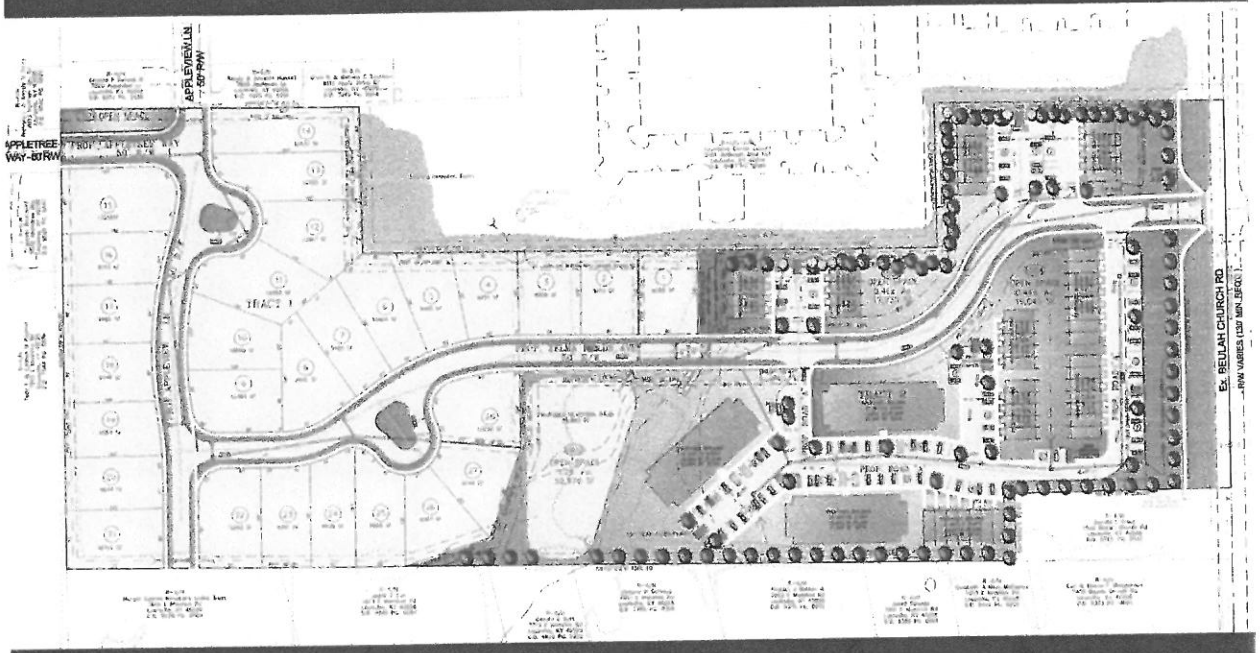
Other than that, Kevin Young explained access, drainage and screening and buffering along the shared property line with the neighboring subdivision. Ken Backeter explained that the apartments would look very similar to the current apartment project on Beulah Church Road and pictures were shown. Mr. Pregliasco, Kevin Young and Councilman Peden explained the process and the fact that the applicant has not yet filed an official application but will do so in the near future to be followed by government agencies reviews, a committee review of the Planning Commission, a full public hearing and then final review and decision by the Metro Council. Kevin explained when those meetings will likely be held, the fact that anyone present or anyone noticed will received added notice of those meetings and will be invited to attend and comment. He also explained that every application has a DPDS case manager who can be contacted as well as officials associated with Metro Transportation Planning & MSD. Many of the residents had already contacted the case manager about this project.

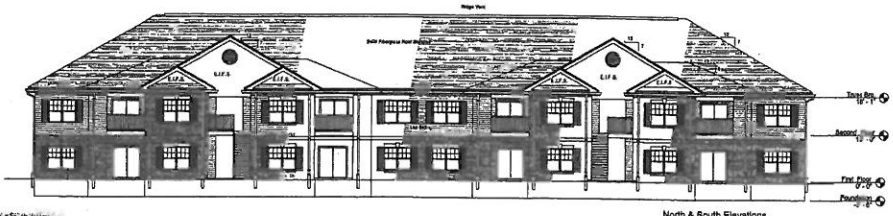
Respectfully submitted,

Nicholas Pregliasco

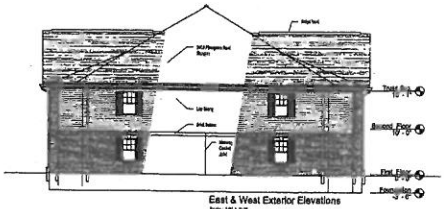
Beulah Church Rd
I-265

State Ct
Beulah Church Rd
Red Bud Hill
Silver Bell Ave

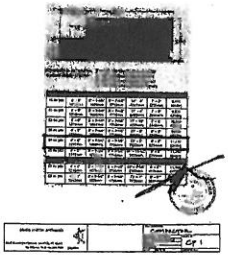

APPLEVIEW LN
60' R/W
APPLETREE
WAY-60'RW
TRACT 1
TRACT 2
Ex. BEULAH CHURCH RD
R/W VARIES (100' MIN. BEYOND)

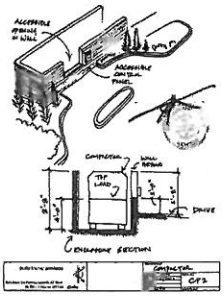


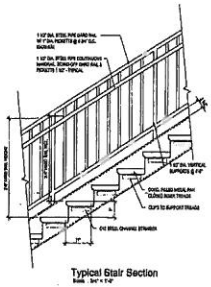
North & South Elevations



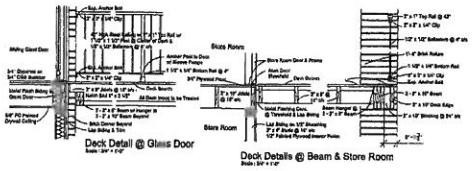
East & West Exterior Elevations







Typical Stair Section

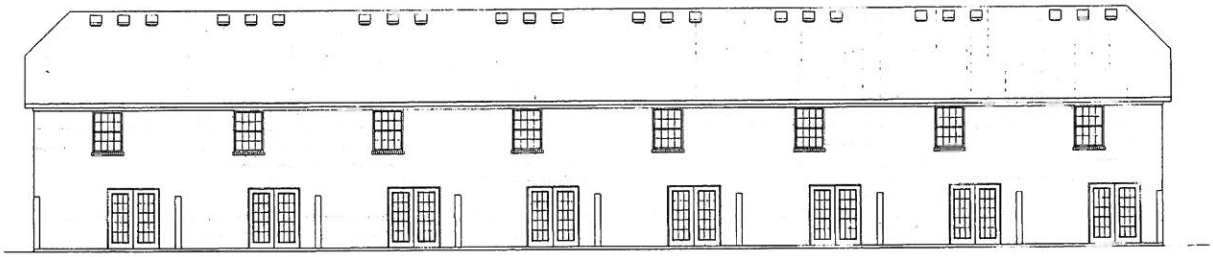


Deck Detail @ Glass Door

Deck Details @ Beam & Store Room

Building #1
2-Story with 16
Two-Bedroom Units

FRONT ELEVATION

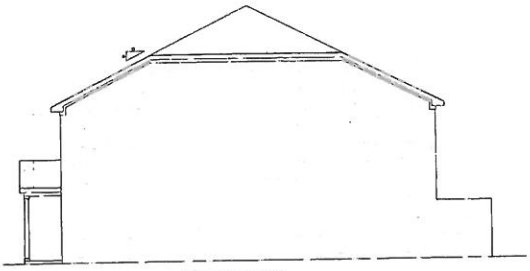


DESIGN DRAFTING, LLC
(502) 657-6460

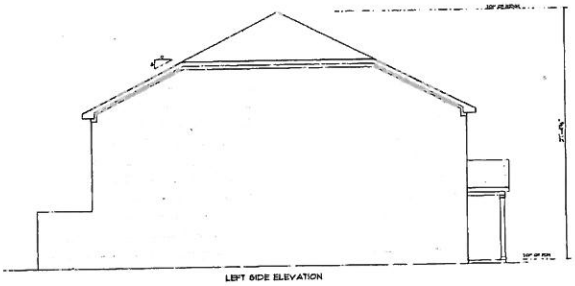
BRIGHT BUILT HOMES INC.
8 PLEX FOR ASHTON PARK

FRONT & REAR ELEVATIONS

A-1

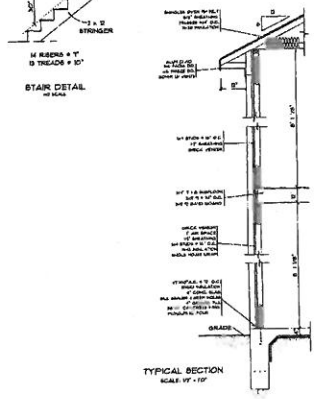


RIGHT SIDE ELEVATION



LEFT SIDE ELEVATION

SECTION @ COMMON WALL
SCALE: 1/4"=1'0"



TYPICAL SECTION
SCALE: 1/4" = 1'0"

