

Louisville Metro Planning Commission  
April 16, 2015

Docket No 14ZONE1057

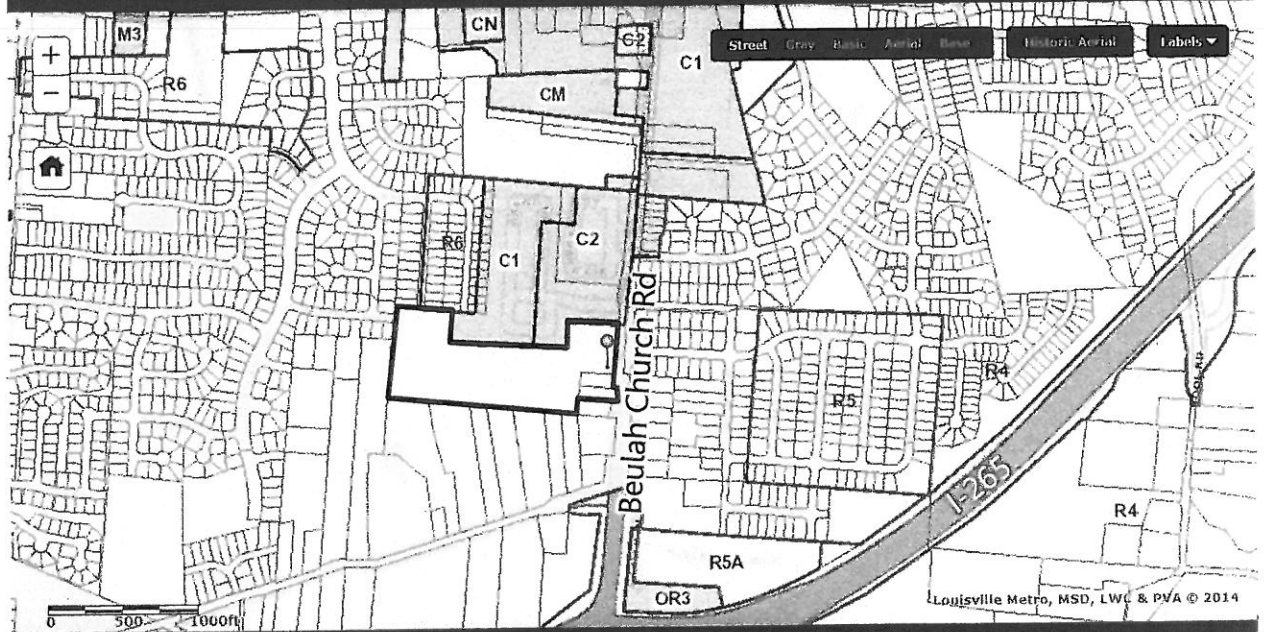
Partial zone change from R-4 to R-5A for apartments with landscape waiver combined with a proposed single-family subdivision on property located at 7508, 7506 and 7504 Beulah Church Road

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

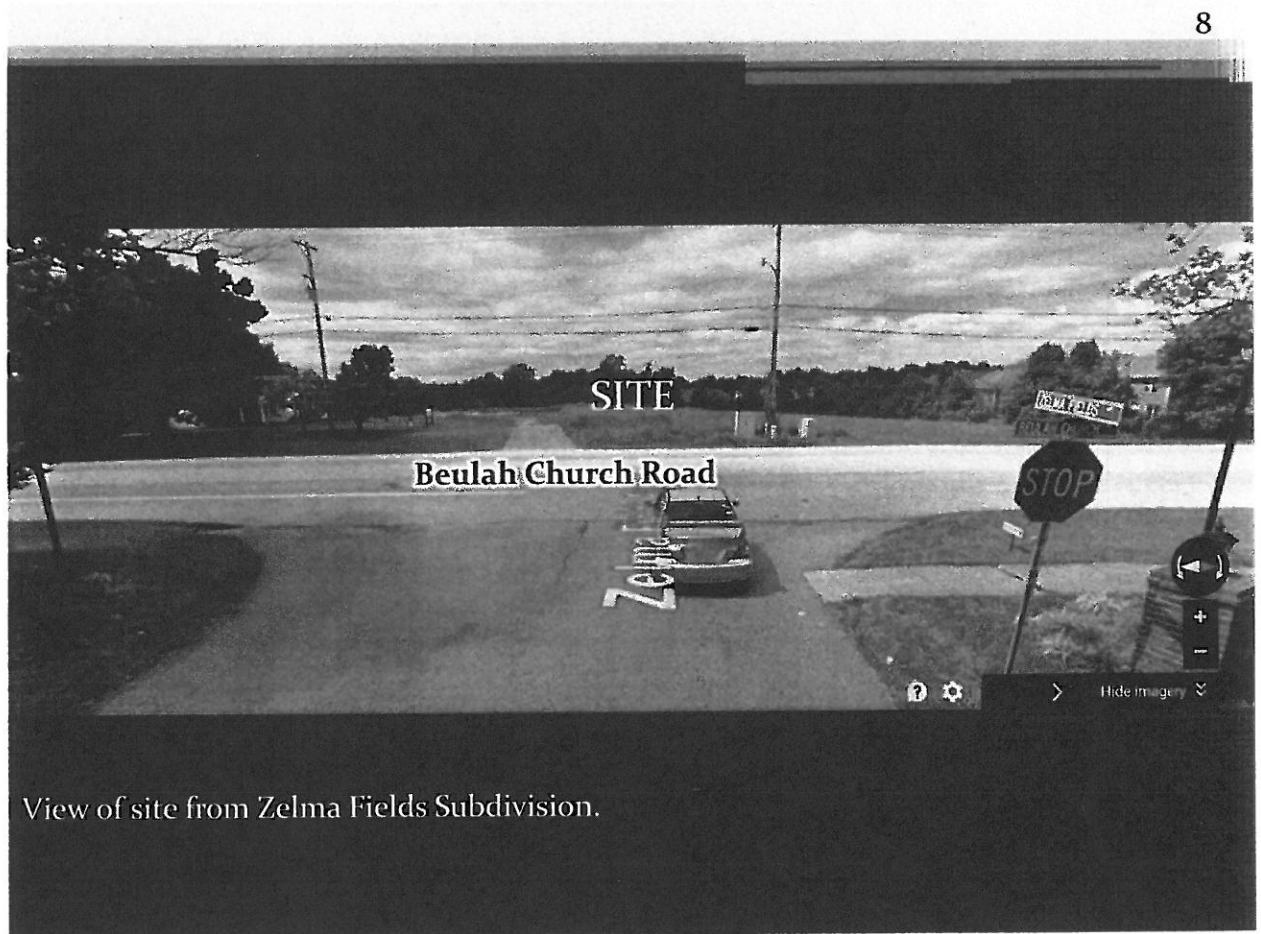
Attorneys: Bardenwerper Talbott & Roberts, PLLC  
Land Planners, Landscape Architects & Engineers: Land Design & Development, Inc.

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2. Aerial photographs of the site and surrounding area
3. Ground level photographs of the site and surrounding area
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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

