



## **St. Joseph Orphanage Site**

Ball Homes

### **Traffic Impact Study**

August 5, 2015

Prepared for: Metro Transportation Planning



## St. Joseph Orphanage Site

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**Contents**

1. Introduction ..... 1  
2. Existing Conditions ..... 2  
3. Future Conditions ..... 5  
4. Trip Generation and Distribution ..... 7  
5. Analysis ..... 12  
6. Conclusion ..... 14

Figure 1 : Location Map ..... 1  
Figure 2 : A.M. Peak Hour Counts ..... 3  
Figure 3 : P.M. Peak Hour Counts ..... 4  
Figure 4 : No Build A.M. Peak Hour Volumes ..... 5  
Figure 5 : No Build P.M. Peak Hour Volumes ..... 6  
Figure 6 : Site Trip Distribution Percentages ..... 7  
Figure 7 : Site Trip Distribution A.M. Peak Hour Volumes ..... 8  
Figure 8 : Site Trip Distribution P.M. Peak Hour Volumes ..... 9  
Figure 9 : Build A.M. Peak Hour Volumes ..... 10  
Figure 10 : Build P.M. Peak Hour Volumes ..... 11  
Figure 11 : Build Peak Hour Volumes at the Entrances ..... 11

Table 1. Trip Generation Results ..... 7  
Table 2 : Level of Service Summary ..... 12

**Appendix A. Traffic Counts**

**Appendix B. Highway Capacity Software Printouts**

# 1. Introduction

The subdivision plan for the St. Joseph Orphanage site shows 325 detached lots and 80 attached lots. The site is located on the north side of Factory Lane in Louisville, KY. Access to the subdivision will be through two entrances on Factory Lane. The sole purpose of this study is to examine the traffic operation impacts of the proposed subdivision on the highway network. For this study, the impact area was defined to be the proposed intersections with Factory Lane, and six additional intersections: Factory Lane at La Grange Road (KY 146), Factory Lane at Colonial Springs Drive, Factory Lane at Terrace Springs Drive, Factory Lane at Old Henry Road, Old Henry Road at Arnold Palmer Boulevard, and Old Henry Road at Bush Farm Road. A map of the site is shown in **Figure 1**.



Figure 1 : Location Map

## 2. Existing Conditions

Factory Lane is a Metro maintained road with an estimated 2015 Average Annual Daily Traffic (AADT) of 6,600 vehicles per day at the proposed entrance, as estimated from the turning movement count. The road is a two-lane highway with ten-foot lanes with a one foot shoulder along the property frontage. The speed limit is 35 mph. There are sidewalks on both sides of Factory Lane from La Grange Road to Terrace Hill Drive.

The intersection of Factory Lane with La Grange Road (KY 146) is controlled with a traffic signal. The Factory Lane approach has a dedicated left turn lane, a shared thru and left lane and a dedicated right turn lane. The signal operates as split phase for Factory Lane and Chamberlain Lane. The signal also has train preemption.

The intersections of Factory Lane with Colonial Springs Road and Terrace Spring Drive are controlled with two-way stop signs. Factory Lane is the primary route. There are dedicated left turn lanes on Factory Lane to Colonial Springs Road and to Terrace Spring Drive. There are no dedicated turn lanes on either Colonial Springs Road or Terrace Spring Drive.

The intersection with Old Henry Road is currently an all-way stop without dedicated turn lanes. Old Henry Road is scheduled for reconstruction beginning in the summer of 2016. The project will add a two-way left turn lane from the Bush Farm Road intersection to Ash Avenue (KY 362) in Oldham County. Old Henry Road will become the primary route (will not stop) and Factory Lane will be controlled with a stop sign. The eastbound Factory Lane approach will have a dedicated left turn lane. The design speed of Old Henry Road is 45 mph. There will be a sidewalk on the southeast side of the road and a multi-use path on the northwest side of the road.

The intersection of Arnold Palmer Boulevard/Hamilton Springs Drive is controlled with a two-way stop sign for the minor streets. The existing eastbound right turn lane on Old Henry Road will be removed. Neither Arnold Palmer Boulevard nor Hamilton Springs Drive have dedicated turn lanes.