STAIR DETAIL
NO SCALE

DESIGN DRAFTING, LLC
(502)-657-6460

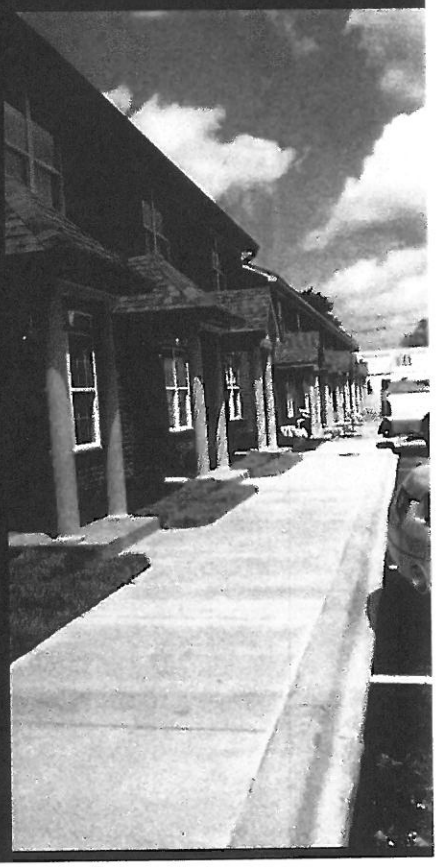
BRIGHT BUILT HOMES INC.
8 PLEX FOR ASHTON PARK

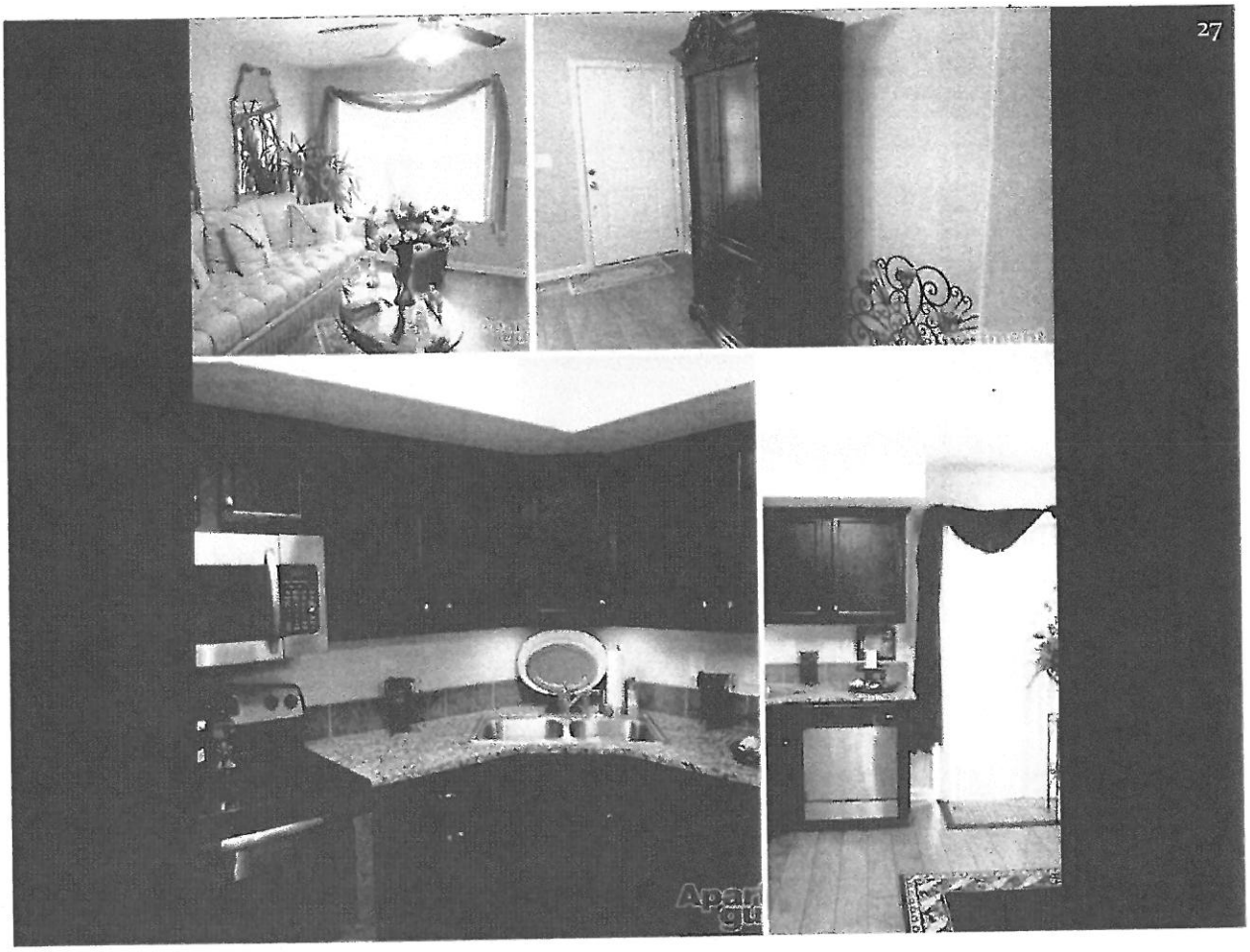
RIGHT & LEFT SIDE ELEVATIONS

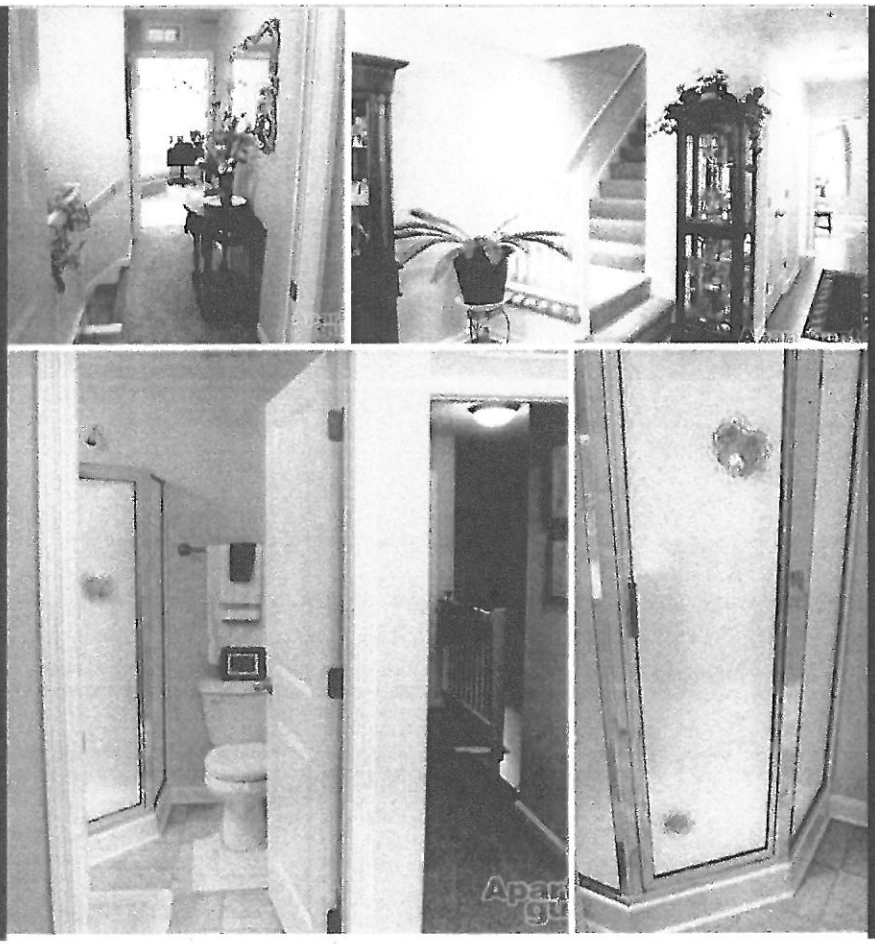
1/4" = 1'0"

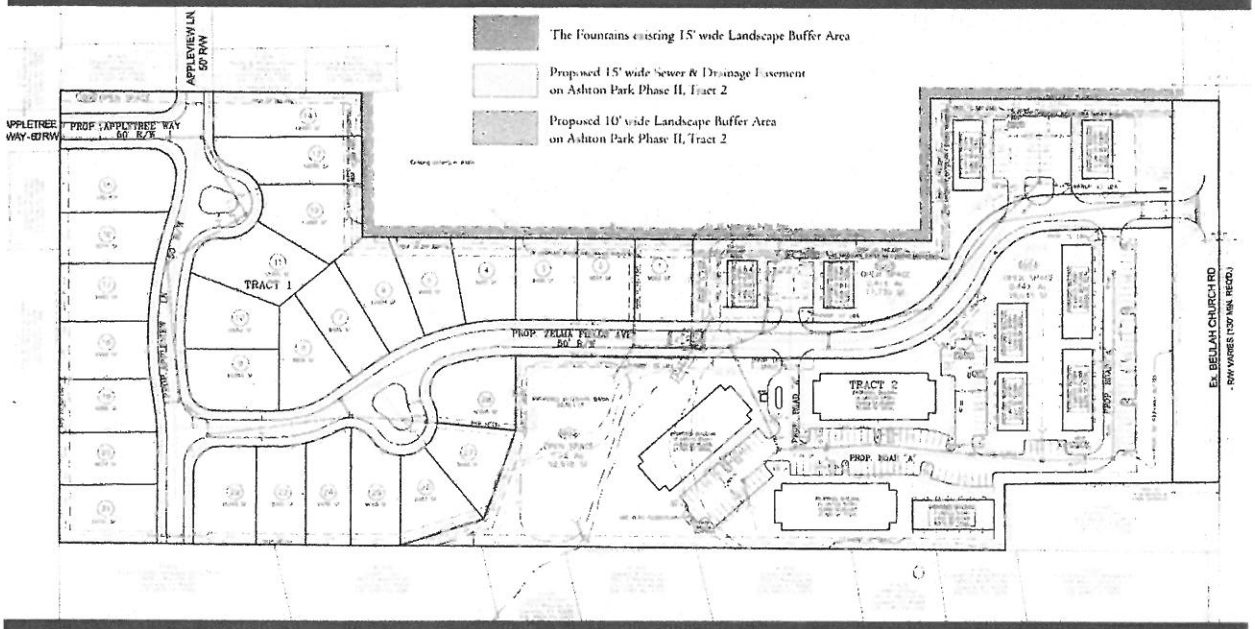
A-5

Ashton Park







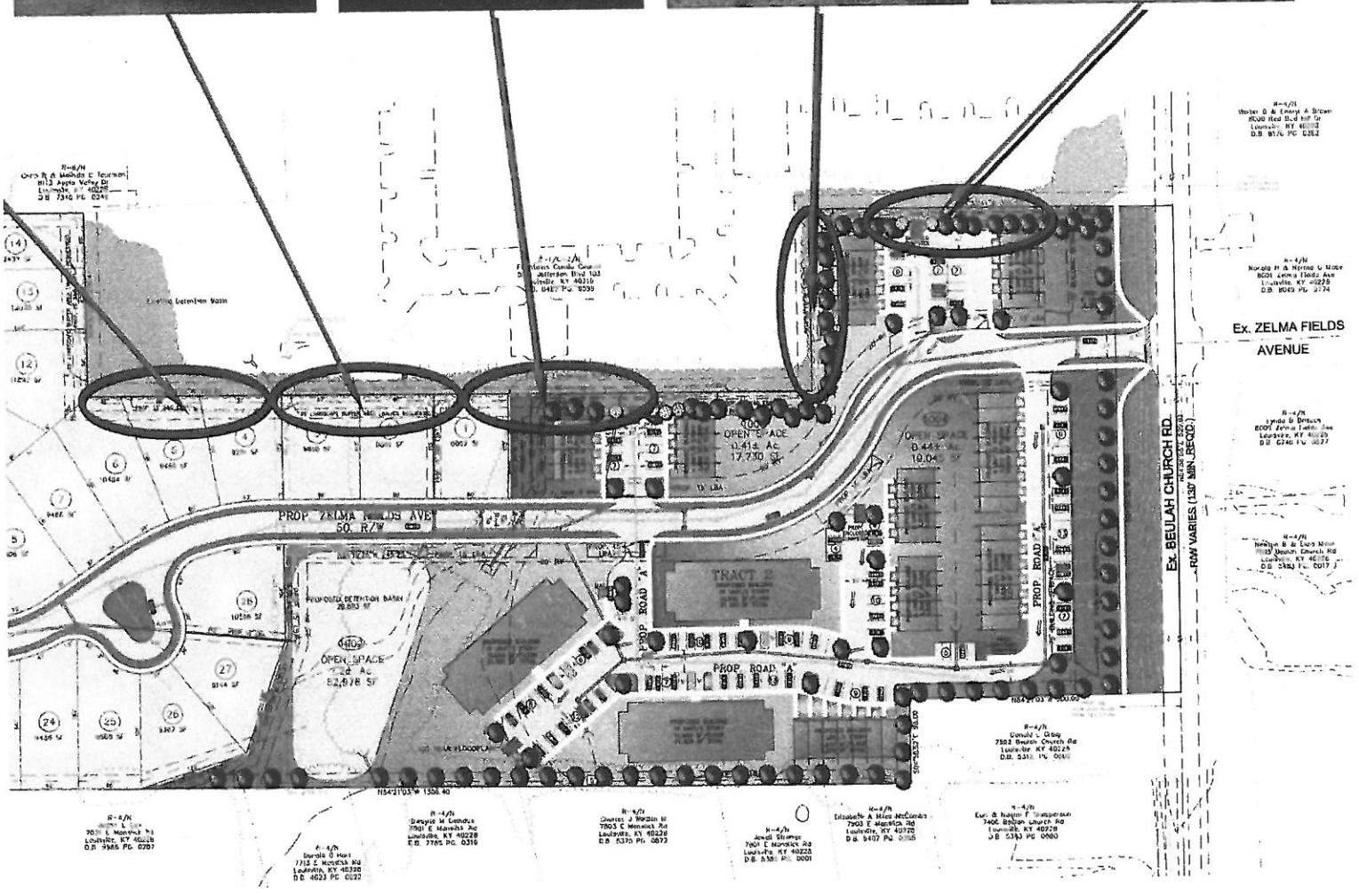

The Fountains existing 15' wide Landscape Buffer Area
Proposed 15' wide Sewer & Drainage Easement on Ashton Park Phase II, Tract 2
Proposed 10' wide Landscape Buffer Area on Ashton Park Phase II, Tract 2
APPLEVIEW LN 50' R/W
APPLETREE WAY-60'RW
PROP. APPLETREE WAY 60' R/W
TRACT 1
PROP. ZELDA FELLOW AVE 50' R/W
TRACT 2
PROP. ROAD "A"
E. BELLAH CHURCH RD
- R/W VARIES (120' MIN. REQ'D.)

2

3

4

5



CASE: 14ZONE1057
WM# 11076

03/19/2015 22:36

03/19/2015 22:36

03/19/2015 22:26

36
03/19/2015 22:26

03/19/2015 22:28

final report

January 26, 2015
Revised April 7, 2015

Traffic Impact Study

Ashton Park Phase II
Beulah Church Road
Louisville, KY

Prepared for

Metro Public Works

JACOBS

11940 US 42
Goshen, KY 40026
502-228-0393

Table of Contents

INTRODUCTION 2

Figure 1. Site Map 2

EXISTING CONDITIONS 2

Figure 2. 2015 Peak Hour Volumes 3

FUTURE CONDITIONS 3

Figure 3. 2018 Peak Hour No Build 4

TRIP GENERATION 4

Table 1. Peak Hour Trips Generated by Site 4

Figure 4. Trips Distribution Percentages 5

Figure 5. Peak Hour Trips Generated by Site 5

Figure 6. 2018 Peak Hour Build 6

ANALYSIS 6

Table 2. Peak Hour Level of Service 7

CONCLUSIONS 8

APPENDIX 9

INTRODUCTION

The development plan for Ashton Park Phase II on Beulah Church Road shows 28 single family lots and 106 apartment units. **Figure 1** displays a map of the site. Access to the development will be from Beulah Church Road, Appleview Lane, and Appletree Way. The purpose of this study is to examine the traffic impacts of the development upon the adjacent highway system. For this study the impact area was defined to be the Beulah Church Road intersection with Zelma Fields Avenue at the proposed entrance, Apple Valley Drive at Outerloop and Fegenbush Lane at Beulah Church Road..