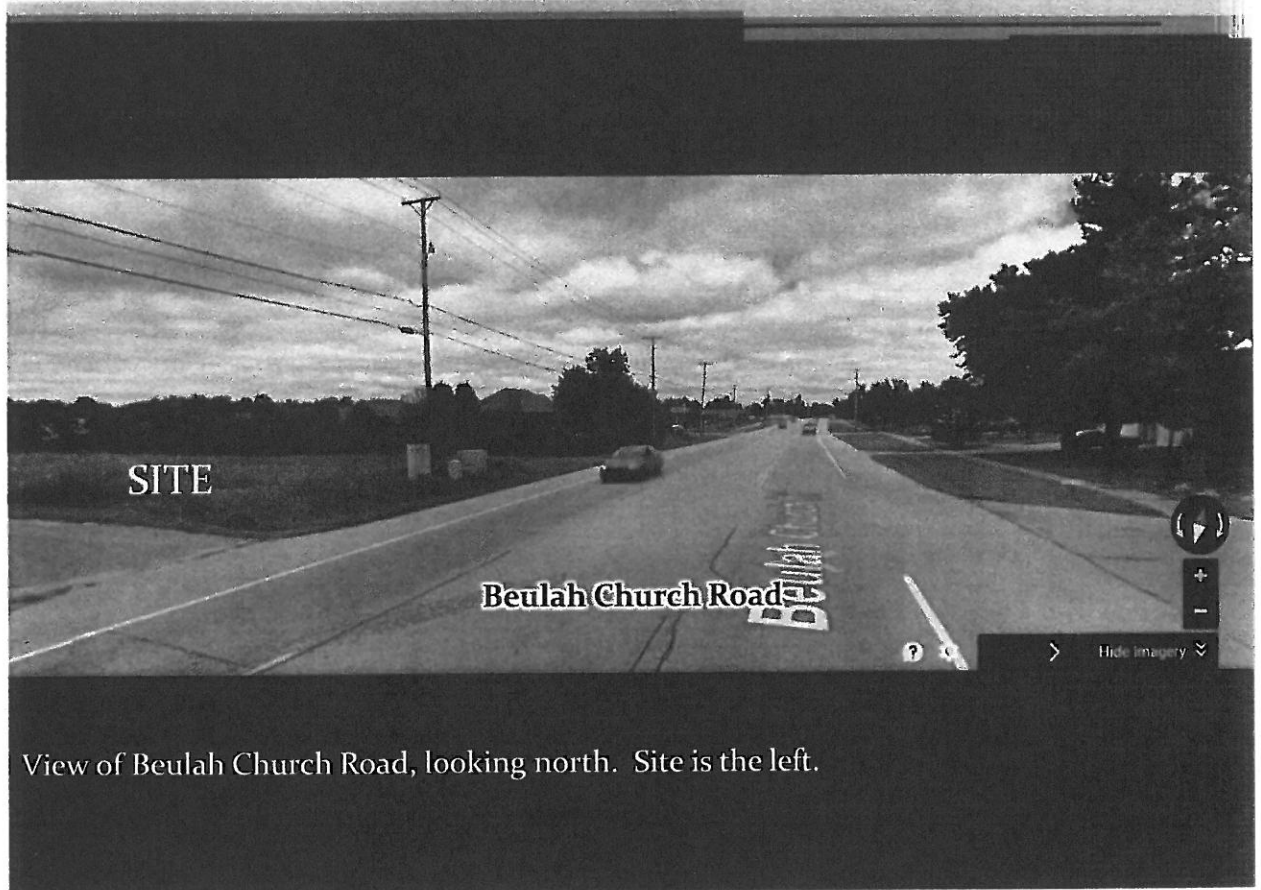




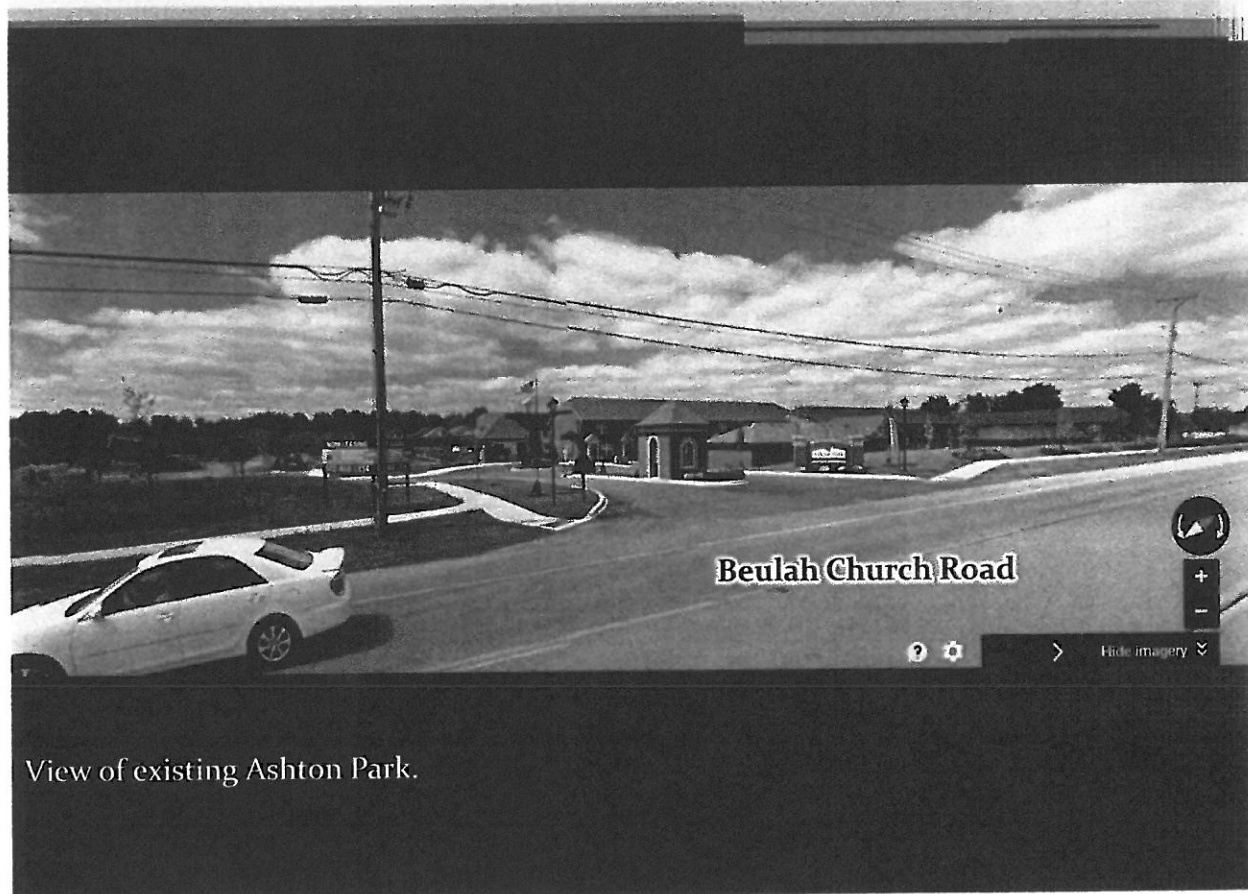


View of site from Zelma Fields Subdivision.