The intersection of Old Henry Road with Bush Farm Road is controlled with a traffic signal. Eastbound Old Henry Road has a dedicated left turn lane and a dedicated right turn lane. Westbound Old Henry Road will have a dedicated left turn lane, a thru lane and a shared thru and right turn lane. Bush Farm Road will have dedicated left turn lane and a shared thru and right turn lane in both directions.

Jacobs Engineering Group Inc. obtained a.m. and p.m. peak hour traffic counts at the intersections. The full count data for each intersection are included in Appendix A. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes for these intersections.

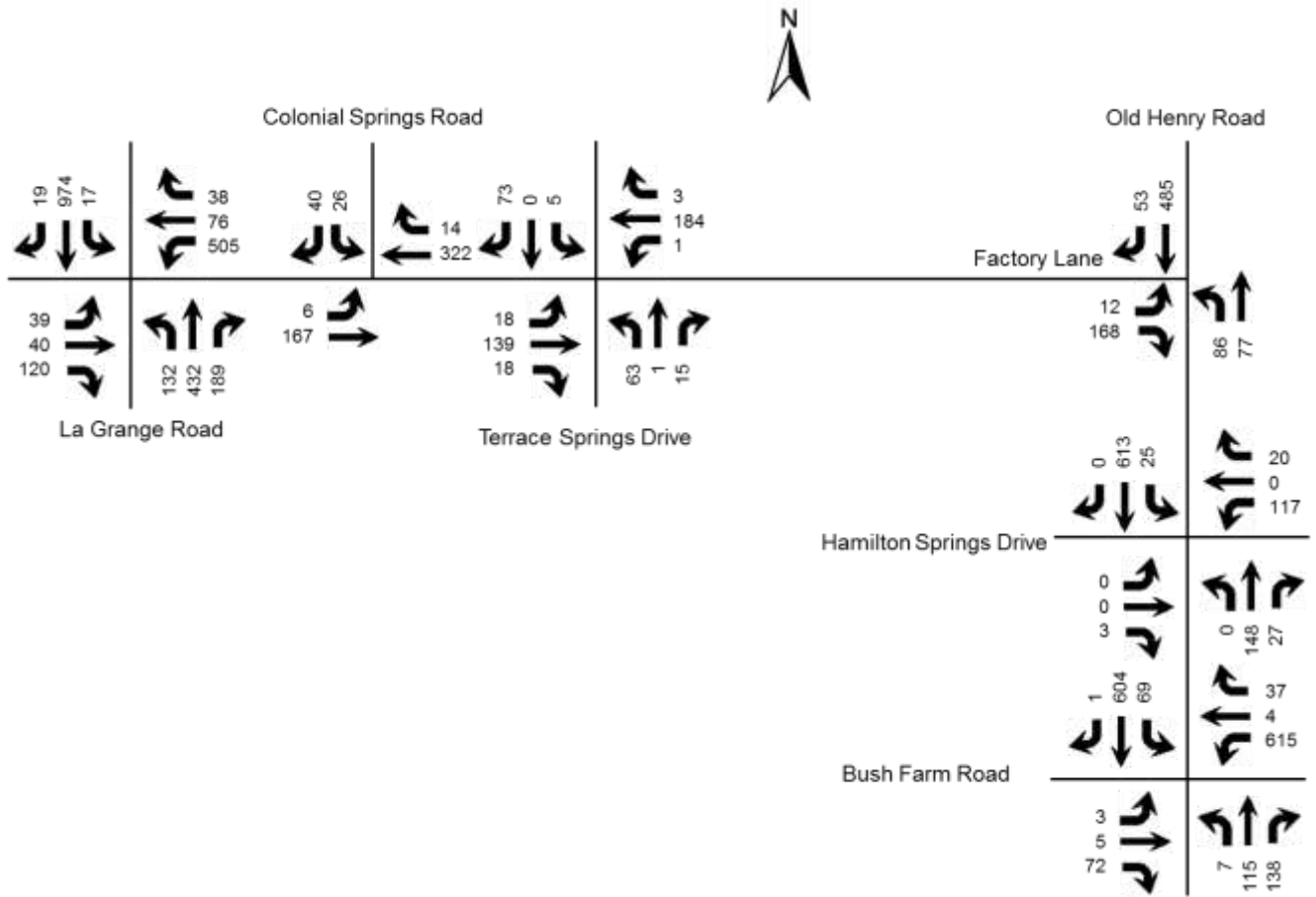


Figure 2 : A.M. Peak Hour Counts