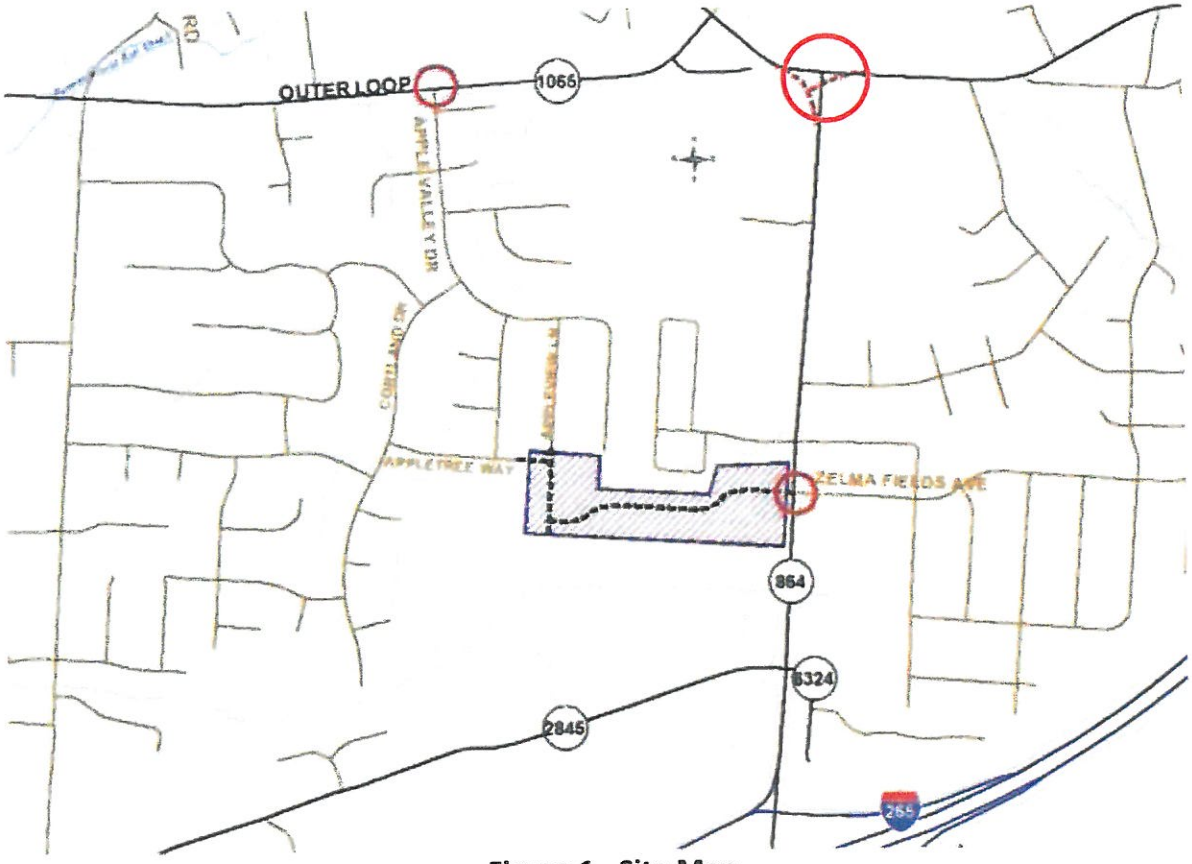


Figure 1. Site Map

EXISTING CONDITIONS

Beulah Church Road, KY 864, is a state maintained road with an estimated 2015 ADT of 15,000 vehicles per day between I 265 and the Outer Loop (KY 1065), as provided by the Kentucky Transportation Cabinet at station 296. The road is a three-lane highway with twelve-foot lanes, eight foot paved shoulders (provided by the Kentucky Transportation Cabinet). The speed limit is 45 mph. There is a sidewalk on the east side of Beulah Church Road. The intersection with Zelma Fields Road is controlled with a stop sign. There is a two-way left turn lane. TARC does not provide service along Beulah Church Road.

Jacobs Engineering Group collected a.m. and p.m. peak hour turning movement counts for the intersection of Beulah Church Road and Zelma Field Avenue, on January 13 and 14, 2015. The a.m. peak occurred between 7:00 and

8:00 and the p.m. peak hour occurred between 4:30 and 5:30 p.m. For the Outerloop intersection with Apple Valley Drive a 5/28/09 count was used. The thru volumes on Outerloop were increased by two percent per year. Metro Public Works provided a count made on 5/5/10 for the intersection of Beulah Church Road and Fegenbush Lane. All volumes at the intersection were increased by two percent per year. **Figure 2** illustrates the 2015 peak hour traffic volumes.

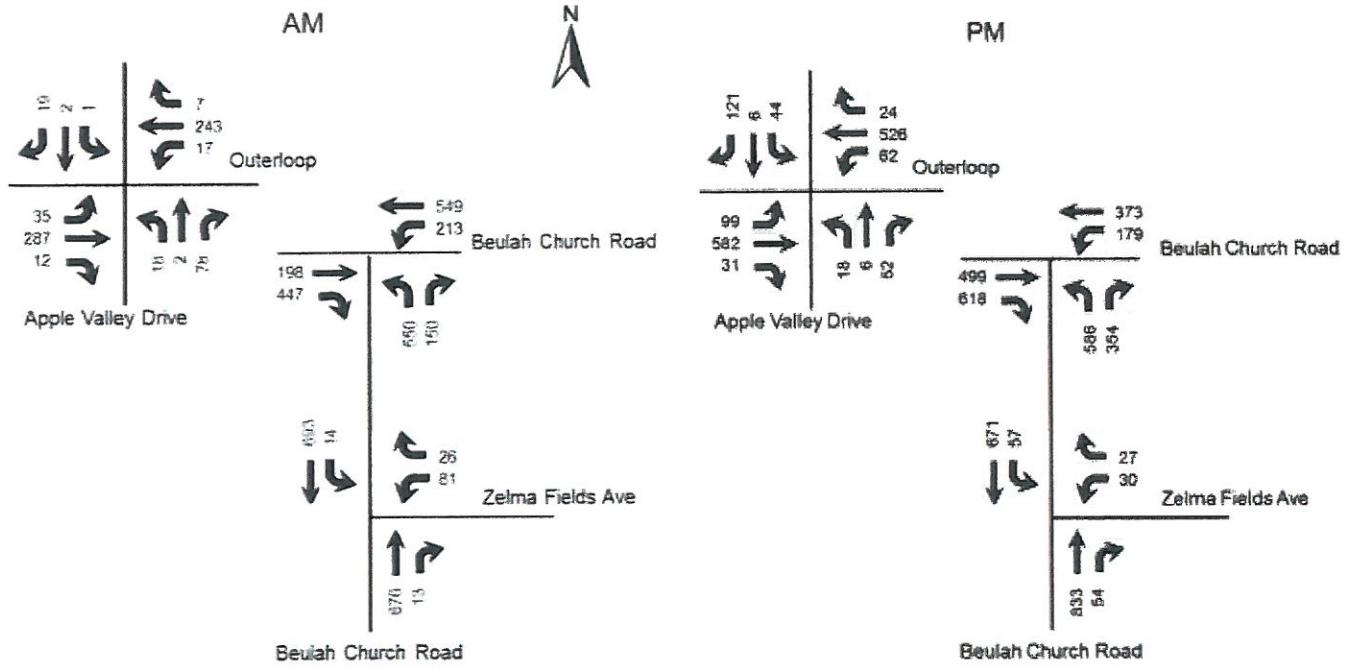


Figure 2. 2015 Peak Hour Volumes

FUTURE CONDITIONS

The projected completion year for this project is 2018, so the analysis year for this study is 2018. To predict traffic conditions in 2018, two and one third percent annual growth in traffic was added to the 2015 volumes on Beulah Church Road, Outerloop and Fegenbush Lane. This growth is Metro Louisville's standard rate. **Figure 3** displays the 2018 No build volumes.

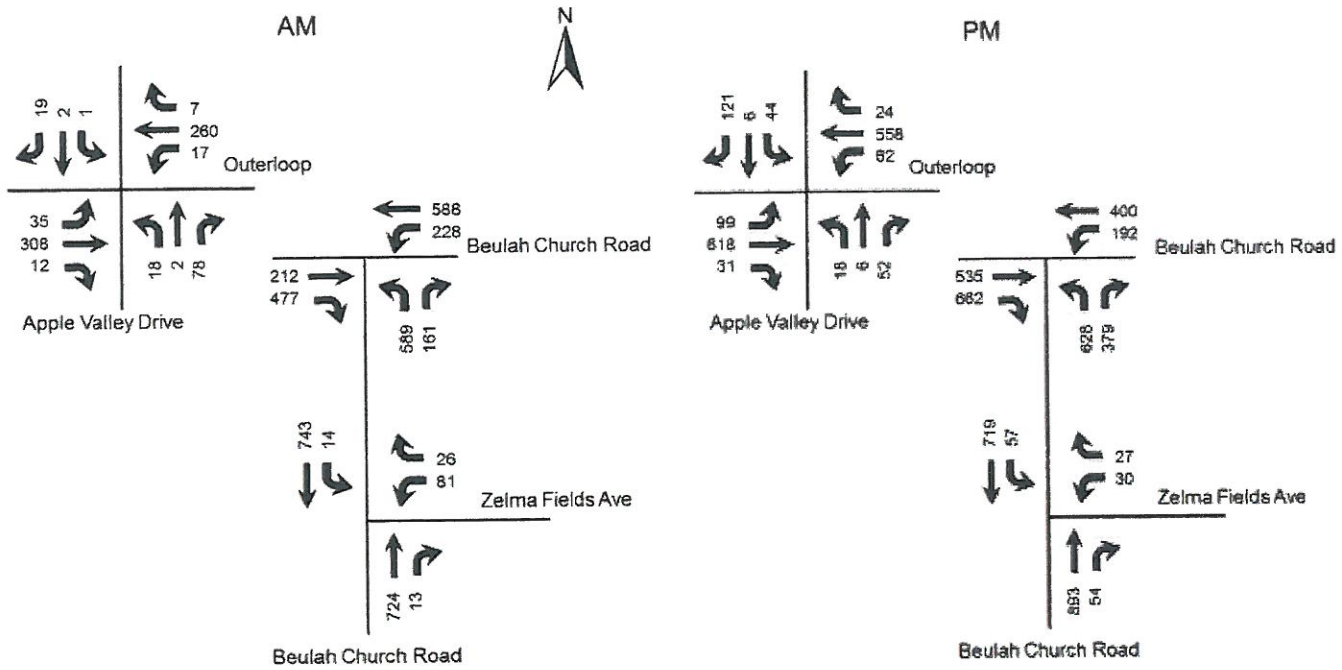


Figure 3. 2018 Peak Hour No Build

TRIP GENERATION

The Institute of Transportation Engineers Trip Generation Manual, 9th Edition contains trip generation rates for a wide range of developments. The land uses of "Apartments" and "Single-Family Detached Housing" were reviewed and determined to be the best match. The trip generation results are listed in **Table 1**. The results of the trip generation analysis are that this development will generate 85 a.m. peak hour trips and 109 p.m. peak hour trips. The trips were assigned to the highway network with the percentages shown in **Figure 4**. Additionally, forty percent of the traffic to/from Apple Valley and Outerloop east was assumed to be diverted thru Ashton Park. **Figure 5** shows the trips generated by this development and distributed throughout the road network for the year 2018 during the peak hours. **Figure 6** displays the individual turning movements for the year 2018 for the peak hours when the development is completed.

Table 1. Peak Hour Trips Generated by Site

	A.M. Peak Hour					P.M. Peak Hour				
Land Use	Trips	% In	% OUT	IN	OUT	Trips	% In	% OUT	IN	OUT
Apartments	56	20	80	11	45	76	65	35	49	27
Single Family	29	25	75	7	22	33	63	37	21	12
TOTAL	**85**			**18**	**67**	**109**			**70**	**39**