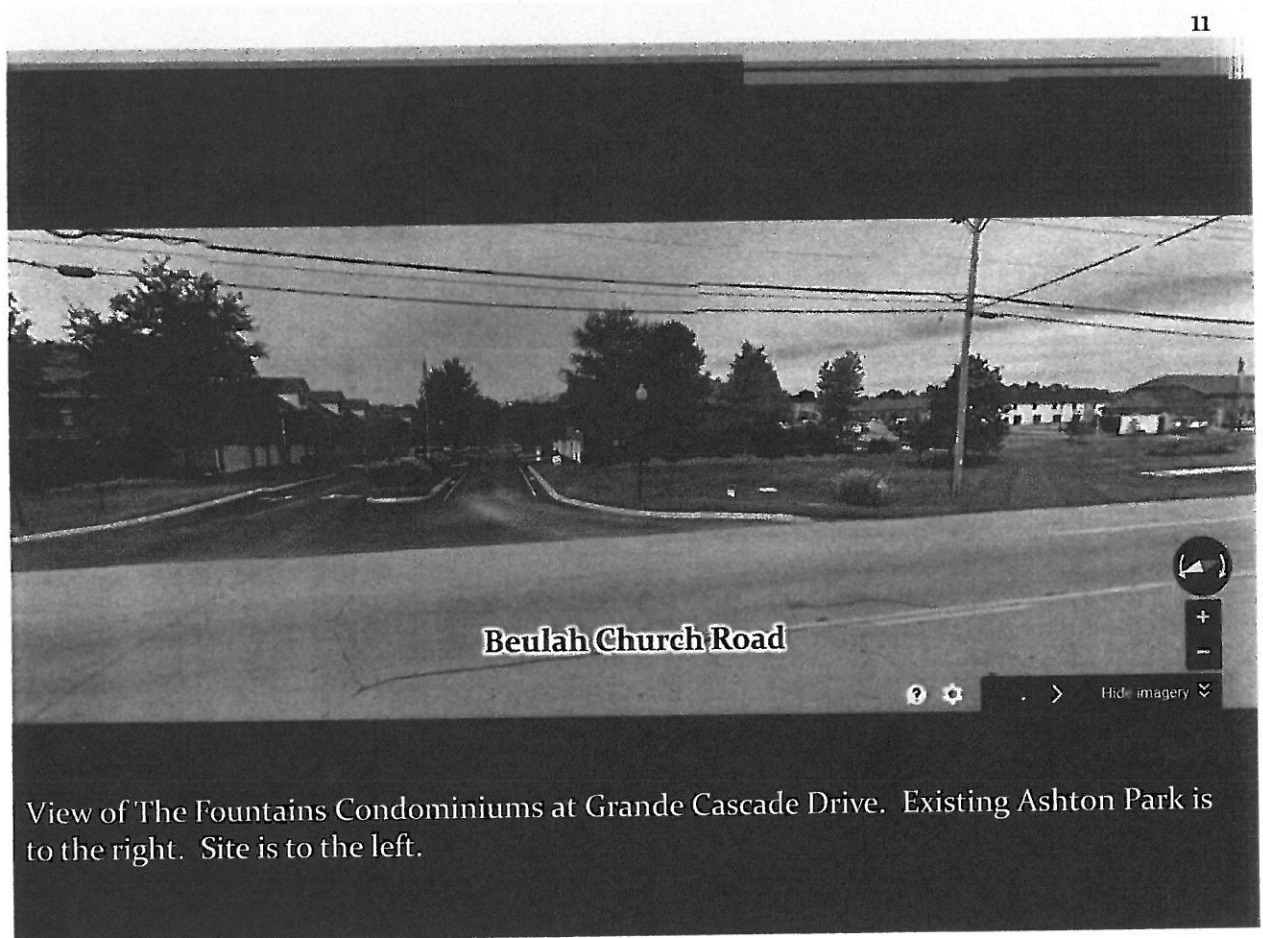




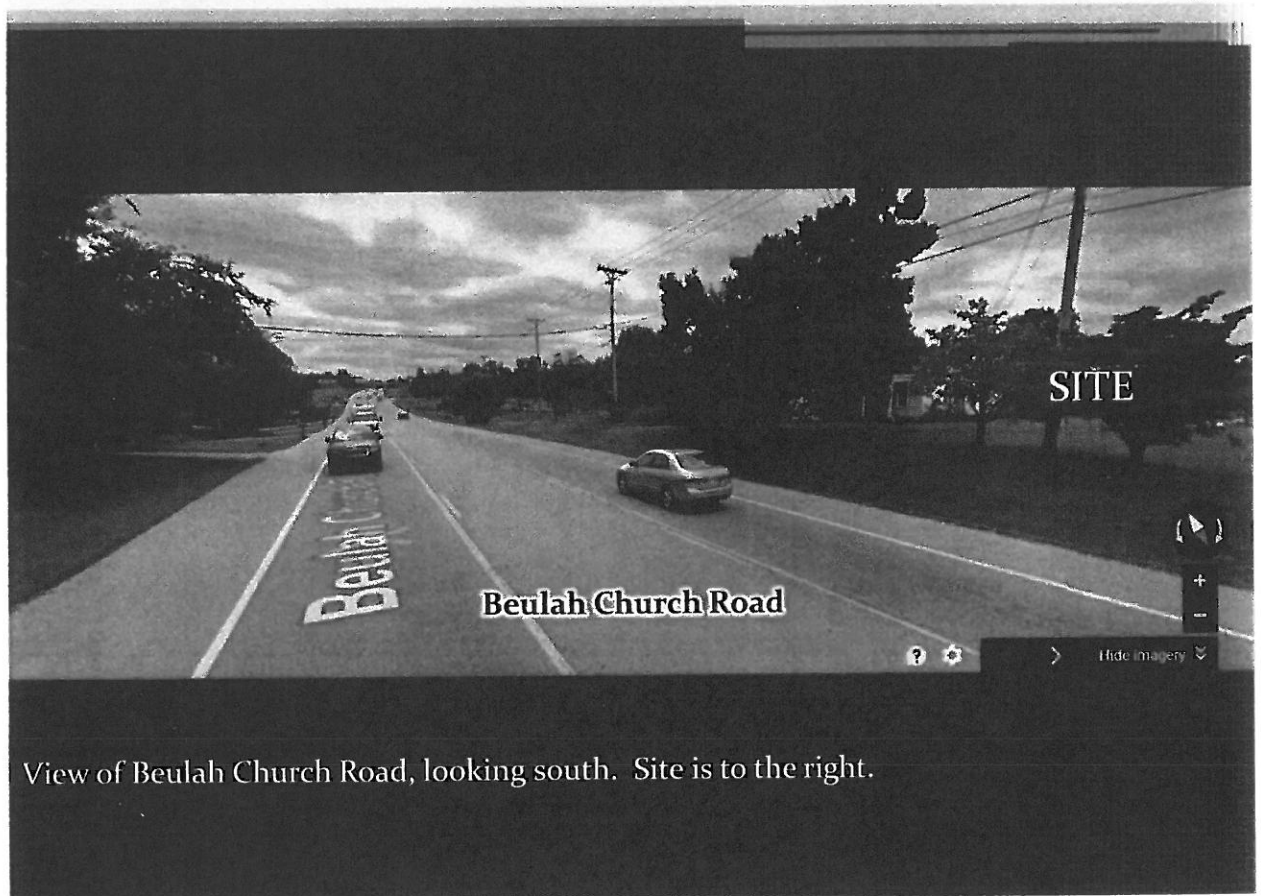
View of Beulah Church Road, looking north. Site is the left.



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 3<sup>rd</sup> 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  
Add'l Rev: 11/21/2014 4:10 PM



## Neighborhood Meeting Summary

## Summary of neighborhood meeting

The Neighborhood Meeting was held at the Central Government Center, Room A located at 7201 Outer Loop on Wednesday, December 3<sup>rd</sup>, 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.

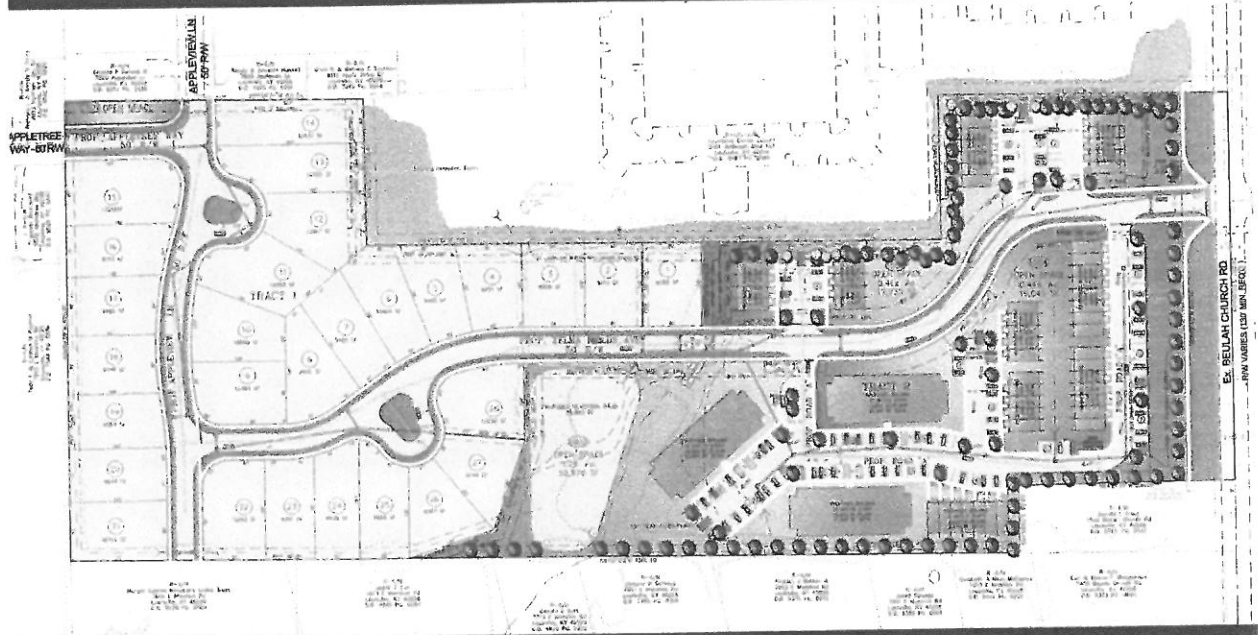
Other than that, Kevin Young explained access, drainage and screening and buffering along the shared property line with the neighboring subdivision. Ken Blacketer explained that the apartments would look very similar to the current apartment project on Beulah Church Road and pictures were shown. Mr. 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 receive 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.

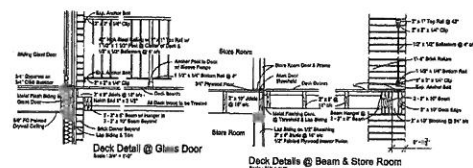
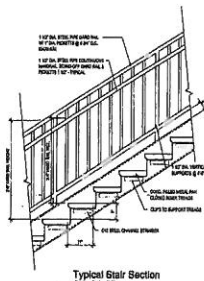
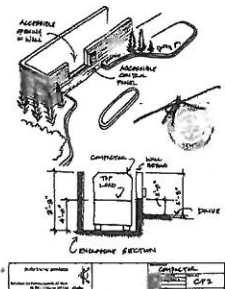
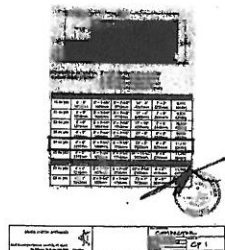
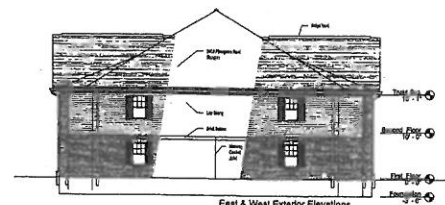
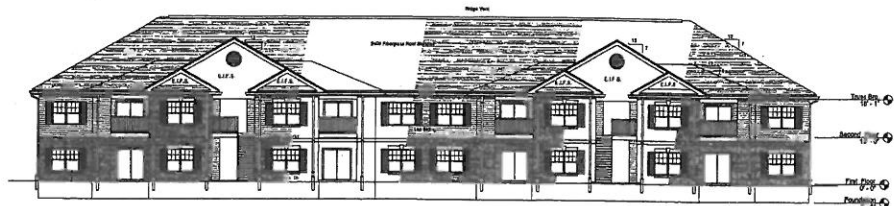
Respectfully submitted,

Nicholas Pregliasco





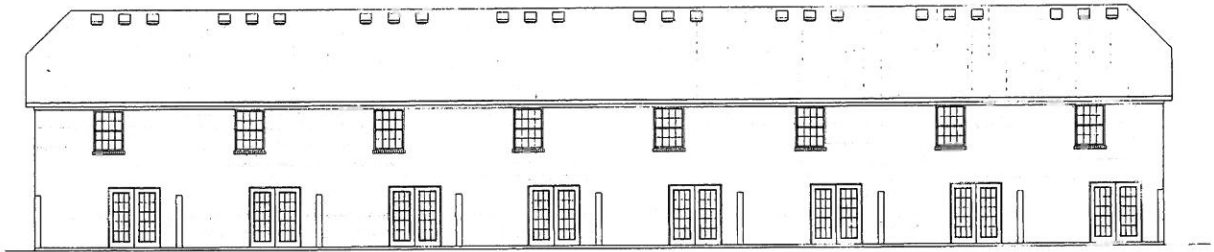




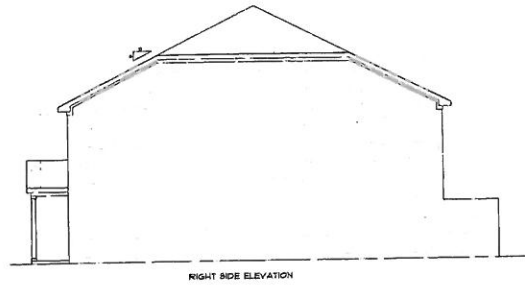
**Building #1**  
2-Story with 16  
Two-Bedroom Units