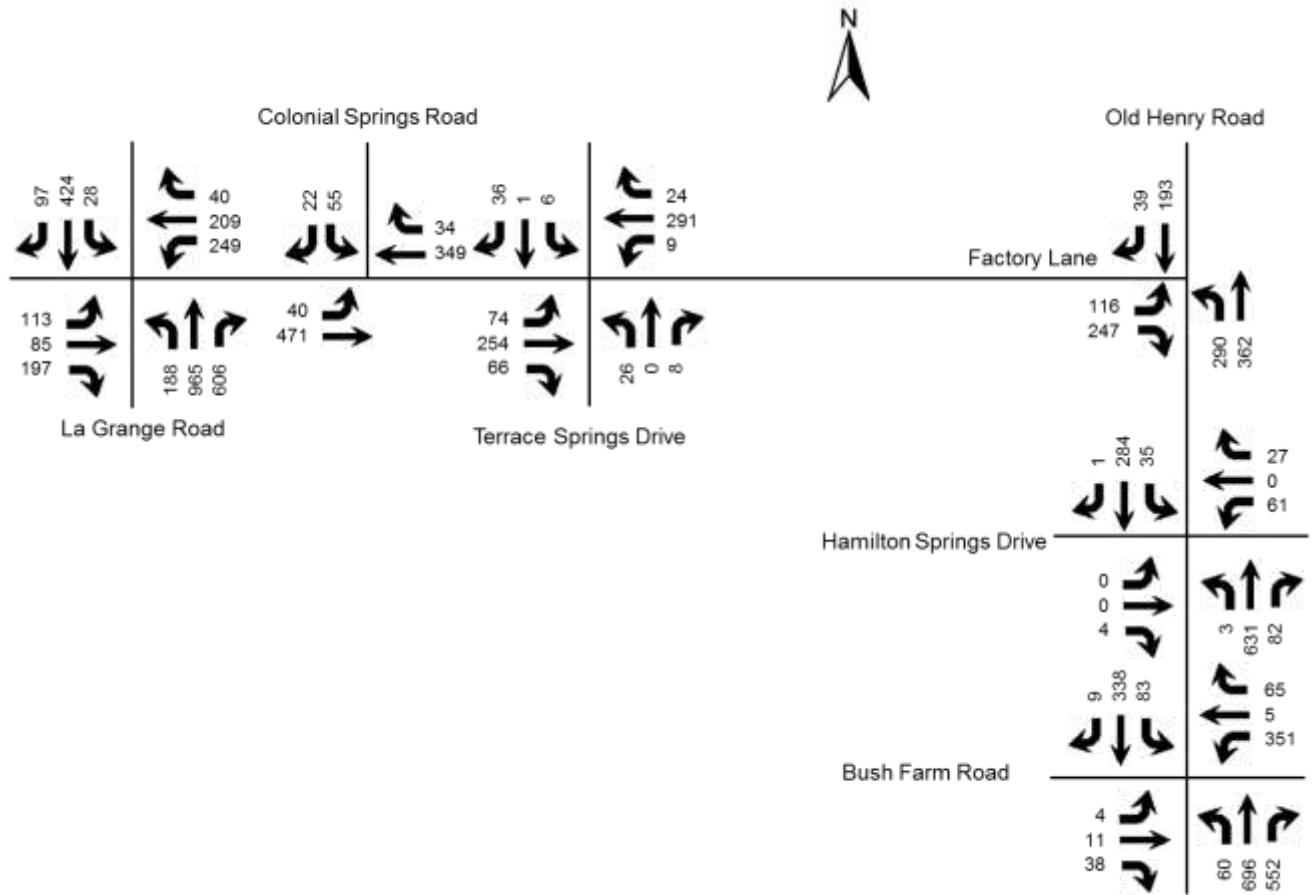


Figure 3 : P.M. Peak Hour Counts

### 3. Future Conditions

The projected completion year for this development is 2022, so the analysis year for this study is 2022. To predict traffic conditions in 2022, two and one third percent (2.33%) annual growth in traffic was added to Factory Lane and La Grange Road (KY 146). This growth is based upon a review of the traffic forecast for the Old Henry Road Extension dated June 16, 2011. Old Henry Road growth is taken from the forecast. Growth on Hamilton Springs Drive and Bush Farm Road is from the Old Henry Road Traffic Impact Study dated November 2014. **Figures 4 and 5** display the 2022 No Build peak hour volumes.