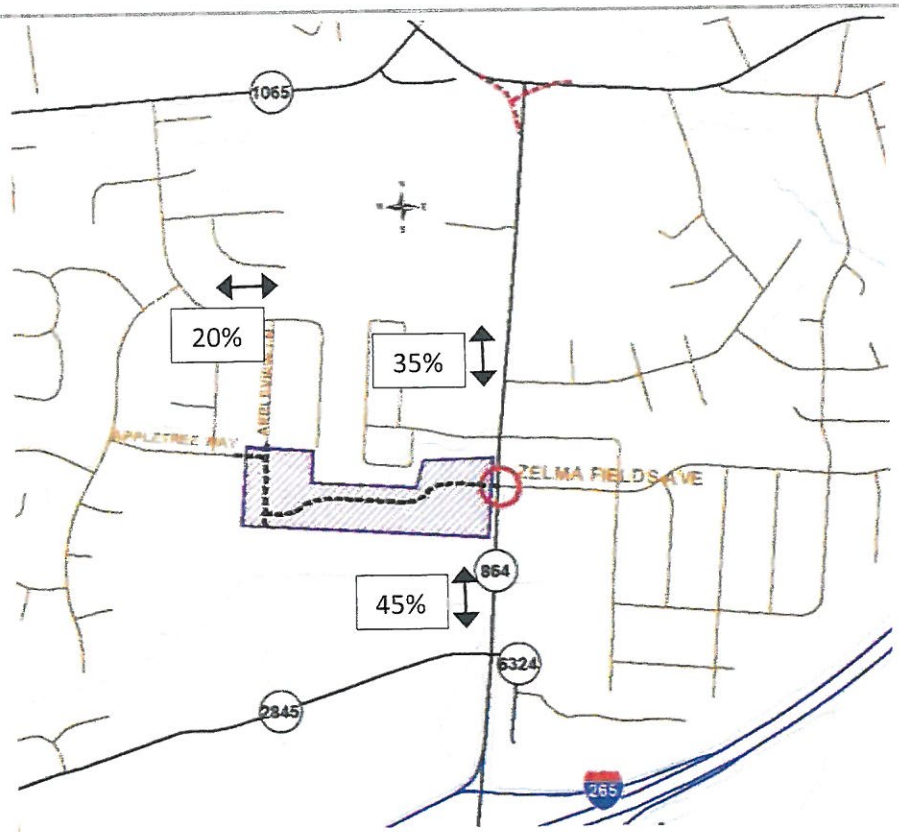


Figure 4. Trips Distribution Percentages

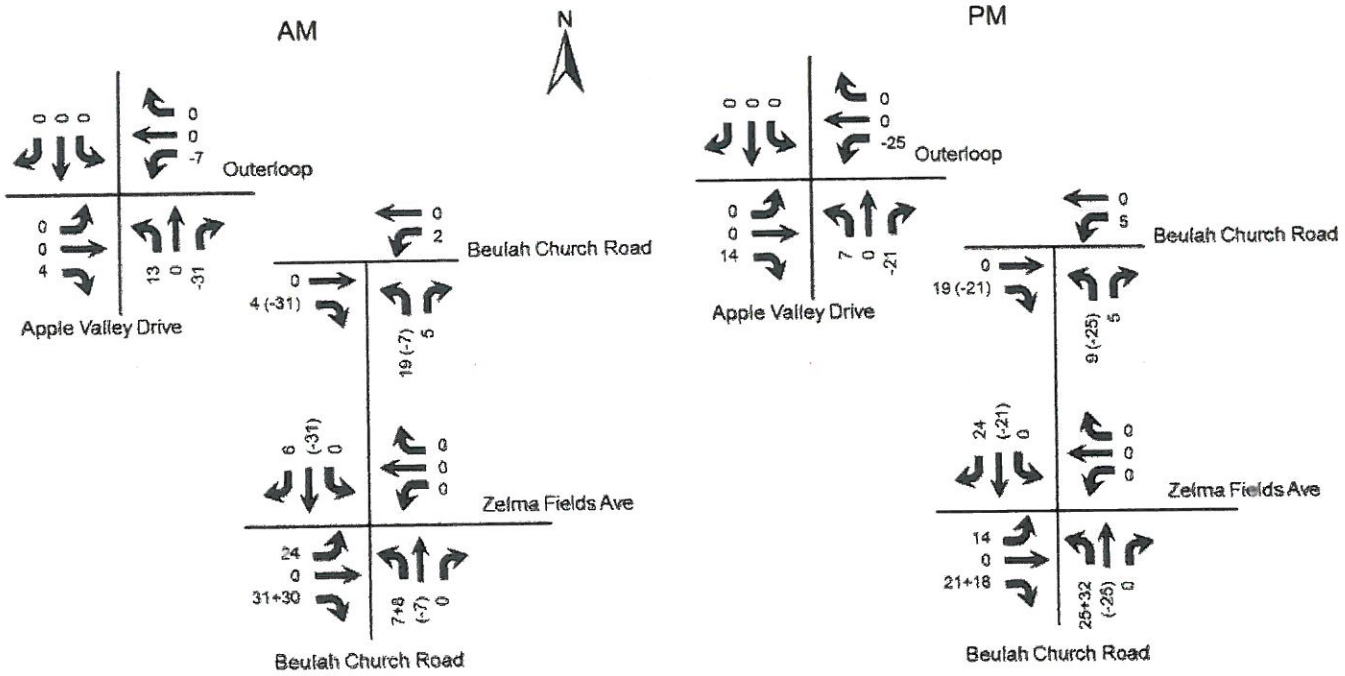


Figure 5. Peak Hour Trips Generated by Site

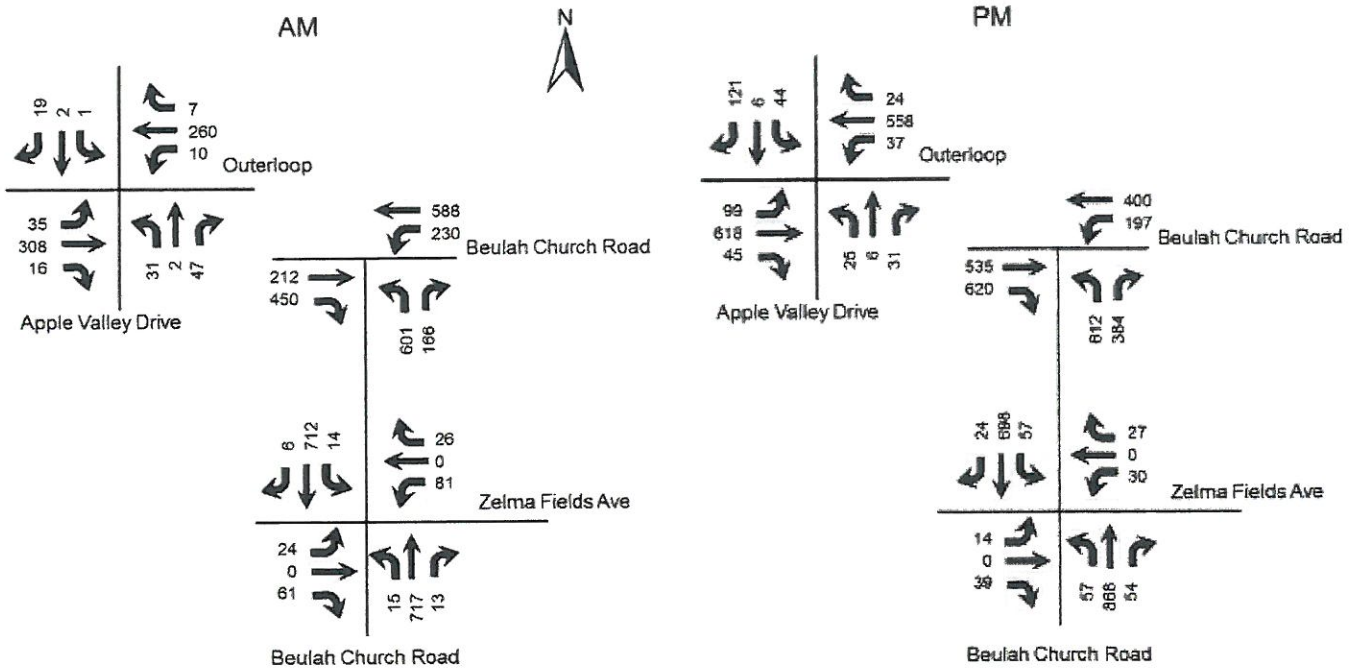


Figure 6. 2018 Peak Hour Build

ANALYSIS

The qualitative measure of traffic operations for a roadway facility or intersection is evaluated by assigning a "Level of Service" or LOS. Level of Service is a ranking scale from A through F, "A" is the best operating condition and "F" is the worst. LOS results depend upon the facility that is analyzed. In this case, the LOS is based upon the total delay experienced at an intersection.

To evaluate the impact of the proposed development, the average vehicle delays at the intersection were determined using procedures detailed in the Highway Capacity Manual, 2010 edition. Future delay and LOS were determined for the intersections using the Highway Capacity Software HCS 2010 Streets (version 6.65) and HCS+ (version 5.6).

Table 2. Peak Hour Level of Service

	A.M.			P.M.		
Approach	2014 Existing	2018 No Build	2018 Build	2014 Existing	2018 No Build	2018 Build
Beulah Church Road at Zelma Fields Ave						
Beulah Church Road Northbound	NA	NA	A 9.4	NA	NA	A 9.5
Beulah Church Road Southbound	A 9.3	A 9.5	A 9.4	B 10.3	B 10.6	B 10.4
Zelma Fields Ave Westbound	D 25.6	D 28.4	E 46.9	C 22.2	C 24.1	D 34.2
Entrance Eastbound			C 22.3			C 23.0
Beulah Church Road at Fegenbush Lane	**B 19.0**	**C 22.6**	**C 22.2**	**C 26.5**	**C 32.2**	**C 29.3**
Beulah Church Road Eastbound	C 24.5	C 27.4	C 27.4	C 27.6	C 31.6	C 30.1
Fegenbush Lane Westbound	B 14.8	B 17.2	B 17.7	B 15.5	B 17.6	B 17.1
Beulah Church Road Northbound	C 20.5	C 25.7	C 24.3	C 32.1	D 41.2	D 36.1
Outerloop at Apple Valley Drive	**B 15.3**	**B 18.0**	**B 18.3**	**B 17.2**	**B 18.9**	**B 19.6**
Outerloop Eastbound	A 7.6	A 7.8	A 7.2	B 13.1	B 13.8	B 13.5
Outerloop Westbound	B 15.5	B 19.1	C 20.2	B 16.7	B 18.8	C 20.5
Apple Valley Northbound	D 35.3	D 39.7	D 40.3	C 28.4	C 31.6	C 33.1
Outerloop Plaza Southbound	C 31.4	D 35.2	D 36.8	C 32.0	D 35.6	D 36.9

Key: Level of Service, Delay in seconds per vehicle

The Kentucky Transportation Cabinet (KYTC) evaluates the need for turn lanes using Highway Design Memorandum No. 03-09 dated July 28, 2009. The volumes for the 2018 Build condition does not meet the warrants for a southbound right turn on Beulah Church Road at the entrance.

KYTC has the intersection of Beulah Church Road and Fegenbush Lane scheduled for construction beginning in 2016. The completed project should fully operational in 2017. The project will relocate the intersection to the west and make the Fegenbush Lane to Beulah Church Road south the through movement. Beulah Church Road east will become the side road. Fegenbush Lane will be widened to four lanes through the Outerloop/Watterson Trail intersection.

CONCLUSIONS

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2018, there will be manageable impact to the existing highway network. The delays experienced will increase, but will continue to operate at an acceptable Level of Service. Zelma Fields Avenue will experience Level of Service E during the a.m. peak. However, a review of the volume to capacity ratio indicates in both scenarios the ratio is less than 0.6, indicating an additional lane is not needed on the approach.

APPENDIX

Traffic Counts

JACOBS
11940 Highway 42, Suite 1
Goshen, KY 40026

Counted by: Andy Wolak

File Name : Beulah ChurchAM
Site Code : 00011415
Start Date : 1/14/2015
Page No : 1

Groups Printed- Unshifted

	Beulah Church Road From North				Zelma Fields Avenue From East				Beulah Church Road From South				From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	171	0	174	28	0	12	40	0	127	0	127	0	0	0	0	341
07:15 AM	1	166	0	167	13	0	9	22	0	177	4	181	0	0	0	0	370
07:30 AM	4	183	0	187	23	0	2	25	0	196	4	200	0	0	0	0	412
07:45 AM	6	173	0	179	17	0	3	20	0	176	5	181	0	0	0	0	380
Total	14	693	0	707	81	0	26	107	0	676	13	689	0	0	0	0	1503
08:00 AM	1	149	0	150	20	0	12	32	0	133	4	137	0	0	0	0	319
08:15 AM	1	111	0	112	12	0	5	17	0	105	3	108	0	0	0	0	237
08:30 AM	3	120	0	123	17	0	11	28	0	96	3	101	0	0	0	0	252
08:45 AM	2	108	0	110	9	0	4	13	0	114	2	116	0	0	0	0	239
Total	7	488	0	495	58	0	32	90	0	450	12	462	0	0	0	0	1047
Grand Total	21	1181	0	1202	139	0	58	197	0	1126	25	1151	0	0	0	0	2550
Approch %	1.7	98.3	0		70.6	0	29.4		0	97.8	2.2		0	0	0		
Total %	0.8	46.3	0	47.1	5.5	0	2.3	7.7	0	44.2	1	45.1	0	0	0	0	

	Beulah Church Road From North				Zelma Fields Avenue From East				Beulah Church Road From South				From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	171	0	174	**28**	0	**12**	**40**	0	127	0	127	0	0	0	0	341
07:15 AM	1	166	0	167	13	0	9	22	0	177	4	181	0	0	0	0	370
07:30 AM	4	**183**	0	**187**	23	0	2	25	0	**196**	4	**200**	0	0	0	0	**412**
07:45 AM	6	173	0	179	17	0	3	20	0	176	**5**	181	0	0	0	0	380
Total Volume	14	693	0	707	81	0	26	107	0	676	13	689	0	0	0	0	1503
% App. Total	2	98	0		75.7	0	24.3		0	98.1	1.9		0	0	0		
PHF	.583	.947	.000	.945	.721	.000	.542	.669	.000	.862	.650	.861	.000	.000	.000	.000	.912

JACOBS
11940 Highway 42, Suite 1
Goshen, KY 40026

Counted by: Andy Wolak

File Name : Beulah Church PM
Site Code : 00011315
Start Date : 1/13/2015
Page No : 1

Groups Printed: Unshifted

	Beulah Church Road From North				Zelma Fields Ave From East				Beulah Church Road From South				From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	7	146	0	153	7	0	10	17	0	173	13	186	0	0	0	0	356
04:15 PM	10	164	0	174	6	0	9	15	0	197	16	213	0	0	0	0	402
04:30 PM	10	165	0	175	9	0	11	20	0	201	19	220	0	0	0	0	415
04:45 PM	11	170	0	181	6	0	7	13	0	203	18	221	0	0	0	0	415
Total	38	645	0	683	28	0	37	65	0	774	66	840	0	0	0	0	1588
05:00 PM	18	160	0	178	3	0	2	5	0	215	8	223	0	0	0	0	406
05:15 PM	19	176	0	194	12	0	7	19	0	214	9	223	0	0	0	0	436
05:30 PM	4	185	0	189	10	0	5	15	0	188	14	202	0	0	0	0	406
05:45 PM	8	160	0	168	10	0	4	14	0	213	13	226	0	0	0	0	408
Total	49	681	0	729	35	0	18	53	0	830	44	874	0	0	0	0	1656
Grand Total	86	1326	0	1412	63	0	55	118	0	1604	110	1714	0	0	0	0	3244
Apprch %	6.1	93.9	0		53.4	0	46.6		0	93.6	6.4		0	0	0		
Total %	2.7	40.9	0	43.5	1.9	0	1.7	3.6	0	49.4	3.4	52.8	0	0	0	0	