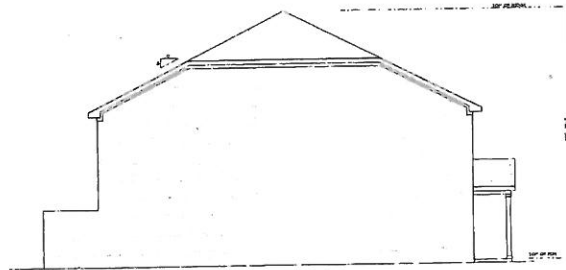
FRONT ELEVATION







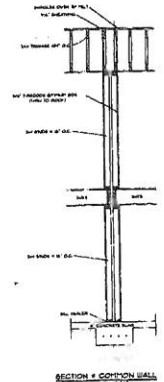
RIGHT SIDE ELEVATION



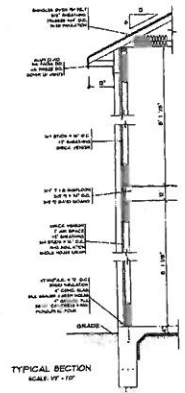
LEFT SIDE ELEVATION



STAIR DETAIL  
NO SCALE



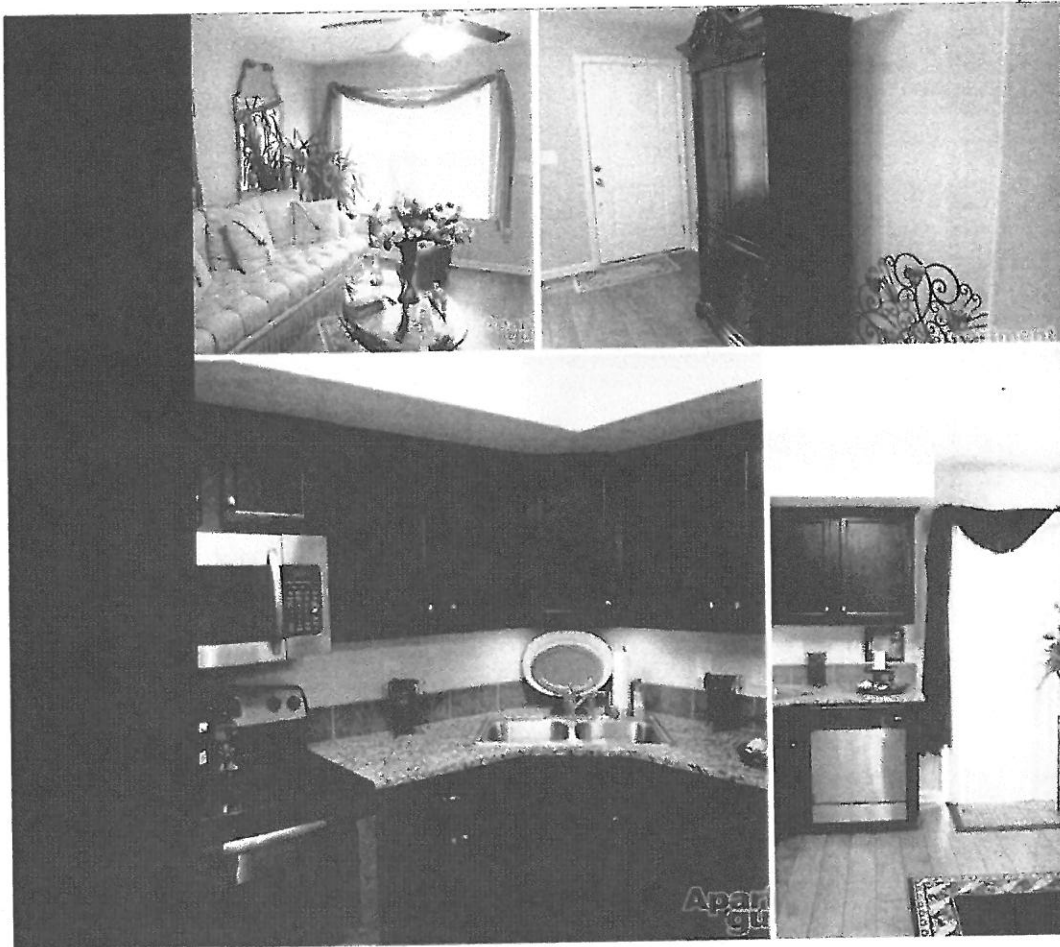
SECTION - PORCH WALL  
SCALE: 1/4" = 1'-0"

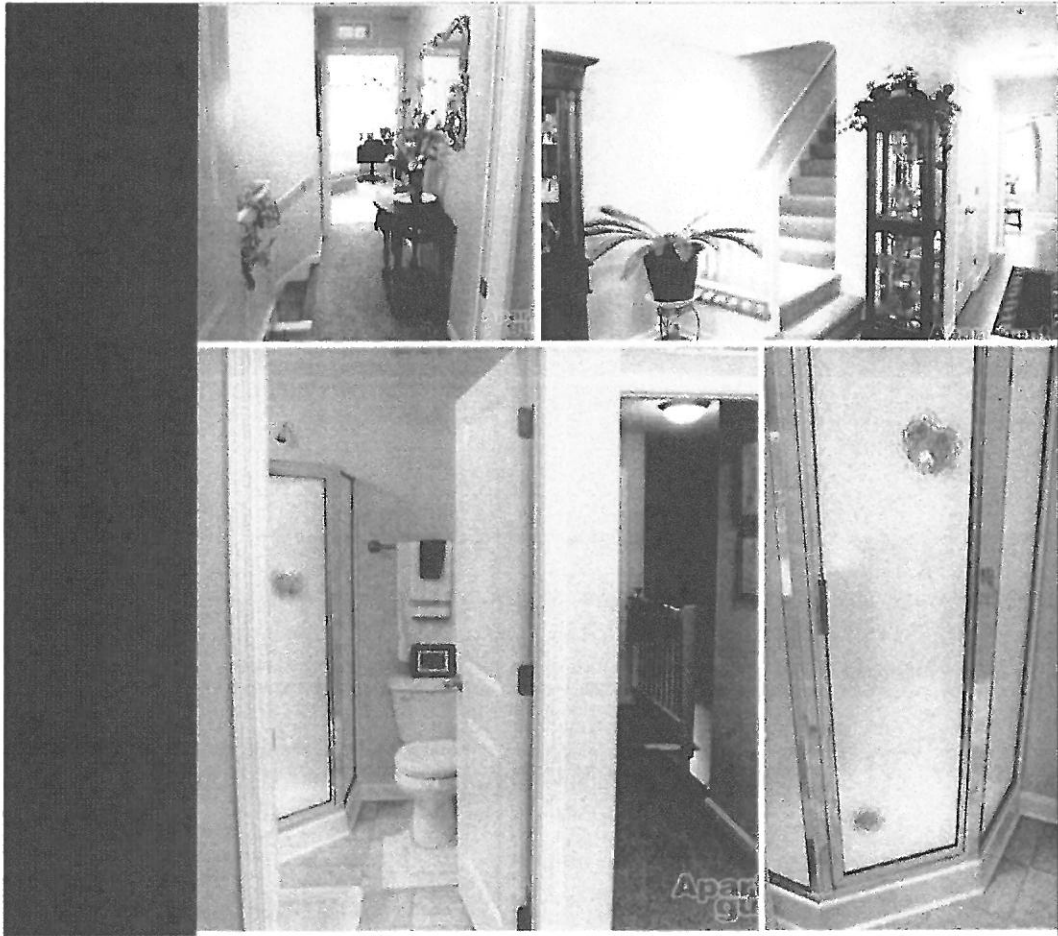


TYPICAL SECTION  
SCALE: 1/4" = 1'-0"















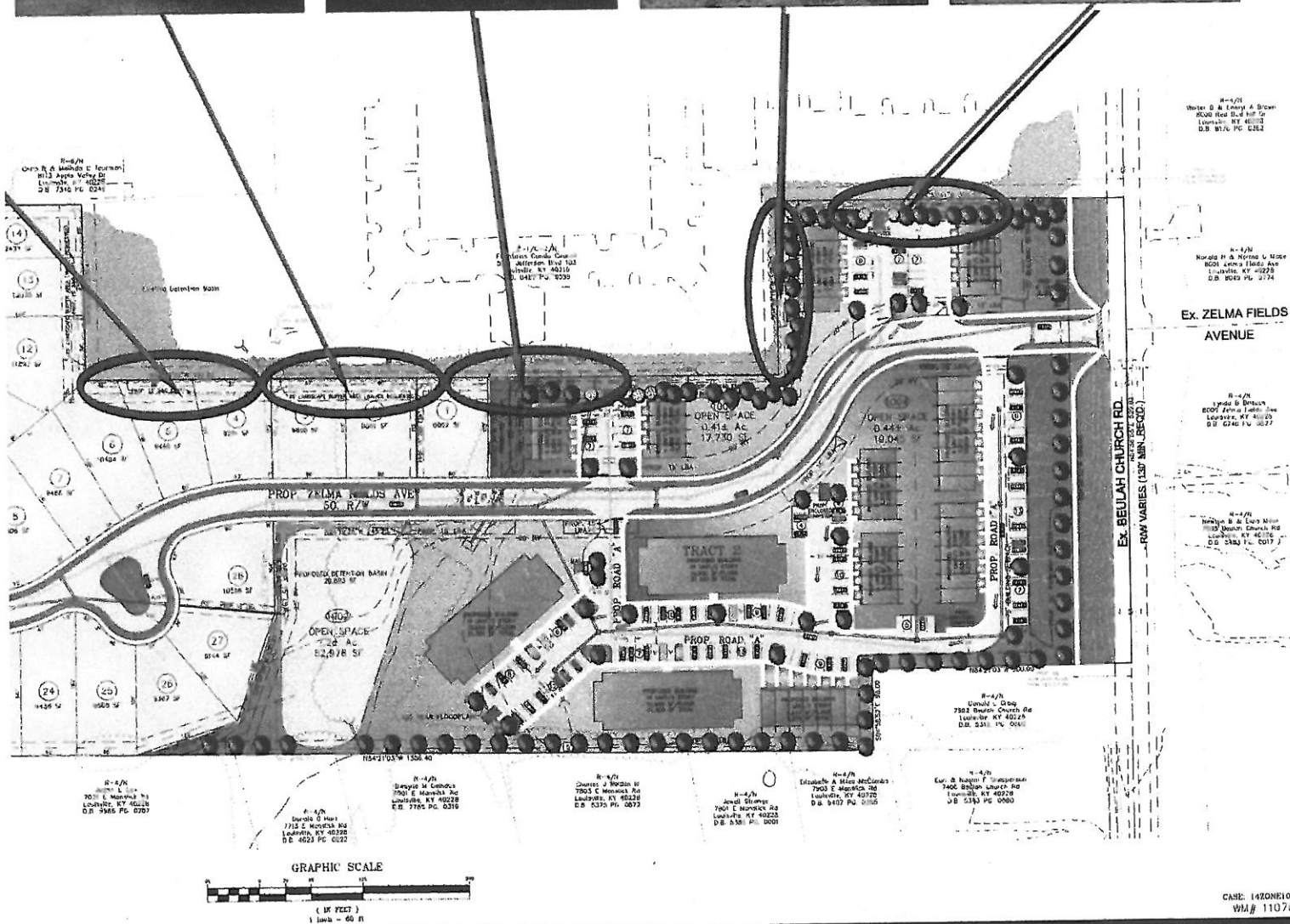
2

3

4

5

32





34

03/19/2015 22:36







36

03/19/2015 22:26





# 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

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## 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..