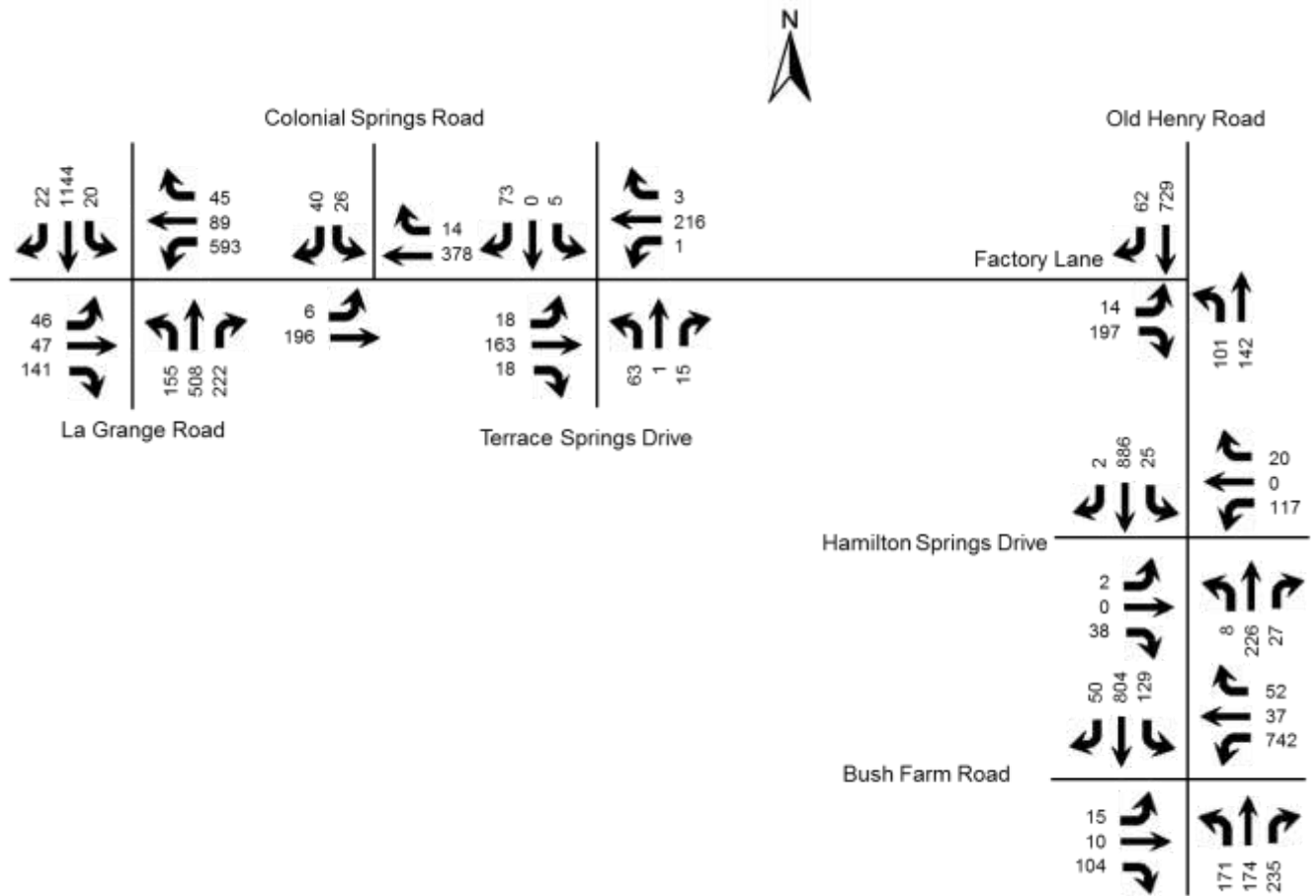


Figure 4 : No Build A.M. Peak Hour Volumes



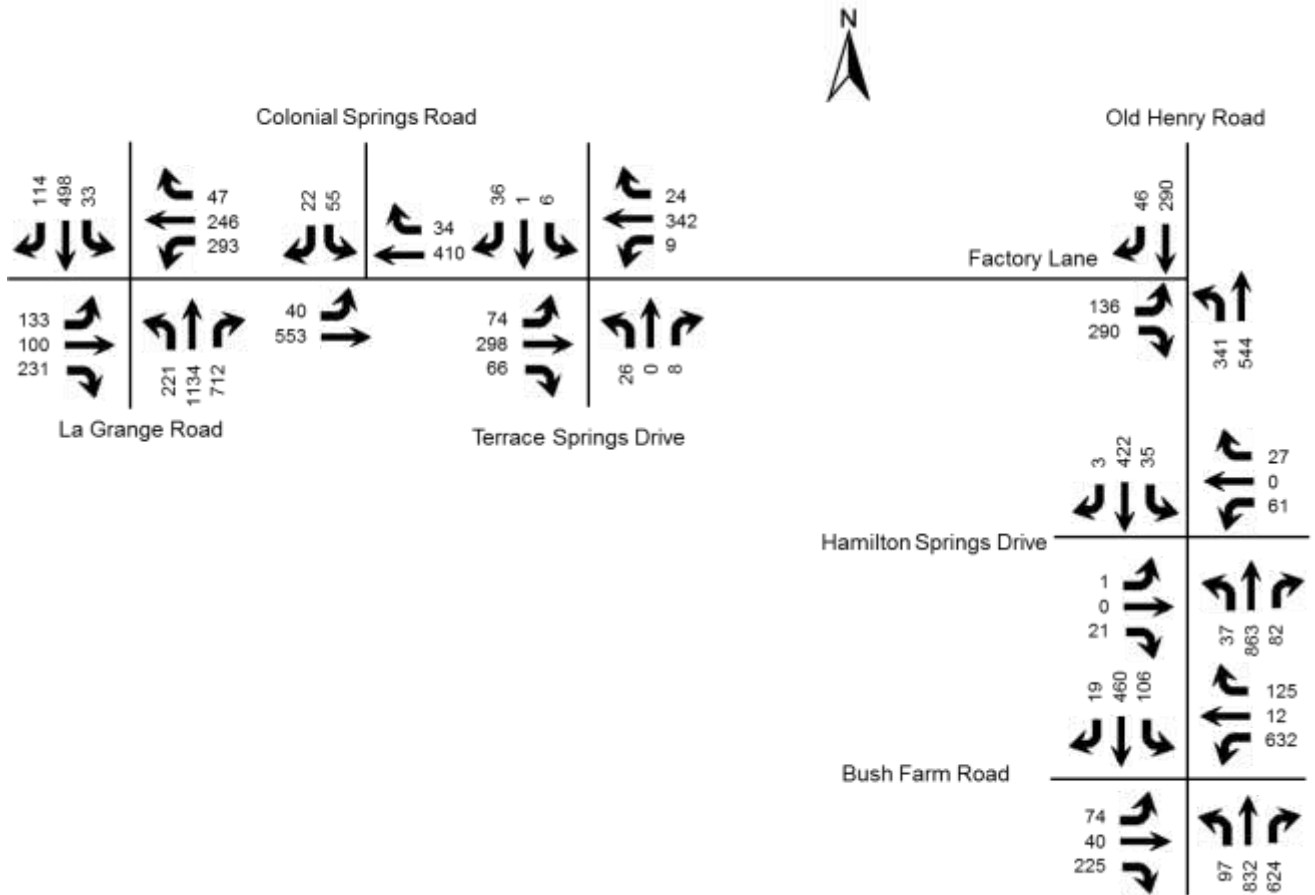


Figure 5 : No Build P.M. Peak Hour Volumes

## 4. Trip Generation and Distribution

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 use of “Single-Family Detached Housing (210)” and “Residential Condominium/Townhouse (230)” best describe this development. The trip generation results are listed in **Table 1**. The results of the trip generation analysis are that this additional development will generate 280 a.m. peak hour trips and 354 p.m. peak hour trips. The trips for the development were assigned to the highway network with percentages shown on **Figure 6**. **Figures 7 and 8** show the trips generated by this development and distributed throughout the road network for the year 2022 during the peak hours. **Figures 9 and 10** display the individual turning movements for the year 2022 for the peak hours when the development is completed.