	Beulah Church Road From North				Zelma Fields Ave From East				Beulah Church Road From South				From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	10	165	0	175	9	0	**11**	**20**	0	201	**19**	220	0	0	0	0	415
04:45 PM	11	170	0	181	6	0	7	13	0	203	18	221	0	0	0	0	415
05:00 PM	**18**	160	0	178	3	0	2	5	0	**215**	8	**223**	0	0	0	0	406
05:15 PM	19	**176**	0	**194**	**12**	0	7	19	0	214	9	223	0	0	0	0	**436**
Total Volume	57	671	0	728	30	0	27	57	0	833	54	887	0	0	0	0	1472
% App. Total	7.8	92.2	0		52.6	0	47.4		0	93.9	6.1		0	0	0		
PHF	.792	.953	.000	.938	.625	.000	.614	.713	.000	.969	.711	.994	.000	.000	.000	.000	.969

Louisville Metro
Traffic Engineering
601 W Jefferson St
Louisville 40202

File Name Beulah Church Rd & Fegenbush Ln (2)
Site Code 05050234
Start Date 5/5/2010
Page No 6

	From North					Beulah Church Rd From East					Beulah Church Rd From South					Fegenbush Ln From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	121	69	0	190	33	0	173	0	206	74	46	1	0	121	477
07:30 AM	0	0	0	0	0	0	124	66	0	190	55	0	190	0	245	101	48	0	0	149	617
07:45 AM	0	0	0	0	0	0	199	41	0	240	39	0	93	0	132	129	43	0	0	172	584
08:00 AM	0	0	0	0	0	0	93	24	0	117	26	0	225	0	251	101	42	0	0	143	511
Total Volume	0	0	0	0	0	0	497	193	0	690	156	0	681	0	834	405	179	1	0	585	2089
% App. Total	0	0	0	0		0	72	28	0		21.5	0	78.5	0		69.2	30.6	0.2	0		
PHF	.000	.000	.000	.000	.000	.000	.781	.804	.000	.863	.872	.000	.830	.000	.857	.785	.932	.250	.000	.850	.921
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	0	0	0	0	0	70	27	0	97	16	0	66	0	82	52	56	0	0	108	287
01:15 PM	0	0	0	0	0	0	58	15	0	73	32	0	82	0	114	94	79	0	0	173	360
01:30 PM	0	0	0	0	0	0	70	22	0	92	21	0	80	0	101	64	54	0	0	118	311
01:45 PM	0	0	0	0	0	0	70	28	0	98	22	0	64	0	86	74	56	0	0	130	314
Total Volume	0	0	0	0	0	0	268	92	0	360	91	0	292	0	383	286	245	0	0	531	1274
% App. Total	0	0	0	0		0	74.4	25.6	0		23.8	0	76.2	0		53.9	46.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.957	.821	.000	.918	.711	.000	.890	.000	.841	.761	.774	.000	.000	.767	.888

Louisville Metro
Traffic Engineering
601 W Jefferson St
Louisville 40202

File Name Beulah Church Rd & Fegenbush Ln (2)
Site Code 05050234
Start Date 5/5/2010
Page No 7

	From North					Beulah Church Rd From East					Beulah Church Rd From South					Fegenbush Ln From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:30 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	75	44	0	119	97	0	121	0	218	160	122	0	0	282	619
04:45 PM	0	0	0	0	0	0	85	28	0	113	92	0	116	0	208	124	115	0	0	239	560
05:00 PM	0	0	0	0	0	0	94	53	0	147	64	0	143	0	207	137	95	0	0	232	586
05:15 PM	0	0	0	0	0	0	84	37	0	121	68	0	151	0	219	158	120	0	0	278	619
Total Volume	0	0	0	0	0	0	338	162	0	500	321	0	531	0	852	580	452	0	0	1032	2384
% App. Total	0	0	0	0		0	67.6	32.4	0		37.7	0	62.3	0		56.2	43.8	0	0		
PHF	.000	.000	.000	.000	.000	.000	.904	.764	.000	.850	.827	.000	.879	.000	.975	.875	.926	.000	.000	.897	.955

Traffic Counts
5/28/09

Interval Start Time	OuterLoop Plaza			Outer Loop			AppleValley			Outer Loop				
	From North			From East			From South			From West				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total	Hour
7:00	0	1	3	3	44	0	6	2	15	4	28	2	108	
7:15	0	2	2	3	48	0	3	0	23	6	64	3	154	
7:30	0	0	8	6	66	1	4	0	27	9	74	2	197	
7:45	0	0	4	2	57	0	6	1	13	13	60	3	159	618
8:00	1	0	5	6	45	6	5	1	15	7	57	4	152	662
8:15	2	0	9	1	46	4	9	0	11	16	39	3	140	648
8:30	3	0	9	0	44	6	7	0	13	9	55	0	146	597
8:45	3	2	15	3	55	4	6	0	7	14	49	1	159	597
16:00	12	3	32	22	120	8	6	0	6	28	134	12	383	
16:15	11	3	37	20	107	2	5	5	13	20	87	8	318	
16:30	5	2	29	15	116	5	4	2	12	27	112	5	334	
16:45	6	1	33	14	120	5	3	0	17	24	110	7	340	1375
17:00	11	2	39	20	108	7	3	2	7	14	105	8	326	1318
17:15	8	0	23	15	142	9	7	1	12	34	139	5	395	1395
17:30	20	1	23	11	109	3	4	1	18	27	143	10	370	1431
17:45	5	3	36	16	108	5	4	2	15	24	130	8	356	1447

AM PEAK

7:15	0	2	2	3	48	0	3	0	23	6	64	3	154
7:30	0	0	8	6	66	1	4	0	27	9	74	2	197
7:45	0	0	4	2	57	0	6	1	13	13	60	3	159
8:00	1	0	5	6	45	6	5	1	15	7	57	4	152
	1	2	19	17	216	7	18	2	78	35	255	12	662

PM PEAK

17:00	11	2	39	20	108	7	3	2	7	14	105	8	326
17:15	8	0	23	15	142	9	7	1	12	34	139	5	395
17:30	20	1	23	11	109	3	4	1	18	27	143	10	370
17:45	5	3	36	16	108	5	4	2	15	24	130	8	356
	44	6	121	62	467	24	18	6	52	99	517	31	1447

HCS Reports

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DBZ*	Intersection	
Agency/Co.	*Jacobs*	Jurisdiction	
Date Performed	*1/26/2015*	Analysis Year	*2015*
Analysis Time Period	*AM Peak*		
Project Description	*Ashton Park*		
East/West Street:	*Zelma Fields Ave*	North/South Street:	*Beulah Church Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		676	13	14	693	
Peak-Hour Factor, PHF	1.00	0.91	0.91	0.91	0.91	1.00
Hourly Flow Rate, HFR (veh/h)	0	742	14	15	761	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				81		26
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.91	1.00	0.91
Hourly Flow Rate, HFR (veh/h)	0	0	0	89	0	28
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (veh/h)		15		117				
C (m) (veh/h)		859		290				
v/c		0.02		0.40				
95% queue length		0.05		1.87				
Control Delay (s/veh)		9.3		25.6				
LOS		A		D				
Approach Delay (s/veh)	--	--	25.6					
Approach LOS	--	--	D					

Copyright © 2010 University of Florida, All Rights Reserved HCS+™ Version 5.6 Generated: 1/26/2015 3:34 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DBZ*	Intersection	
Agency/Co.	*Jacobs*	Jurisdiction	
Date Performed	*1/26/2015*	Analysis Year	*2018 No Build*
Analysis Time Period	*AM Peak*		

Project Description *Ashton Park*	
East/West Street: *Zelma Fields Ave*	North/South Street: *Beulah Church Road*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		724	13	14	743	
Peak-Hour Factor, PHF	1.00	0.91	0.91	0.91	0.91	1.00
Hourly Flow Rate, HFR (veh/h)	0	795	14	15	816	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				81		26
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.91	1.00	0.91
Hourly Flow Rate, HFR (veh/h)	0	0	0	89	0	28
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (veh/h)		15		117				
C (m) (veh/h)		821		268				
v/c		0.02		0.44				
95% queue length		0.06		2.09				
Control Delay (s/veh)		9.5		28.4				
LOS		A		D				
Approach Delay (s/veh)	--	--	28.4					
Approach LOS	--	--	D					

Copyright © 2010 University of Florida. All Rights Reserved HCS+™ Version 5.6 Generated: 1/26/2015 3:36 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DBZ*	Intersection	
Agency/Co.	*Jacobs*	Jurisdiction	
Date Performed	*1/26/2015*	Analysis Year	*2018 No Build*
Analysis Time Period	*AM Peak*		

Project Description *Ashton Park*	
East/West Street: *Zelma Fields Ave*	North/South Street: *Beulah Church Road*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		724	13	14	743	
Peak-Hour Factor, PHF	1.00	0.91	0.91	0.91	0.91	1.00
Hourly Flow Rate, HFR (veh/h)	0	795	14	15	816	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				81		26
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.91	1.00	0.91
Hourly Flow Rate, HFR (veh/h)	0	0	0	89	0	28
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (veh/h)		15		117				
C (m) (veh/h)		821		268				
v/c		0.02		0.44				
95% queue length		0.06		2.09				
Control Delay (s/veh)		9.5		28.4				
LOS		A		D				
Approach Delay (s/veh)	--	--	28.4					
Approach LOS	--	--	D					

Copyright © 2010 University of Florida, All Rights Reserved HCS+™ Version 5.6 Generated: 1/26/2015 3:36 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DBZ	Intersection	
Agency/Co.	Jacobs	Jurisdiction	
Date Performed	4/2/2015	Analysis Year	2018 Build
Analysis Time Period	AM Peak		

Project Description Ashton Park	
East/West Street: Zelma Fields Ave	North/South Street: Beulah Church Road
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	15	717	13	14	712	6
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	16	787	14	15	782	6
Percent Heavy Vehicles	1	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	24	0	61	81	0	26
Peak-Hour Factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Hourly Flow Rate, HFR (veh/h)	26	0	67	89	0	28
Percent Heavy Vehicles	1	0	1	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			1	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (veh/h)	16	15		117			93	
C (m) (veh/h)	836	827		197			300	
v/c	0.02	0.02		0.59			0.31	
95% queue length	0.06	0.06		3.30			1.28	
Control Delay (s/veh)	9.4	9.4		46.9			22.3	
LOS	A	A		E			C	
Approach Delay (s/veh)	--	--	46.9			22.3		
Approach LOS	--	--	E			C		

Copyright © 2007 University of Florida. All Rights Reserved HCS+™ Version 5.3 Generated: 4/2/2015 4:16 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*DBZ*	Intersection	
Agency/Co.	*Jacobs*	Jurisdiction	
Date Performed	*1/26/2015*	Analysis Year	*2015*
Analysis Time Period	*PM Peak*		
Project Description	*Ashton Park*		
East/West Street:	*Zelma Fields Ave*	North/South Street:	*Beulah Church Road*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		833	54	57	671	
Peak-Hour Factor, PHF	1.00	0.96	0.96	0.96	0.96	1.00
Hourly Flow Rate, HFR (veh/h)	0	867	56	59	698	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				30		27
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.96	1.00	0.96
Hourly Flow Rate, HFR (veh/h)	0	0	0	31	0	28
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (veh/h)		59		59				
C (m) (veh/h)		744		268				
v/c		0.08		0.22				
95% queue length		0.26		0.82				
Control Delay (s/veh)		10.3		22.2				
LOS		B		C				
Approach Delay (s/veh)	--	--	22.2					
Approach LOS	--	--	C					

Copyright © 2010 University of Florida, All Rights Reserved HCS+™ Version 5.6 Generated: 1/26/2015 3:44 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DBZ	Intersection	
Agency/Co.	Jacobs	Jurisdiction	
Date Performed	1/26/2015	Analysis Year	2018 No Build
Analysis Time Period	PM Peak		

Project Description Ashton Park	
East/West Street: Zelma Fields Ave	North/South Street: Beulah Church Road
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		893	54	57	719	
Peak-Hour Factor, PHF	1.00	0.96	0.96	0.96	0.96	1.00
Hourly Flow Rate, HFR (veh/h)	0	930	56	59	748	0
Percent Heavy Vehicles	0	--	--	1	--	--
Median Type	Two Way Left Turn Lane					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				30		27
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.96	1.00	0.96
Hourly Flow Rate, HFR (veh/h)	0	0	0	31	0	28
Percent Heavy Vehicles	0	0	0	1	0	1
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

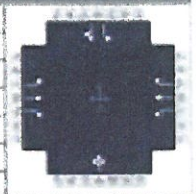
Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (veh/h)		59		59				
C (m) (veh/h)		705		247				
v/c		0.08		0.24				
95% queue length		0.27		0.91				
Control Delay (s/veh)		10.6		24.1				
LOS		B		C				
Approach Delay (s/veh)	--	--	24.1					
Approach LOS	--	--	C					

Copyright © 2010 University of Florida, All Rights Reserved HCS+™ Version 5.6 Generated: 1/26/2015 3:48 PM

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 7, 2015	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.94
Intersection	Apple Valley Drive	Analysis Year	2019 No Build	Analysis Period	1> 7:00
File Name	19 PM NB.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	99	618	31	62	558	24	18	6	52	44	6	121