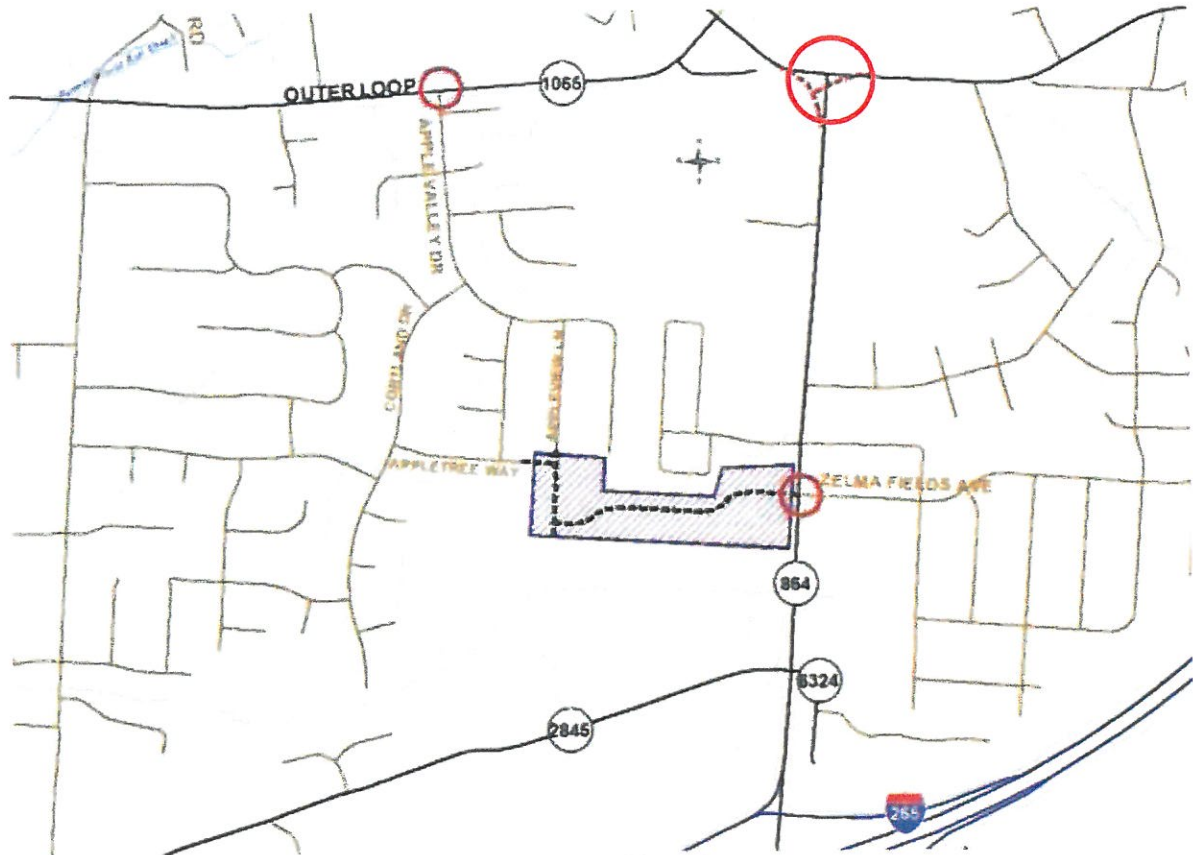


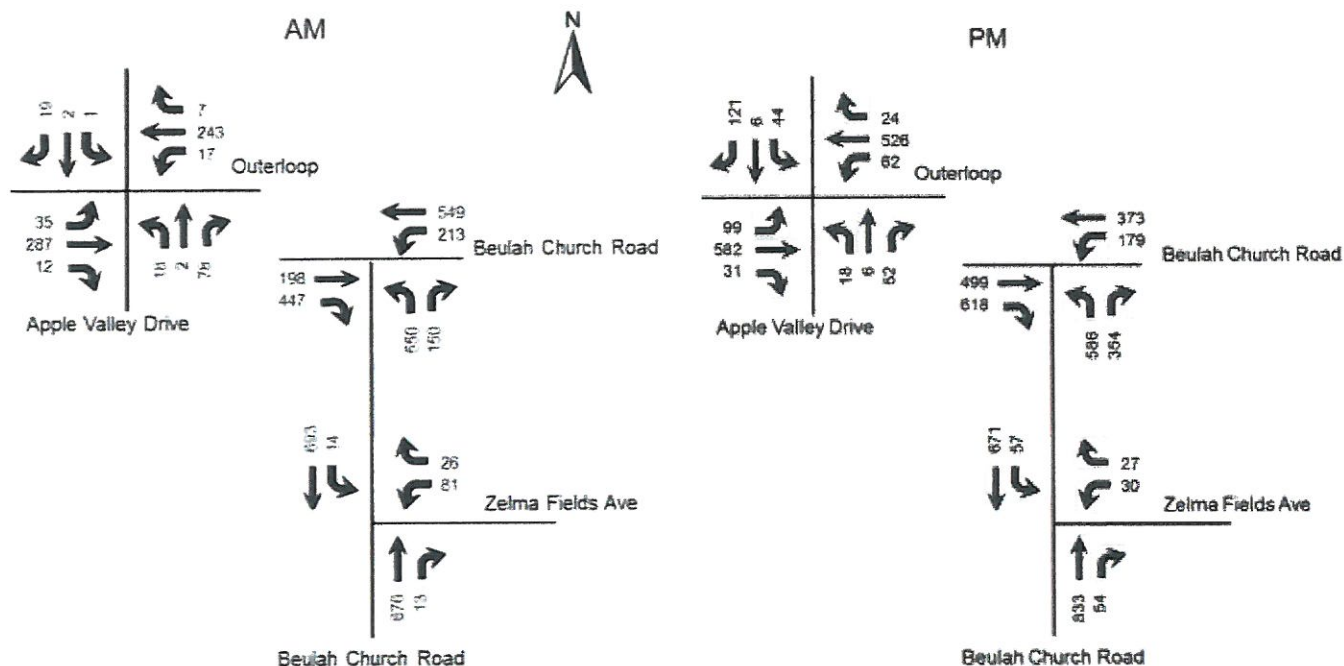
Figure 1. Site Map

## 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.

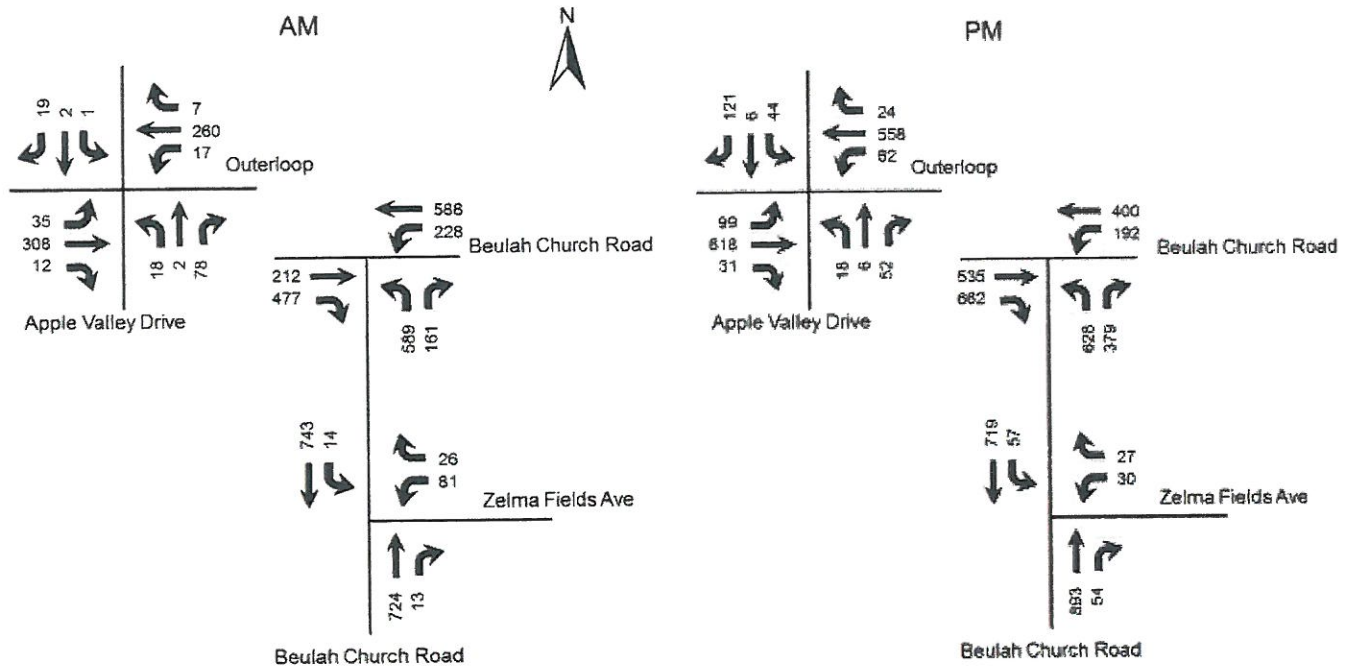


Figure 3. 2018 Peak Hour No Build

## TRIP GENERATION

The Institute of Transportation Engineers Trip Generation Manual, 9<sup>th</sup> 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

Land Use	A.M. Peak Hour					P.M. Peak Hour				
	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
<b>TOTAL</b>	<b>85</b>			<b>18</b>	<b>67</b>	<b>109</b>			<b>70</b>	<b>39</b>



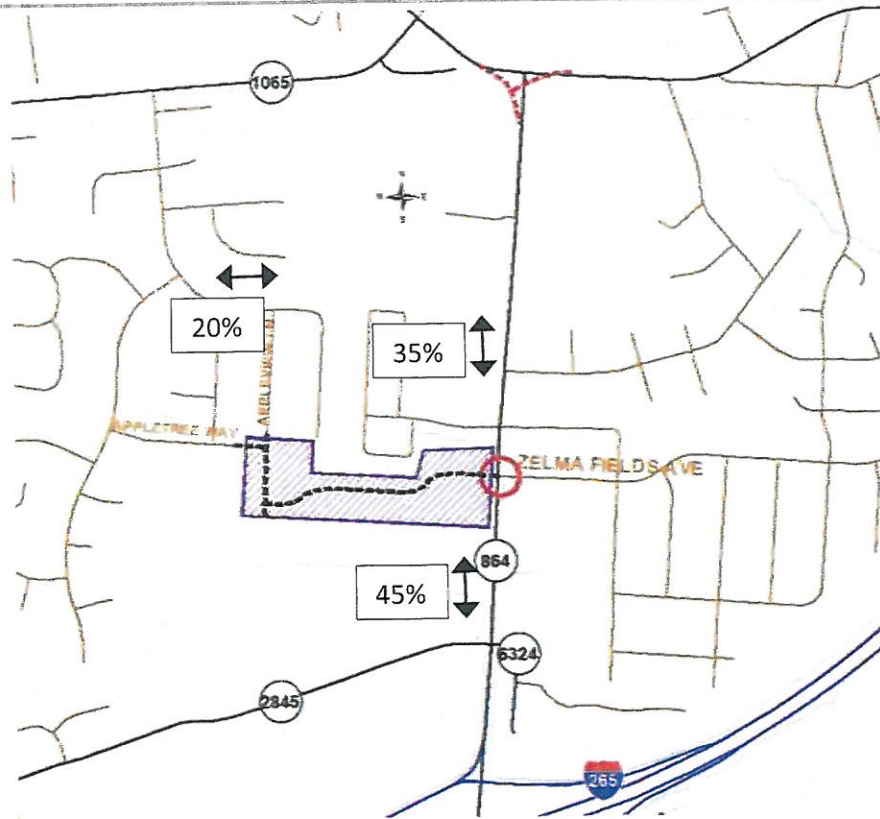


Figure 4. Trips Distribution Percentages

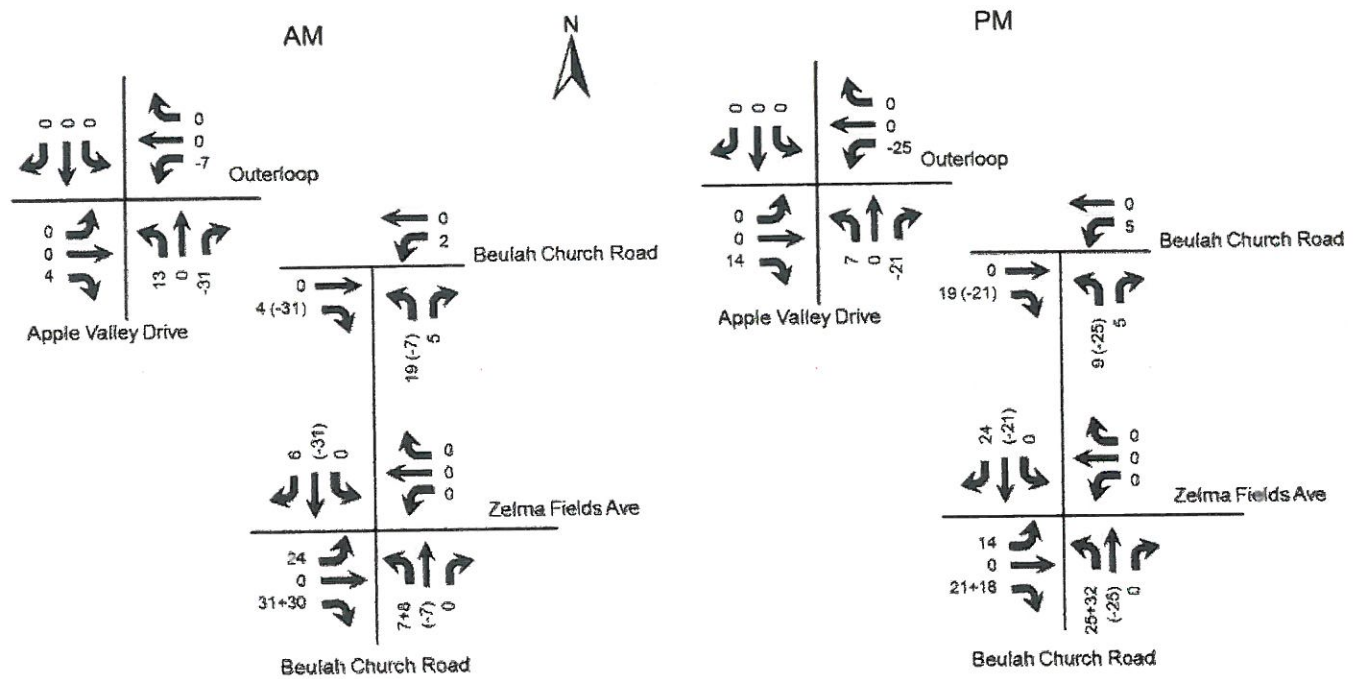


Figure 5. Peak Hour Trips Generated by Site



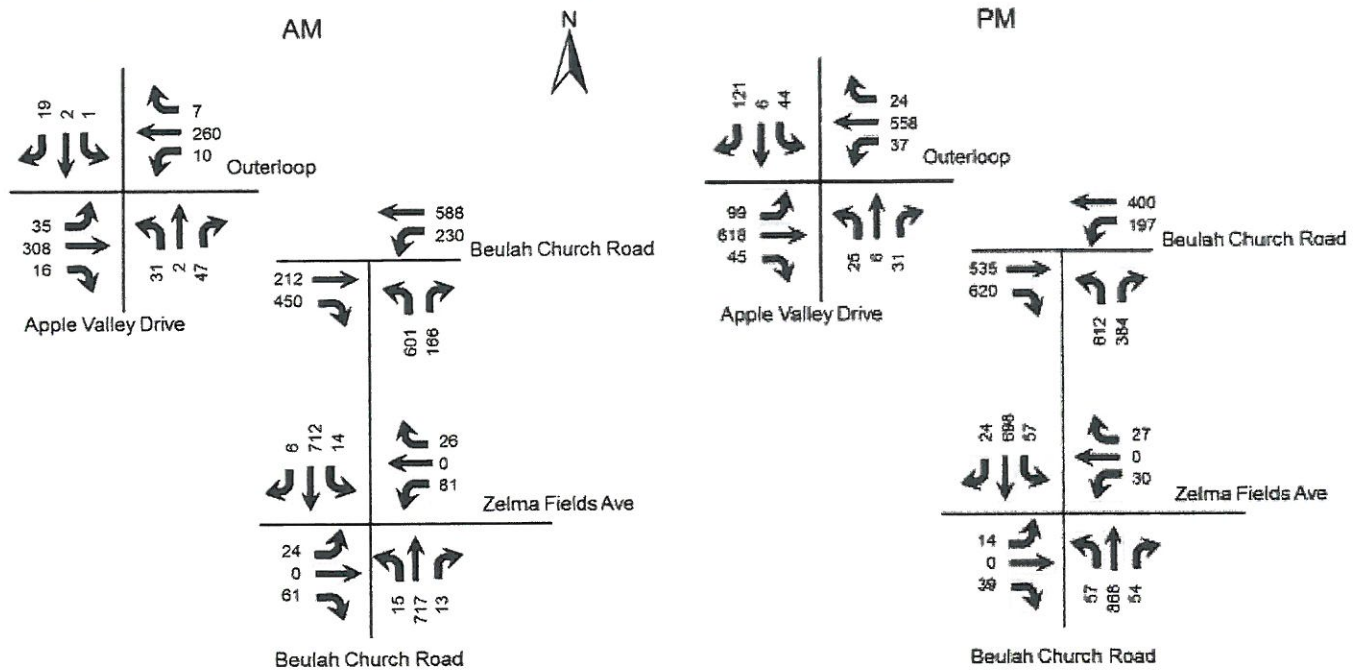


Figure 6. 2018 Peak Hour Build

## 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
<b>Beulah Church Road at Zelma Fields Ave</b>						
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
<b>Beulah Church Road at Fegenbush Lane</b>	<b>B 19.0</b>	<b>C 22.6</b>	<b>C 22.2</b>	<b>C 26.5</b>	<b>C 32.2</b>	<b>C 29.3</b>
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
<b>Outerloop at Apple Valley Drive</b>	<b>B 15.3</b>	<b>B 18.0</b>	<b>B 18.3</b>	<b>B 17.2</b>	<b>B 18.9</b>	<b>B 19.6</b>
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	175	5	181	0	0	0	0	380			
Total	14	693	0	707	81	0	26	107	0	676	13	689	0	0	0	0	1501			
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	257			
08:30 AM	3	120	0	123	17	0	11	28	0	95	3	98	0	0	0	0	252			
08:45 AM	2	103	0	105	2	0	4	13	0	114	2	116	0	0	0	0	236			
Total	7	483	0	490	51	0	32	83	0	455	12	467	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	96.3	0		70.6	0	29.4		0	97.8	2.2		0	0	0	0				
Total %	0.9	48.3	0	47.1	5.5	0	2.1	7.7	0	44.2	1	45.1	0	0	0	0				