Signal Information										
Cycle, s	84.1	Reference Phase	2							
Offset, s	0	Reference Point	End	Green	3.8	0.3	48.5	14.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0	4.3	3.6	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	9.6	55.1	9.3	54.8		19.6		19.6
Change Period, (Y+Rc), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (MAH), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	4.2	25.1	4.0	40.5		9.4		12.7
Green Extension Time (g_e), s	0.2	9.8	0.2	8.1		1.4		1.2
Phase Call Probability	0.94	1.00	0.92	1.00		1.00		1.00
Max Out Probability	0.00	0.10	0.00	0.31		0.02		0.06

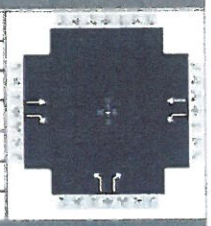
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	118	738	37	108	968	42		90		52	151	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1863	1610	1810	1863	1610		1400		1353	1622	
Queue Service Time (g_s), s	2.2	23.1	0.8	2.0	38.5	0.9		0.1		3.1	7.2	
Cycle Queue Clearance Time (g_c), s	2.2	23.1	0.8	2.0	38.5	0.9		7.4		10.7	7.2	
Green Ratio (g/C)	0.62	0.58	0.58	0.62	0.58	0.58		0.17		0.17	0.17	
Capacity (c), veh/h	244	1079	933	374	1073	928		288		190	272	
Volume to Capacity Ratio (X)	0.483	0.682	0.040	0.288	0.902	0.045		0.314		0.275	0.556	
Available Capacity (c_a), veh/h	479	1331	1150	614	1331	1150		486		366	483	
Back of Queue (Q), veh/ln (95th percentile)	2.1	12.6	0.4	1.1	18.7	0.5		2.9		1.9	5.1	
Queue Storage Ratio (RQ) (95th percentile)	0.10	0.32	0.07	0.22	0.47	0.04		0.71		0.58	0.64	
Uniform Delay (d1), s/veh	17.3	12.3	7.6	10.7	15.7	7.7		30.8		37.2	32.1	
Incremental Delay (d2), s/veh	1.5	1.1	0.0	0.2	4.4	0.0		0.9		1.1	2.5	
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (d), s/veh	18.8	13.3	7.6	10.9	20.2	7.8		31.6		38.3	34.6	
Level of Service (LOS)	B	B	A	B	C	A		C		D	C	
Approach Delay, s/veh / LOS	13.8	B		18.8	B		31.6	C		35.6	D	
Intersection Delay, s/veh / LOS	18.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.4	B	2.4	B
Bicycle LOS Score / LOS	2.0	A	1.8	A	0.6	A	0.8	A

Copyright © 2015 University of Florida. All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/7/2015 9:38:14 AM

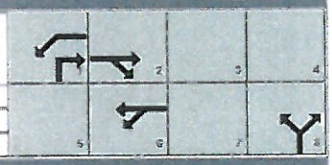
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 3, 2015	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.92
Intersection	Beulah Church Road	Analysis Year	2018 Build	Analysis Period	1> 7:00
File Name	18 PM B.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h		535	620	197	400		612		384			

Signal Information												
Cycle, s	96.3	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	9.5	33.7	37.4	0.0	0.0	0.0		
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	3.6	3.5	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	Off	Red	2.0	1.5	1.5	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		
Case Number		7.3	1.0	4.0		9.0		
Phase Duration, s		38.8	15.0	53.8		42.4		
Change Period, (Y+Rc), s		5.6	5.5	5.6		5.0		
Max Allow Headway (MAH), s		6.1	4.5	5.9		3.1		
Queue Clearance Time (g_s), s		25.7	8.9	16.3		36.2		
Green Extension Time (g_e), s		7.5	0.6	3.9		1.1		
Phase Call Probability		1.00	1.00	1.00		1.00		
Max Out Probability		0.15	0.02	0.00		0.82		

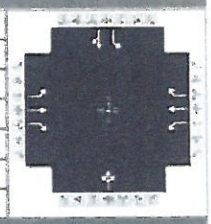
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		379	439	214	435		665		417			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1610	1810	1900		1810		1610			
Queue Service Time (g_s), s		15.7	23.7	6.9	14.3		34.2		17.3			
Cycle Queue Clearance Time (g_c), s		15.7	23.7	6.9	14.3		34.2		17.3			
Green Ratio (g/C)		0.34	0.34	0.47	0.50		0.39		0.49			
Capacity (c), veh/h		655	555	439	952		704		786			
Volume-to-Capacity Ratio (X)		0.578	0.790	0.487	0.457		0.945		0.531			
Available Capacity (c_a), veh/h		985	835	636	985		751		828			
Back of Queue (Q), veh/ln (95th percentile)		10.5	13.4	4.9	9.6		24.1		9.7			
Queue Storage Ratio (RQ) (95th percentile)		0.44	1.11	0.35	0.48		1.20		0.48			
Uniform Delay (d_1), s/veh		25.8	28.4	17.7	15.6		28.5		17.1			
Incremental Delay (d_2), s/veh		1.3	4.3	1.0	0.7		19.5		0.2			
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0		0.0		0.0			
Control Delay (d), s/veh		27.1	32.7	18.7	16.3		47.9		17.3			
Level of Service (LOS)		C	C	B	B		D		B			
Approach Delay, s/veh / LOS	30.1	C		17.1	B		36.1	D		0.0		
Intersection Delay, s/veh / LOS	29.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.3	B	0.7	A	2.3	B	2.3	B
Bicycle LOS Score / LOS	2.6	B	1.6	A		F		

Copyright © 2015 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/3/2015 10:40:07 AM

HCS 2010 Signalized Intersection Results Summary

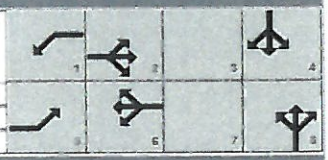
General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 2, 2015	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2015	Analysis Period	1> 7:00
File Name	15 AM.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	35	287	12	17	243	7	18	2	78	1	2	19

Signal Information			
Cycle, s	74.4	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.3	0.9	46.3	7.5	0.0	0.0
Yellow	3.5	0.0	4.3	3.6	0.0	0.0
Red	2.0	0.0	2.0	2.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	7.8	52.6	8.7	53.5		13.1		13.1
Change Period, ($Y+R_c$), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	2.6	8.3	3.1	40.1		7.2		7.3
Green Extension Time (g_e), s	0.1	8.4	0.1	7.0		0.6		0.6
Phase Call Probability	0.58	1.00	0.79	1.00		0.95		0.95
Max Out Probability	0.00	0.01	0.00	0.20		0.00		0.00

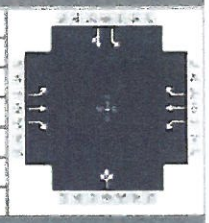
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	42	342	14	76	1087	31		117		1	25	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1603		1321	1634	
Queue Service Time (g_s), s	0.6	6.3	0.3	1.1	38.1	0.5		2.7		0.1	1.0	
Cycle Queue Clearance Time (g_c), s	0.6	6.3	0.3	1.1	38.1	0.5		5.2		0.1	1.0	
Green Ratio (*g/C*)	0.65	0.62	0.62	0.67	0.63	0.63		0.10		0.10	0.10	
Capacity (*c*), veh/h	204	1161	1003	744	1182	1022		218		137	164	
Volume-to-Capacity Ratio (*X*)	0.205	0.294	0.014	0.102	0.920	0.031		0.534		0.009	0.152	
Available Capacity (c_a), veh/h	512	1501	1297	1032	1501	1297		588		448	549	
Back of Queue (*Q*), veh/ln (95th percentile)	0.6	3.3	0.1	0.5	16.1	0.2		3.7		0.0	0.7	
Queue Storage Ratio (*RQ*) (95th percentile)	0.03	0.08	0.02	0.10	0.41	0.02		0.93		0.01	0.09	
Uniform Delay (d_1), s/veh	15.8	6.5	5.3	4.6	11.9	5.1		32.4		35.0	30.6	
Incremental Delay (d_2), s/veh	0.5	0.1	0.0	0.0	4.7	0.0		2.9		0.0	0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	16.3	6.6	5.3	4.6	16.6	5.1		35.3		35.0	31.2	
Level of Service (LOS)	B	A	A	A	B	A		D		D	C	
Approach Delay, s/veh / LOS	7.6	A		15.5	B		35.3	D		31.4	C	
Intersection Delay, s/veh / LOS	15.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.4	B	2.4	B
Bicycle LOS Score / LOS	1.1	A	1.0	A	0.7	A	0.5	A

Copyright © 2015 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/3/2015 10:40:07 AM

HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 3, 2015	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2018 No Build	Analysis Period	1> 7:00
File Name	18 AM NB.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	35	308	12	17	260	7	18	2	78	1	2	19

Signal Information			
Cycle, s	83.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.5	0.8	54.3	8.2	0.0	0.0
Yellow	3.5	0.0	4.3	3.6	0.0	0.0
Red	2.0	0.0	2.0	2.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	8.0	60.6	8.8	61.5		13.8		13.8
Change Period, ($Y+R_c$), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	2.6	9.1	3.1	49.6		7.8		7.9
Green Extension Time (g_e), s	0.1	10.0	0.1	5.6		0.6		0.6
Phase Call Probability	0.62	1.00	0.83	1.00		0.96		0.96
Max Out Probability	0.00	0.02	0.00	0.58		0.00		0.00

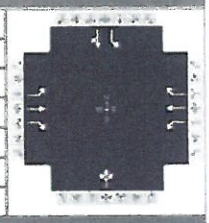
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	42	367	14	77	1171	32		117		1	25	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1603		1321	1634	
Queue Service Time (g_s), s	0.6	7.1	0.3	1.1	47.6	0.6		3.1		0.1	1.2	
Cycle Queue Clearance Time (g_c), s	0.6	7.1	0.3	1.1	47.6	0.6		5.8		5.9	1.2	
Green Ratio (*g/C*)	0.68	0.65	0.65	0.69	0.66	0.66		0.10		0.10	0.10	
Capacity (*c*), veh/h	173	1216	1051	745	1234	1067		209		124	161	
Volume-to-Capacity Ratio (*X*)	0.240	0.302	0.014	0.103	0.949	0.030		0.558		0.010	0.155	
Available Capacity (c_a), veh/h	445	1342	1160	999	1342	1160		526		390	490	
Back of Queue (Q), veh/ln (95th percentile)	0.9	3.8	0.1	0.5	20.6	0.2		4.3		0.0	0.8	
Queue Storage Ratio (*RQ*) (95th percentile)	0.04	0.10	0.02	0.10	0.52	0.02		1.06		0.01	0.11	
Uniform Delay (d_1), s/veh	19.9	6.3	5.1	4.4	12.8	4.8		36.4		39.4	34.4	
Incremental Delay (d_2), s/veh	0.7	0.1	0.0	0.0	7.7	0.0		3.3		0.0	0.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	20.6	6.4	5.1	4.5	20.4	4.8		39.7		39.4	35.0	
Level of Service (LOS)	C	A	A	A	C	A		D		D	C	
Approach Delay, s/veh / LOS	7.8	A		19.1	B		39.7	D		35.2	D	
Intersection Delay, s/veh / LOS	18.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.5	B	2.5	B
Bicycle LOS Score / LOS	1.2	A	1.0	A	0.7	A	0.5	A

Copyright © 2015 University of Florida. All Rights Reserved. HCS 2010 ™ Streets Version 6.65 Generated: 4/3/2015 10:40:07 AM

HCS 2010 Signalized Intersection Results Summary

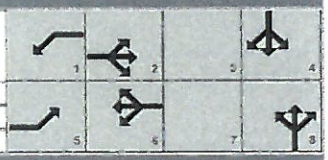
General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 3, 2015	Area Type	Other
Jurisdiction		Time Period	AM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2018 Build	Analysis Period	1> 7:00
File Name	18 AM B.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	35	308	16	10	260	7	31	2	47	1	2	19

Signal Information			
Cycle, s	84.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.5	0.2	56.8	7.1	0.0	0.0
Yellow	3.5	0.0	4.3	3.6	0.0	0.0
Red	2.0	0.0	2.0	2.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	8.0	63.1	8.2	63.3		12.7		12.7
Change Period, ($Y+R_c$), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	2.6	8.6	2.6	52.3		6.9		7.0
Green Extension Time (g_e), s	0.1	10.9	0.1	4.7		0.5		0.5
Phase Call Probability	0.62	1.00	0.66	1.00		0.94		0.94
Max Out Probability	0.00	0.03	0.00	0.75		0.00		0.00