Signalized Intersection				Signalized Intersection				Signalized Intersection				Signalized Intersection				
Approach		Left		Thru		Right		Approach		Left		Thru		Right		
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	341
07:15 AM	1	166	0	167	13	0	9	22	0	177	4	181	0	0	0	370
07:30 AM	4	183	0	187	23	0	2	25	0	196	4	200	0	0	0	412
07:45 AM	6	173	0	179	17	0	3	20	0	175	5	181	0	0	0	380
Total Volume	14	693	0	707	81	0	26	107	0	676	13	689	0	0	0	1501
% App. Total	2	98	0		75.7	0	24.3		0	96.1	1.9		0	0	0	
PHF	58.3	54.7	0.00	94.5	72.1	0.00	54.2	58.4	0.00	96.2	55.0	96.1	0.00	0.00	0.00	91.2



# **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

Start Time	Beulah Church Road From North				Zelma Fields Ave From East				Beulah Church Road From South				From West				Int.	Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
04:00 PM	7	146	0	153	7	0	10	17	0	173	15	186	0	0	0	0	0	356
04:15 PM	10	164	0	174	6	0	9	15	0	197	16	213	0	0	0	0	0	400
04:30 PM	10	155	0	165	9	0	11	20	0	201	19	220	0	0	0	0	0	419
04:45 PM	11	170	0	181	6	0	7	13	0	203	16	219	0	0	0	0	0	419
Total	38	545	0	583	28	0	37	65	0	772	66	840	0	0	0	0	0	1598
05:00 PM	18	160	0	178	3	0	2	5	0	215	8	223	0	0	0	0	0	406
05:15 PM	18	176	0	194	12	0	7	19	0	214	9	223	0	0	0	0	0	436
05:30 PM	4	185	0	189	10	0	5	15	0	186	14	202	0	0	0	0	0	406
05:45 PM	8	190	0	198	10	0	4	14	0	213	13	226	0	0	0	0	0	409
Total	48	691	0	739	35	0	18	62	0	830	44	874	0	0	0	0	0	1674
Grand Total	86	1336	0	1412	63	0	55	118	0	1604	110	1714	0	0	0	0	0	3244
Apprch %	6.1	23.9	0		53.4	0	46.6		0	23.6	6.4		0	0	0			
Total %	2.7	40.9	0	43.6	1.9	0	1.7	3.6	0	49.4	3.4	52.8	0	0	0			

BEULAH CHURCH ROAD From North				ZELMA FIELDS AVE From East				BEULAH CHURCH ROAD From South				From West				App. Total	
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	16	219	0	0	0	0	419
05:00 PM	18	160	0	178	3	0	2	5	0	215	8	223	0	0	0	0	406
05:15 PM	18	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	1672
% 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	954	000	000	000	000	959



Ashton Park Phase II  
Traffic Impact Study

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

Start Time	From North					Beulah Church Rd From East					Beulah Church Rd From South					Fegenbush Ln From West					Int. Total	
	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total		
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																						
Peak Hour for Future Intersection Begins at 07:15 AM																						
07:15 AM	0	0	0	0	0	0	0	121	69	0	190	15	0	173	0	196	74	46	1	0	121	477
07:30 AM	0	0	0	0	0	0	0	124	40	0	193	15	0	190	0	185	101	40	0	0	149	617
07:45 AM	0	0	0	0	0	0	0	190	41	0	300	39	0	94	0	192	129	45	0	0	172	804
08:00 AM	0	0	0	0	0	0	0	92	24	0	117	28	0	172	0	241	103	42	0	0	143	612
Total Volume	0	0	0	0	0	0	0	497	191	0	690	57	0	495	0	654	408	175	1	0	341	1960
% App. Total	0	0	0	0	0	0	0	22	26	0	21.3	0	0	24.8	0	25.4	29.3	31.8	0.2	0	16.9	
PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.84	0.00	0.72	0.00	0.80	0.00	0.87	0.85	0.92	0.50	0.00	0.00	0.80	0.82
Peak Hour Analysis From 10:00 AM to 04:45 PM - Peak 2 of 1																						
Peak Hour for Future Intersection Begins at 01:00 PM																						
01:00 PM	0	0	0	0	0	0	0	70	27	0	97	16	0	76	0	82	52	50	0	0	110	299
01:15 PM	0	0	0	0	0	0	0	58	15	0	73	12	0	82	0	114	94	29	0	0	173	369
01:30 PM	0	0	0	0	0	0	0	70	22	0	92	21	0	89	0	101	54	34	0	0	118	311
01:45 PM	0	0	0	0	0	0	0	70	28	0	98	22	0	84	0	99	24	26	0	0	130	219
Total Volume	0	0	0	0	0	0	0	268	92	0	360	71	0	291	0	386	280	140	0	0	331	1239
% App. Total	0	0	0	0	0	0	0	14.1	23.6	0	21.6	0	0	26.4	0	25.1	31.9	40.1	0	0	16.7	
PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.81	0.00	0.73	0.00	0.80	0.00	0.81	0.81	0.74	0.80	0.00	0.00	0.87	0.83

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

Start Time	From North					Beulah Church Rd From East					Beulah Church Rd From South					Fegenbush Ln From West					Int. Total
	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total	Right	Thru	Left	Peak	App. Total	
Peak Hour Analysis From 07:00 PM to 09:45 PM - Peak 1 of 1																					
Peak Hour for Future Intersection Begins at 08:30 PM																					
08:30 PM	0	0	0	0	0	0	75	44	0	119	97	0	121	0	218	146	122	0	0	185	619
08:45 PM	0	0	0	0	0	0	85	28	0	112	92	0	116	0	218	124	119	0	0	259	560
09:00 PM	0	0	0	0	0	0	94	53	0	147	64	0	143	0	207	117	24	0	0	237	586
09:15 PM	0	0	0	0	0	0	84	37	0	121	68	0	151	0	279	134	120	0	0	299	599
Total Volume	0	0	0	0	0	0	338	162	0	499	321	0	431	0	912	500	485	0	0	681	2064
% App. Total	0	0	0	0	0	0	17.0	22.4	0	27.7	0	0	32.5	0	27.5	35.3	34.7	0	0	24.2	
PHF	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.84	0.00	0.77	0.00	0.70	0.00	0.75	0.75	0.94	0.80	0.00	0.00	0.87	0.83

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					



TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	DBZ			Intersection				
Agency/Co.	Jacobs			Jurisdiction				
Date Performed	1/26/2015			Analysis Year				
Analysis Time Period	AM Peak			2018 No Build				
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					

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					



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

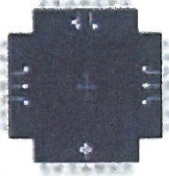
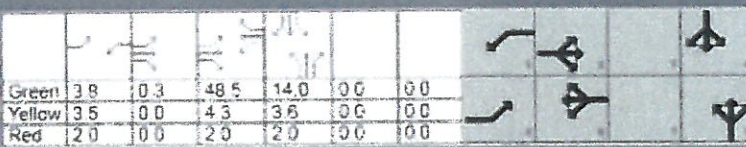


TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	DBZ			Intersection			
Agency/Co.	Jacobs			Jurisdiction			
Date Performed	1/26/2015			Analysis Year			
Analysis Time Period	PM Peak			2015			
Project Description Ashton Park							
East/West Street: Zelma Fields Ave				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
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				

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



### HCS 2010 Signalized Intersection Results Summary

General Information					Intersection Information											
Agency	Jacobs				Duration, h	0.25										
Analyst	DBZ				Analysis Date	Apr 7, 2015										
Jurisdiction					Time Period	PM Peak										
Intersection	Apple Valley Drive				Analysis Year	2019 No Build										
File Name	13 PM NB.xss				Analysis Period	1 > 7.00										
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	64.1	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	3.5	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), 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 <sub>q</sub> ), s					4.2	25.1	4.0	40.5		9.4		12.7				
Green Extension Time (g <sub>e</sub> ), 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	1810	1810	1863	1810		1400		1353	1622	
Queue Service Time (g <sub>q</sub> ), s					2.2	23.1	0.8	2.0	38.5	0.9		0.1		3.1	7.2	
Cycle Queue Clearance Time (g <sub>c</sub> ), 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 <sub>a</sub> ), veh/h					479	1331	1150	614	1331	1150		496		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 <sub>1</sub> ), s/veh					17.3	12.3	7.6	10.7	15.7	7.7		30.8		37.2	32.1	
Incremental Delay (d <sub>2</sub> ), s/veh					1.5	1.1	0.0	0.2	4.4	0.0		0.9		1.1	2.5	
Initial Queue Delay (d <sub>3</sub> ), 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	18.6		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



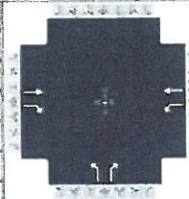
### HCS 2010 Signalized Intersection Results Summary

#### General Information

Agency	Jacobs
Analyst	DBZ
Jurisdiction	
Intersection	Beulah Church Road
File Name	18 PM B.xus
Project Description	Ashton Park II

#### Intersection Information

Duration, h	0.25
Area Type	Other
PHF	0.92
Analysis Period	1 > 7:00



#### 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
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	Off

#### 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+R <sub>c</sub> ), 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 <sub>e</sub> ), s		25.7	8.9	16.3		36.2		
Green Extension Time (g <sub>e</sub> ), 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