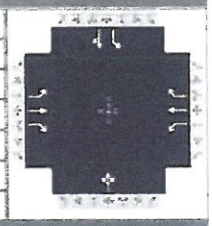
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	42	367	19	47	1213	33		95		1	25	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1563		1366	1634	
Queue Service Time (g_s), s	0.6	6.6	0.3	0.6	50.3	0.6		3.7		0.1	1.2	
Cycle Queue Clearance Time (g_c), s	0.6	6.6	0.3	0.6	50.3	0.6		4.9		5.0	1.2	
Green Ratio (*g/C*)	0.71	0.68	0.68	0.71	0.68	0.68		0.08		0.08	0.08	
Capacity (*c*), veh/h	166	1261	1090	760	1265	1093		191		120	137	
Volume-to-Capacity Ratio (*X*)	0.251	0.291	0.017	0.061	0.959	0.030		0.499		0.010	0.182	
Available Capacity (c_a), veh/h	435	1331	1150	1026	1331	1150		518		412	486	
Back of Queue (*Q*), veh/ln (95th percentile)	1.0	3.4	0.1	0.3	21.3	0.2		3.5		0.0	0.9	
Queue Storage Ratio (*RQ*) (95th percentile)	0.05	0.09	0.02	0.06	0.54	0.02		0.88		0.01	0.11	
Uniform Delay (d_1), s/veh	21.5	5.5	4.4	3.9	12.4	4.4		37.4		39.9	35.8	
Incremental Delay (d_2), s/veh	0.8	0.1	0.0	0.0	8.8	0.0		2.9		0.0	0.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	22.2	5.6	4.4	3.9	21.2	4.4		40.3		40.0	36.7	
Level of Service (LOS)	C	A	A	A	C	A		D		D	D	
Approach Delay, s/veh / LOS	7.2	A		20.2	C		40.3	D		36.8	D	
Intersection Delay, s/veh / LOS	18.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.0	B	2.2	B	2.5	B	2.5	B
Bicycle LOS Score / LOS	1.2	A	1.0	A	0.6	A	0.5	A

Copyright © 2010 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/3/2015 10:40:07 AM

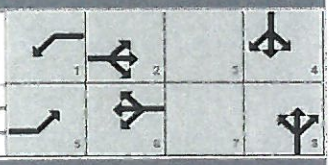
HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 3, 2015	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2015	Analysis Period	1> 7:00
File Name	15 PM.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	99	582	31	62	526	24	18	6	52	44	6	121

Signal Information												
Cycle, s	76.3	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	3.7	0.3	41.9	13.0	0.0	0.0		
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	0.0	4.3	3.6	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	0.0	2.0	2.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	9.5	48.5	9.2	48.2		18.6		18.6
Change Period, ($Y+R_c$), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	4.1	22.2	3.9	33.9		8.6		11.6
Green Extension Time (g_e), s	0.2	8.7	0.2	8.1		1.4		1.3
Phase Call Probability	0.92	1.00	0.89	1.00		1.00		1.00
Max Out Probability	0.00	0.05	0.00	0.14		0.01		0.04

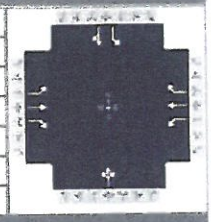
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	118	693	37	106	896	41		90		52	151	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1456		1353	1622	
Queue Service Time (g_s), s	2.1	20.2	0.8	1.9	31.9	0.9		0.1		2.8	6.5	
Cycle Queue Clearance Time (g_c), s	2.1	20.2	0.8	1.9	31.9	0.9		6.6		9.6	6.5	
Green Ratio (*g/C*)	0.60	0.55	0.55	0.60	0.55	0.55		0.17		0.17	0.17	
Capacity (*c*), veh/h	271	1030	890	380	1022	883		308		206	278	
Volume-to-Capacity Ratio (*X*)	0.435	0.673	0.041	0.278	0.877	0.046		0.294		0.255	0.544	
Available Capacity (c_a), veh/h	532	1465	1267	649	1465	1267		547		417	532	
Back of Queue (*Q*), veh/ln (95th percentile)	1.5	11.0	0.4	1.0	15.5	0.5		2.5		1.7	4.5	
Queue Storage Ratio (*RQ*) (95th percentile)	0.08	0.28	0.07	0.21	0.39	0.03		0.63		0.52	0.57	
Uniform Delay (d_1), s/veh	14.7	12.1	7.8	10.3	15.0	8.0		27.7		33.4	28.9	
Incremental Delay (d_2), s/veh	1.1	0.8	0.0	0.2	2.8	0.0		0.7		0.9	2.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	15.8	12.9	7.8	10.5	17.8	8.0		28.4		34.3	31.2	
Level of Service (LOS)	B	B	A	B	B	A		C		C	C	
Approach Delay, s/veh / LOS	13.1	B		16.7	B		28.4	C		32.0	C	
Intersection Delay, s/veh / LOS	17.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.4	B	2.4	B
Bicycle LOS Score / LOS	1.9	A	1.7	A	0.6	A	0.8	A

Copyright © 2015 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/7/2015 9:35:30 AM

HCS 2010 Signalized Intersection Results Summary

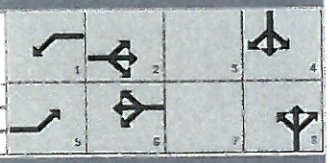
General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 7, 2015	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2018 No Build	Analysis Period	1> 7:00
File Name	18 PM NB.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	99	618	31	62	558	24	18	6	52	44	6	121

Signal Information			
Cycle, s	84.1	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.8	0.3	48.5	14.0	0.0	0.0
Yellow	3.5	0.0	4.3	3.6	0.0	0.0
Red	2.0	0.0	2.0	2.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	9.6	55.1	9.3	54.8		19.6		19.6
Change Period, (*Y*+*R*c), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	4.2	25.1	4.0	40.5		9.4		12.7
Green Extension Time (g_e), s	0.2	9.8	0.2	8.1		1.4		1.2
Phase Call Probability	0.94	1.00	0.92	1.00		1.00		1.00
Max Out Probability	0.00	0.10	0.00	0.31		0.02		0.06

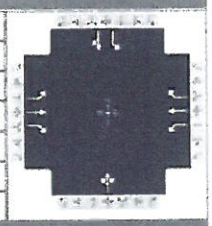
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	118	736	37	108	968	42		90		52	151	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1400		1353	1622	
Queue Service Time (g_s), s	2.2	23.1	0.8	2.0	38.5	0.9		0.1		3.1	7.2	
Cycle Queue Clearance Time (g_c), s	2.2	23.1	0.8	2.0	38.5	0.9		7.4		10.7	7.2	
Green Ratio (*g*/*C*)	0.62	0.58	0.58	0.62	0.58	0.58		0.17		0.17	0.17	
Capacity (*c*), veh/h	244	1079	933	374	1073	928		288		190	272	
Volume-to-Capacity Ratio (*X*)	0.483	0.682	0.040	0.288	0.902	0.045		0.314		0.275	0.556	
Available Capacity (c_a), veh/h	479	1331	1150	614	1331	1150		486		366	483	
Back of Queue (*Q*), veh/ln (95th percentile)	2.1	12.6	0.4	1.1	18.7	0.5		2.9		1.9	5.1	
Queue Storage Ratio (*RQ*) (95th percentile)	0.10	0.32	0.07	0.22	0.47	0.04		0.71		0.58	0.64	
Uniform Delay (d_1), s/veh	17.3	12.3	7.6	10.7	15.7	7.7		30.8		37.2	32.1	
Incremental Delay (d_2), s/veh	1.5	1.1	0.0	0.2	4.4	0.0		0.9		1.1	2.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	18.8	13.3	7.6	10.9	20.2	7.8		31.6		38.3	34.6	
Level of Service (LOS)	B	B	A	B	C	A		C		D	C	
Approach Delay, s/veh / LOS	13.8	B		18.8	B		31.6	C		35.6	D	
Intersection Delay, s/veh / LOS	18.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.4	B	2.4	B
Bicycle LOS Score / LOS	2.0	A	1.8	A	0.6	A	0.8	A

Copyright © 2015 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/7/2015 9:38:14 AM

HCS 2010 Signalized Intersection Results Summary

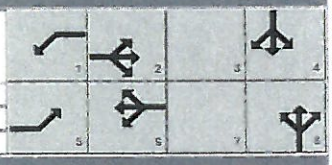
General Information				Intersection Information	
Agency	Jacobs			Duration, h	0.25
Analyst	DBZ	Analysis Date	Apr 7, 2015	Area Type	Other
Jurisdiction		Time Period	PM Peak	PHF	0.84
Intersection	Apple Valley Drive	Analysis Year	2018 Build	Analysis Period	1> 7:00
File Name	18 PM B.xus				
Project Description	Ashton Park II				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	99	618	45	37	558	24	25	6	31	44	6	121

Signal Information			
Cycle, s	87.3	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.2	1.0	51.1	14.6	0.0	0.0	
Yellow	3.5	0.0	4.3	3.6	0.0	0.0	
Red	2.0	0.0	2.0	2.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		8.0		6.0
Phase Duration, s	9.7	58.4	8.7	57.4		20.2		20.2
Change Period, ($Y+R_c$), s	5.5	6.3	5.5	6.3		5.6		5.6
Max Allow Headway (*MAH*), s	4.0	3.9	4.0	3.9		5.2		5.2
Queue Clearance Time (g_s), s	4.2	25.1	3.2	43.4		10.1		13.5
Green Extension Time (g_e), s	0.2	10.2	0.1	7.8		1.3		1.1
Phase Call Probability	0.94	1.00	0.80	1.00		1.00		1.00
Max Out Probability	0.00	0.11	0.00	0.41		0.02		0.07

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	118	736	54	66	992	43		74		52	151	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810	1863	1610	1810	1863	1610		1065		1384	1622	
Queue Service Time (g_s), s	2.2	23.1	1.2	1.2	41.4	1.0		0.6		3.2	7.5	
Cycle Queue Clearance Time (g_c), s	2.2	23.1	1.2	1.2	41.4	1.0		8.1		11.5	7.5	
Green Ratio (*g/C*)	0.63	0.60	0.60	0.62	0.58	0.58		0.17		0.17	0.17	
Capacity (*c*), veh/h	233	1109	959	373	1088	940		238		185	274	
Volume-to-Capacity Ratio (*X*)	0.507	0.663	0.056	0.176	0.912	0.045		0.311		0.283	0.552	
Available Capacity (c_a), veh/h	457	1280	1106	618	1280	1106		410		347	464	
Back of Queue (*Q*), veh/ln (95th percentile)	2.3	12.5	0.6	0.7	20.4	0.5		2.4		2.0	5.3	
Queue Storage Ratio (*RQ*) (95th percentile)	0.12	0.32	0.11	0.14	0.52	0.04		0.61		0.61	0.66	
Uniform Delay (d_1), s/veh	18.6	11.8	7.4	10.2	16.2	7.8		32.0		38.9	33.3	
Incremental Delay (d_2), s/veh	1.7	1.1	0.0	0.1	5.6	0.0		1.0		1.2	2.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	20.3	12.9	7.4	10.3	21.7	7.8		33.1		40.1	35.7	
Level of Service (LOS)	C	B	A	B	C	A		C		D	D	
Approach Delay, s/veh / LOS	13.5	B		20.5	C		33.1	C		36.9	D	
Intersection Delay, s/veh / LOS	19.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.1	B	2.2	B	2.4	B	2.4	B
Bicycle LOS Score / LOS	2.0	A	1.7	A	0.6	A	0.8	A

Copyright © 2015 University of Florida, All Rights Reserved. HCS 2010™ Streets Version 6.65 Generated: 4/7/2015 9:41:50 AM

BARDENWERPER, TALBOTT & ROBERTS, PLLC
ATTORNEYS AT LAW
BUILDING INDUSTRY ASSOCIATION OF GREATER LOUISVILLE BLDG • 1000 N. HURSTBOURNE PARKWAY • SECOND FLOOR • LOUISVILLE, KENTUCKY 40223
(502) 426-6688 • WWW.BARDLAW.NET

STATEMENT OF COMPLIANCE WITH THE APPLICABLE GUIDELINES AND POLICIES OF THE CORNERSTONE 2020 COMPREHENSIVE PLAN

Applicant:	Blacketer Company
Owner:	Donald L. Craig The Revocable Trust Agreement with Margaret D. Greenwell
Location:	7508, 7506, 7504 and 7504 Beulah Church Rd
Proposed Rezoning/Use:	Rezoning from R-4 to R-5A
Engineers, Land Planners and Landscape Architects:	Land Design & Development

INTRODUCTORY STATEMENT

This is an application for an apartment community that mirrors the apartment community on the north side of "The Fountains" condominiums. It is proposed by the same developer that built the apartments on the opposite side of The Fountains, and the building designs will be nearly identical. The PowerPoint presentation for the neighborhood meeting, along with the site plan, accompanies this application as evidence of that. This application also includes a standard single-family subdivision. The apartment community requires R-5A zoning, whereas the single-family community will remain R-4 zoning – both the rezoning and development plan accompanying same are compatible with the form of development that has occurred already in the immediate vicinity. After all, as said, there already exists The Fountains "stacked" form of a apartment-style condominium community, plus the referenced apartment community to the north. And part of the Apple Valley subdivision to the west is zoned R-6. Beulah Church Road leads to and from the Snyder Freeway, thus this area is a good location, fronting as this site does on a minor arterial or major collector level roadway, which takes traffic to and from places of employment and places of retail shopping along the Outer Loop and such places of worship as the large Highview Baptist Church not far north of this site.

GUIDELINE 1: COMMUNITY FORM

The Community Form that this property is located in is the Suburban Neighborhood Form District, which is characterized by predominantly residential uses that vary from low to high density and that blend compatibility into the existing landscape and neighborhood areas. These proposed apartment and single-family uses, as noted above, adjoin multi-family zoning and single-family uses. Plus they are compatible in terms of layout, design and density/intensity to adjoining and nearby uses. Because the Suburban Neighborhood Form recommends diverse housing types, this application does that: adds another small apartment community to the successful one to the north that this same developer recently built, plus some home sites typical

of what builders/developers are wanting to build today for the market that is out there such as this. This is proposed as a low to medium density use, not close to high density, which would in and of itself probably be appropriate, given its location on an arterial or major collector roadway such as Beulah Church Road which is in close proximity to areas of shopping, worship, schools, etc.

Also in conformance with this Guideline of the Comprehensive Plan, the pattern of streets and connectivity are also shown on the site plan, together with street trees, sidewalks and so forth.

GUIDELINE 2: CENTERS

The Intents and applicable Policies 1, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15 and 16 of this Guideline all pertain to the notion of "centers", which is a Comprehensive Plan concept which encourages mixed land uses organized around compact activity centers that are existing, proposed or planned in order to promote efficient uses of land, lower utility costs, reduce commuting time and transportation related air pollution, provide an opportunity for a mixture of residential development and housing types, and add to and encourage vitality and a sense of place in neighborhoods. Within Suburban Neighborhood Form Districts, activity centers should be located at street intersections with at least one of the intersecting streets classified as collector or above. Beulah Church Road is probably a minor arterial or at least a major collector. The entrance to this proposed community of multi- and single-family residences will probably lead to Apple Valley subdivision, such that that entrance road will become a major local street or collector in its own right. For the location of this somewhat higher density/intensity series of residential uses, from this site on the south moving north through The Fountains condominium community to the apartment community on the north of that, this larger development takes on the character of a small Neighborhood Center at this location.

Policies 4 and 5 encourage compact and mixed uses, which this proposal ensures, both by virtue of the site design, including the somewhat smaller single-family lots that are otherwise allowed in the R-4 zoning district. That assures a buyer seeking a higher level of amenities on a smaller lot. Guidelines 6 and 7 encourage a mixture of residential and commercial uses, proximate one as to the other. That is what is shown on this site plan in this case.

Policies 11, 13, 14 and 15 recommend that centers be designed taking into account the development patterns and designs of nearby development projects and also assure well screened and shared parking, well identified safe access, as well as use of existing utilities when possible. All of that occurs in this particular case.

GUIDELINE 3: COMPATIBILITY

The Intents and applicable Policies 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 21, 22, 23, 24, 28 and 29 of this Guideline all pertain to the issues of how to ensure that land uses and transportation facilities are located, designed and constructed so as to be compatible with nearby land uses and to minimize impacts to residential areas, schools and other sensitive features.

This application complies with the Intents and applicable Policies of this Guideline as follows. For example, as said above, the design of this proposed apartment community and single-family subdivision take into account what adjoins them while looking at the way these uses were laid out, as well as the way that the buildings were designed. In this case, materials similar to those

used in the existing apartment community and nearby homes will be utilized on all structures, which is evident in immediate adjoining neighborhoods. Buildings will be one and two-story, not taller. Odors, traffic, noise and commercial type lighting will not be involved in these developments, such that those kinds of impacts will not exist. Lighting will be residential in style and design. Visually speaking, the proposed communities will be compatible with those adjoining it and typical of the area. Again, this is not high density zoning, but it is a type different than standard R-4 single-family housing. But then the current market for new housing does not call for large lot standard single-family housing, but rather for more multi-family and for smaller single-family lots. As evident on the development plan accompanying this application, good transitions, appropriate setbacks, landscape buffers, building heights that do not require variances, suitable LDC compliant signage are all involved in this application and again, evident on the development plan.

GUIDELINES 4 AND 13: OPEN SPACE AND LANDSCAPE CHARACTER

The Intents and applicable Policies 1, 3, 6 and 7 of this Guideline 4 and Policies 1, 2 and 5 of Guideline 13 all pertain to the idea of ensuring well designed, permanently protected open spaces within communities, as well as landscape throughout these communities that protect and enhance the natural environment.

This application complies with these Intents and applicable Policies of this Guideline as follows. Green space and open areas are included within the apartment community. Throughout both the multi-family and single-family zoned communities, there will be abundant trees appropriately located to provide for internal aesthetics, screening and buffering, as well as to all of the requirements pertaining to the tree canopies and landscaping within the LDC.

GUIDELINE 6: ECONOMIC GROWTH AND SUSTAINABILITY

The Intents and applicable Policies 1, 3, 5 and 6 of this Guideline all pertain to the provision of a positive culture for attracting and sustaining a variety of land uses, in this case residential.

This application complies with the Intents and applicable Policies of this Guideline as follows. This is an infill development, meaning that is adjoined by other existing like-kind development for which there is a significant market demand.

GUIDELINES 7, 8 AND 9: CIRCULATION, TRANSPORTATION FACILITIES, AND BICYCLE, PEDESTRIAN AND TRANSIT ACCESS

The Intents and applicable Policies 1, 2, 4, 6, 9, 10, 11, 13, 14, 15 and 16 of Guideline 7, plus Policies 7, 8, 9, 10 and 11 of Guideline 8, plus Policies 1, 2, 3, 4 and 5 of Guideline 9 all pertain to the issues of traffic impacts, access to and circulation through proposed developments and the provision of access by other means of transportation than simply the automobile. As these are low to medium density single-family and multi-family developments along a road that has adequate traffic-carrying capacity, development of this site for residential communities of this type is appropriate. If additional road improvements are required, and if those impacts are proportionate to whatever the road improvements requirements are, they will be provided. That could include additional right-of-way dedication and a center turn lane. But probably nothing more than that would be required. Metro Transportation Planning must review the development

plan filed with this application prior to docketing for the LD&T Committee meeting, which is even before the full-blown Planning Commission public hearing. Consequently, this application will not be reviewed until such time as that agency has determined that, as said, the existing external road system has adequate traffic-carrying capacity as it is believed to have and that access to the site, through the site and to adjoining properties is provided in accordance with the LDC and these Comp Plan Policies. Sidewalks will be provided along Beulah Church Road and internally. Bicycle accommodations will be made within the multi-family development.

GUIDELINES 10 AND 11: FLOODING AND STORMWATER PLUS WATER QUALITY

The Intents and applicable Policies 1, 3, 6, 7, 10 and 11 of Guideline 10 and Policies 3, 5 and 8 of Guideline 11 pertain to the issues of effectively managing stormwater and preventing the degradation of water quality due to water pollution and soil erosion and sedimentation.

This application complies with the Intents and applicable Policies of these Guidelines as follows. MSD has provided regulations that pertain to soil erosion and sedimentation control, which is a construction detail that will be required of this applicant in connection with its developments of these multi-family and single-family communities. Among other things, post-development rates of runoff may not exceed pre-development conditions, and they will not do so in this case. Ordinarily that is accomplished through on-site detention as here. MSD new water quality guidelines will also be accommodated through the design of one or several of multiple measures that are now available to assure best management practices in this regard.

GUIDELINE 12: AIR QUALITY

The Intents and applicable Policies 1, 2, 4, 6, 8 and 9 this Guideline all pertain to the issues of assuring no adverse consequences on air quality and, when possible, even taking measures to improve same.

This application complies with the Intents and applicable Policies of this Guideline as follows. Generally speaking, by filling in the infill, so to speak, which means building next to development that already exists as opposed to in outlying areas, for example outside the Snyder Freeway, is important as a means to assure reduced vehicle miles traveled. That tends to help with air quality because people driving from their homes to places of work, to shopping, to places of worship, to school and so forth will be more proximately located relative to same. That will be the case here.

GUIDELINE 14: INFRASTRUCTURE

The Intents and applicable Policies 2, 3, 4, 6 and 7 of this Guideline all pertain to assuring adequate infrastructure to support a new development project.

This application complies with the Intents and applicable Policies of this Guideline as follows. This site was chosen because it has sanitary sewer service available. Also, water and electric service are available at the site without the need for lengthy extensions. It is always more cost-effective for the developer, and better for the public utilities when existing utility infrastructure can be utilized. And, as said, Beulah Church Road has adequate traffic-carrying capacity for limited amounts of added, especially residential, developments where infill sites like this exist.

General Waiver Justification:

In order to justify approval of any waiver, the Planning Commission or Board of Zoning Adjustment considers four criteria. Please answer all of the following questions. Use additional sheets if needed. A response of yes, no, or N/A is not acceptable.

Waiver of: Section 10.2 to (1) waive the 25 ft LBA adjacent to the Fountains Condominium property along the shared property line with Tract 1; (2) to reduce the 25 ft LBA to 10 ft along the shared property line between Tract 2 and the Fountains Condo Council property and to waive the dumpster and pavement encroachments; and (3) to reduce the required 8 ft screen to 6 ft along the shared property line between Tract 2 and the Fountains Condo Council property line.

Explanation of Waiver:

1. The waiver will not adversely affect adjacent property owners because along this eliminated LBA is a multi-family development on the adjoining property with its own LBA, and on this one are a 0.41 acre open space, 6 single family lots and only two small 5,300 sq ft apartment buildings. A 6 ft privacy fence will be provided to meet the screening requirement along the shared property line between the Fountain Condo Council property and Tract 2.

2. The waiver will not violate the Comprehensive Plan for all the set forth in the Detailed Statement of Compliance with all applicable Guidelines and Policies of the Cornerstone 2020 Comprehensive Plan filed with the rezoning application.

3. The extent of waiver of the regulation the minimum necessary to afford relief to the applicant because there is added setback and open space in the above referenced yards next to the adjoining multi-family property.

4. Strict application of the provisions of the regulation will deprive the applicant of a reasonable use of the land or would create an unnecessary hardship on the applicant because the applicant would end up moving everything to the south, changing configurations of buildings, reducing parking, and changing the configuration of Zelma Fields Avenue.

BARDENWERPER, TALBOTT & ROBERTS, PLLC
ATTORNEYS AT LAW
BUILDING INDUSTRY ASSOCIATION OF GREATER LOUISVILLE BLDG • 1000 N. HURSTBOURNE PARKWAY • SECOND FLOOR • LOUISVILLE, KENTUCKY 40223
(502) 426-6688 • WWW.BARDLAW.NET

PROPOSED FINDINGS OF FACT REGARDING COMPLIACE WITH ALL APPLICABLE GUIDELINES AND POLICIES OF THE CORNERSTONE2020 COMPREHENSIVE PLAN

Applicant:	Ashton Park, LLC
Owner:	The Revocable Trust Agreement with Margaret D. Greenwell
Location:	7508, 7506, and 7504 Beulah Church Rd
Proposed Rezoning/Use:	Rezoning from R-4 to R-5A
Engineers, Land Planners and Landscape Architects:	Land Design & Development

The Louisville Metro Planning Commission, having heard testimony before its Land Development & Transportation Committee, in the Public Hearing held on April 16, 2015 and having reviewed evidence presented by the applicant and the staff's analysis of the application, make the following findings:

INTRODUCTORY STATEMENT

WHEREAS, this is an application for an apartment community and single family subdivision that essentially mirror the apartment community on the north side of "The Fountains" condominiums and the adjoining existing residential subdivision; this mixed single family and apartment community is proposed by the same developer that built the apartments on the opposite side of The Fountains, and the apartment building designs will be nearly identical; the PowerPoint presentation shown at the Public Hearing, along with the site plan, accompanying this application is evidence of that; the apartment community requires R-5A zoning, whereas the single-family community will remain R-4 zoning; both the rezoning and development plan accompanying the R-5A zoning as well as the preliminary subdivision plan relevant to the R-4 zoning are compatible with the form of development that has occurred already in the immediate vicinity; there already exists The Fountains "stacked" form of an apartment-style condominium community, plus the referenced apartment community to the north and part of the Apple Valley subdivision to the west is zoned R-6; Beulah Church Road leads to and from the Snyder Freeway, thus this area is a good location, fronting as this site does on a minor arterial or major collector level roadway, which takes traffic to and from places of employment and places of retail shopping along the Outer Loop and such places of worship as the large Highview Baptist Church not far north of this site; and

GUIDELINE 1: COMMUNITY FORM

WHEREAS, the Community Form that this property is located in is the Suburban Neighborhood Form District, which is characterized by predominantly residential uses that vary from low to

PROPOSED FINDING FOR THE WAIVER

Waiver of: Section 10.2 to (1) waive the 25 ft LBA adjacent to the Fountains Condominium property along the shared property line with Tract 1; (2) to reduce the 25 ft LBA to 10 ft along the shared property line between Tract 2 and the Fountains Condo Council property and to waive the dumpster and pavement encroachments; and (3) to reduce the required 8 ft screen to 6 ft along the shared property line between Tract 2 and the Fountains Condo Council property line.

WHEREAS, the waiver will not adversely affect adjacent property owners because along this eliminated LBA is a multi-family development on the adjoining property with its own LBA, and on this one are a 0.41 acre open space, 6 single family lots and only two small 5,300 sq ft apartment buildings; and a 6 ft privacy fence will be provided to meet the screening requirement along the shared property line between the Fountain Condo Council property and Tract 2; and

WHEREAS, the waiver will not violate the Comprehensive Plan for all the set forth in the Detailed Statement of Compliance with all applicable Guidelines and Policies of the Cornerstone 2020 Comprehensive Plan filed with the rezoning application; and

WHEREAS, the extent of waiver of the regulation the minimum necessary to afford relief to the applicant because there is added setback and open space in the above referenced yards next to the adjoining multi-family property; and

WHEREAS, strict application of the provisions of the regulation will deprive the applicant of a reasonable use of the land or would create an unnecessary hardship on the applicant because the applicant would end up moving everything to the south, changing configurations of buildings, reducing parking, and changing the configuration of Zelma Fields Avenue;

NOW, THEREFORE, the Louisville Metro Planning Commission hereby approves this Waiver.

e:\client folder\blacketer-bright\beulah church\nov 2014 zone change\application\proposed findings of fact.doc