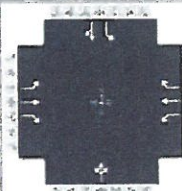







	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		2	12	1	6		3		18			
Adjusted Flow Rate (v), veh/h		379	439	214	435		665		417			
Adjusted Saturation Flow Rate (s), veh/h/ln		1900	1610	1810	1900		1810		1610			
Queue Service Time (g <sub>s</sub> ), s		15.7	23.7	6.9	14.3		34.2		17.3			
Cycle Queue Clearance Time (g <sub>c</sub> ), 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		736			
Volume-to-Capacity Ratio (X)		0.578	0.790	0.487	0.457		0.945		0.531			
Available Capacity (c <sub>a</sub> ), 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 <sub>1</sub> ), s/veh		25.8	28.4	17.7	15.6		28.5		17.1			
Incremental Delay (d <sub>2</sub> ), s/veh		1.3	4.3	1.0	0.7		19.5		0.2			
Initial Queue Delay (d <sub>3</sub> ), 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				

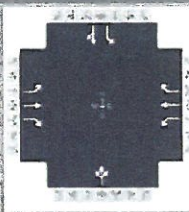


### HCS 2010 Signalized Intersection Results Summary

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	Green	2.3	0.9	46.3	7.5	0.0	0.0					
Offset, s	0	Reference Point	End	Yellow	3.5	0.0	4.3	3.6	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Red	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				7.8	52.6	8.7	53.5		13.1		13.1				
Change Period, (Y+R <sub>c</sub> ), 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 <sub>s</sub> ), s				2.6	8.3	3.1	40.1		7.2		7.3				
Green Extension Time (g <sub>e</sub> ), 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/s				1810	1863	1610	1810	1863	1610		1603		1321	1634	
Queue Service Time (g <sub>s</sub> ), s				0.6	6.3	0.3	1.1	38.1	0.5		2.7		0.1	1.0	
Cycle Queue Clearance Time (g <sub>c</sub> ), s				0.6	6.3	0.3	1.1	38.1	0.5		5.2		5.3	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 <sub>a</sub> ), veh/h				512	1501	1297	1032	1501	1297		588		448	549	
Back of Queue (Q), veh/in (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 <sub>1</sub> ), s/veh				15.8	6.5	5.3	4.6	11.9	5.1		32.4		35.0	30.6	
Incremental Delay (d <sub>2</sub> ), s/veh				0.5	0.1	0.0	0.0	4.7	0.0		2.9		0.0	0.6	
Initial Queue Delay (d <sub>3</sub> ), 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		
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		
Bicycle LOS Score / LOS				1.1	A			1.0	A			0.7	A		

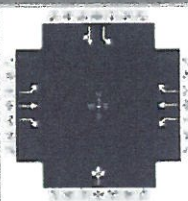
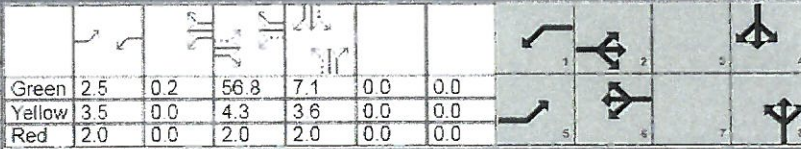


### HCS 2010 Signalized Intersection Results Summary

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	Green	2.5	0.8	54.3	8.2	0.0	0.0										
Force Mode	Fixed	Simult. Gap N/S	On	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 <sub>0</sub> ), 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 <sub>s</sub> ), s					2.6		9.1		3.1		49.6				7.8				7.9	
Green Extension Time (g <sub>e</sub> ), s					0.1		10.0		0.1		5.8				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 <sub>s</sub> ), s					0.6	7.1	0.3	1.1	47.6	0.6		3.1		0.1	1.2					
Cycle Queue Clearance Time (g <sub>c</sub> ), 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 <sub>a</sub> ), 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 <sub>1</sub> ), s/veh					19.9	6.3	5.1	4.4	12.8	4.8		36.4		39.4	34.4					
Incremental Delay (d <sub>2</sub> ), s/veh					0.7	0.1	0.0	0.0	7.7	0.0		3.3		0.0	0.6					
Initial Queue Delay (d <sub>3</sub> ), 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					

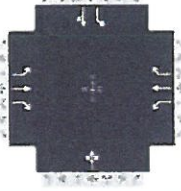
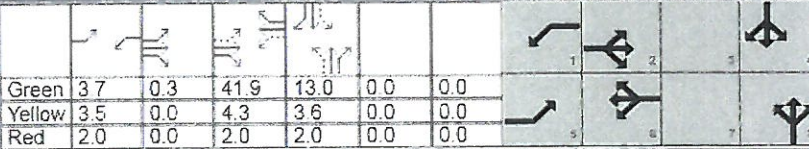


### HCS 2010 Signalized Intersection Results Summary

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 <sub>0</sub> ), 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 <sub>s</sub> ), s				2.6	8.6	2.6	52.3		6.9		7.0				
Green Extension Time (g <sub>e</sub> ), 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 <sub>s</sub> ), s				0.6	6.6	0.3	0.6	50.3	0.6		3.7		0.1	1.2	
Cycle Queue Clearance Time (g <sub>c</sub> ), 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 <sub>a</sub> ), 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 <sub>1</sub> ), s/veh				21.5	5.5	4.4	3.9	12.4	4.4		37.4		39.9	35.8	
Incremental Delay (d <sub>2</sub> ), s/veh				0.8	0.1	0.0	0.0	8.8	0.0		2.9		0.0	0.9	
Initial Queue Delay (d <sub>3</sub> ), 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

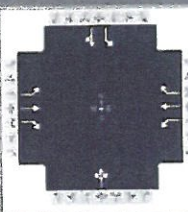
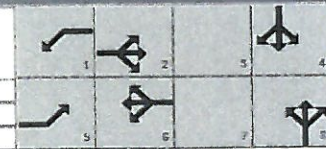


### HCS 2010 Signalized Intersection Results Summary

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	End															
Offset, s	0	Reference Point	End																
Uncoordinated	Yes	Simult. Gap E/W	On																
Force Mode	Fixed	Simult. Gap N/S	On																
						Green	3.7	0.3	41.9	13.0	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						9.5	48.5	9.2	48.2		18.6		18.6						
Change Period, (Y+R <sub>0</sub> ), 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 <sub>a</sub> ), s						4.1	22.2	3.9	33.9		8.6		11.6						
Green Extension Time (g <sub>e</sub> ), 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 <sub>s</sub> ), s						2.1	20.2	0.8	1.9	31.9	0.9	0.1		2.8	6.5				
Cycle Queue Clearance Time (g <sub>c</sub> ), 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 <sub>a</sub> ), 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 <sub>1</sub> ), s/veh						14.7	12.1	7.8	10.3	15.0	8.0	27.7		33.4	28.9				
Incremental Delay (d <sub>2</sub> ), s/veh						1.1	0.9	0.0	0.2	2.8	0.0	0.7		0.9	2.4				
Initial Queue Delay (d <sub>3</sub> ), 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		

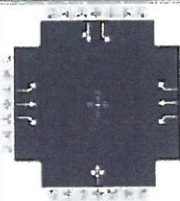
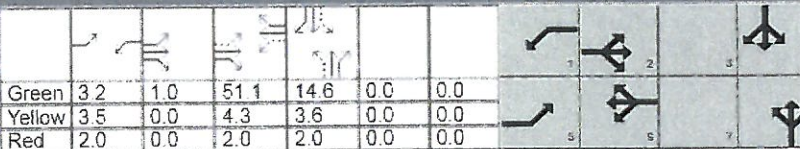


### HCS 2010 Signalized Intersection Results Summary

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		Green													3.8	0.3	48.5	14.0	0.0	0.0					
Offset, s	0	Reference Point	End		Yellow													3.5	0.0	4.3	3.6	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On		Red													2.0	0.0	2.0	2.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On																									
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 (qc), s						4.2	25.1	4.0	40.5		9.4		12.7															
Green Extension Time (ge), 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	3	13	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 (gs), s						2.2	23.1	0.8	2.0	38.5	0.9		0.1		3.1	7.2												
Cycle Queue Clearance Time (gc), 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 (ca), 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											



### 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			Green	3.2	1.0	51.1	14.6	0.0	0.0					
Offset, s	0	Reference Point	End			Yellow	3.5	0.0	4.3	3.6	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On			Red	2.0	0.0	2.0	2.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On														
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 <sub>c</sub> ), 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 <sub>s</sub> ), s						4.2	25.1	3.2	43.4		10.1		13.5				
Green Extension Time (g <sub>e</sub> ), 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	13	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 <sub>s</sub> ), s						2.2	23.1	1.2	1.2	41.4	1.0	0.6		3.2	7.5		
Cycle Queue Clearance Time (g <sub>c</sub> ), 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 <sub>a</sub> ), 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 <sub>t</sub> ), s/veh						18.6	11.8	7.4	10.2	16.2	7.8	32.0		38.9	33.3		
Incremental Delay (d <sub>i</sub> ), s/veh						1.7	1.1	0.0	0.1	5.6	0.0	1.0		1.2	2.5		
Initial Queue Delay (d <sub>s</sub> ), 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	



# 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**

<u>Applicant:</u>	Blacketer Company
<u>Owner:</u>	Donald L. Craig The Revocable Trust Agreement with Margaret D. Greenwell
<u>Location:</u>	7508, 7506, 7504 and 7504 Beulah Church Rd
<u>Proposed Rezoning/Use:</u>	Rezoning from R-4 to R-5A
<u>Engineers, Land Planners and Landscape Architects:</u>	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 COMPLIANCE WITH ALL APPLICABLE GUIDELINES AND POLICIES OF THE CORNERSTONE 2020 COMPREHENSIVE PLAN

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