Table 1. Trip Generation Results

	A.M.			P.M.		
	Total Trips	Entering	Exiting	Total Trips	Entering	Exiting
325 Detached lots (210)	237	59	178	304	192	112
80 Attached lots (230)	43	7	36	50	34	16
Total Peak Hour	280	66	214	354	226	128



Figure 6 : Site Trip Distribution Percentages





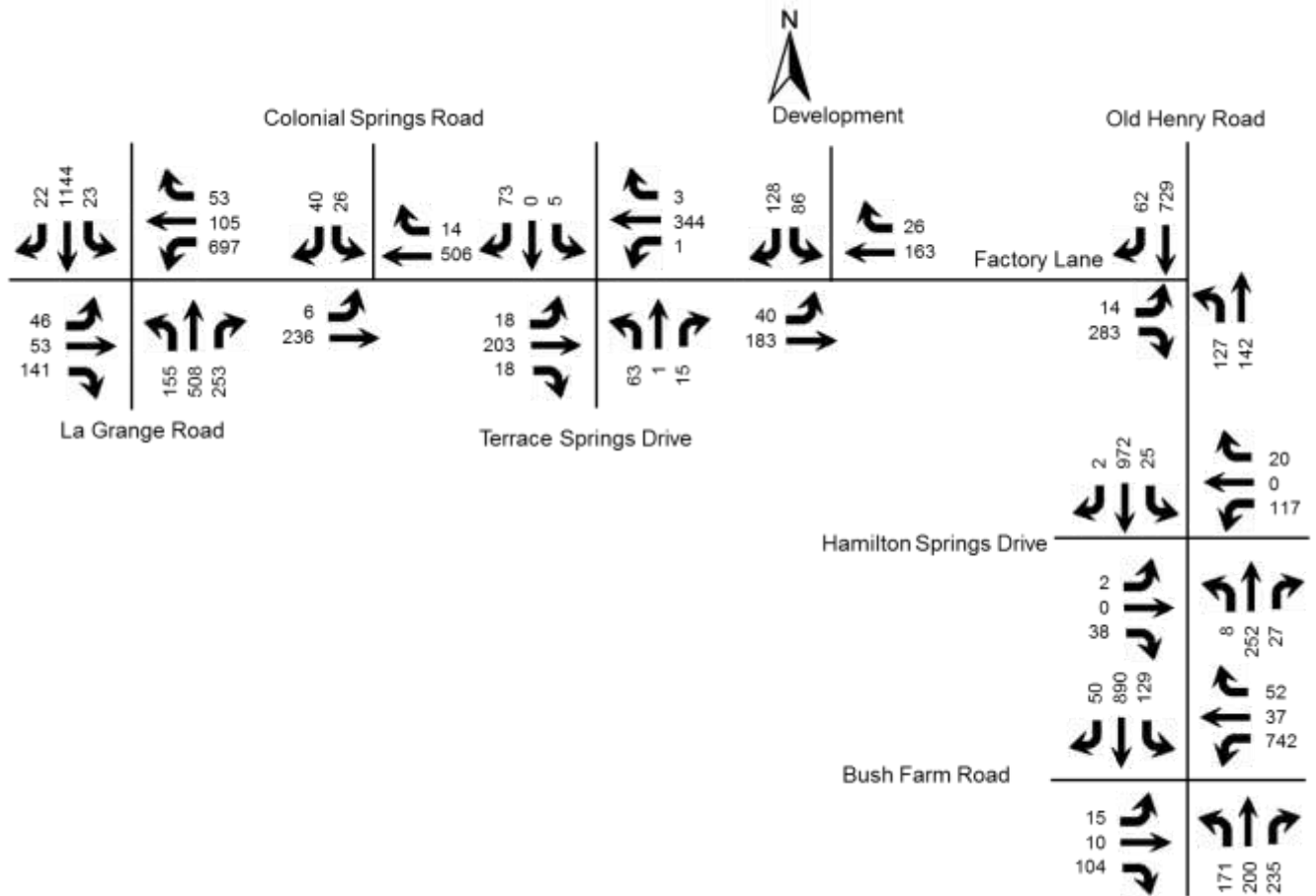


Figure 9 : Build A.M. Peak Hour Volumes

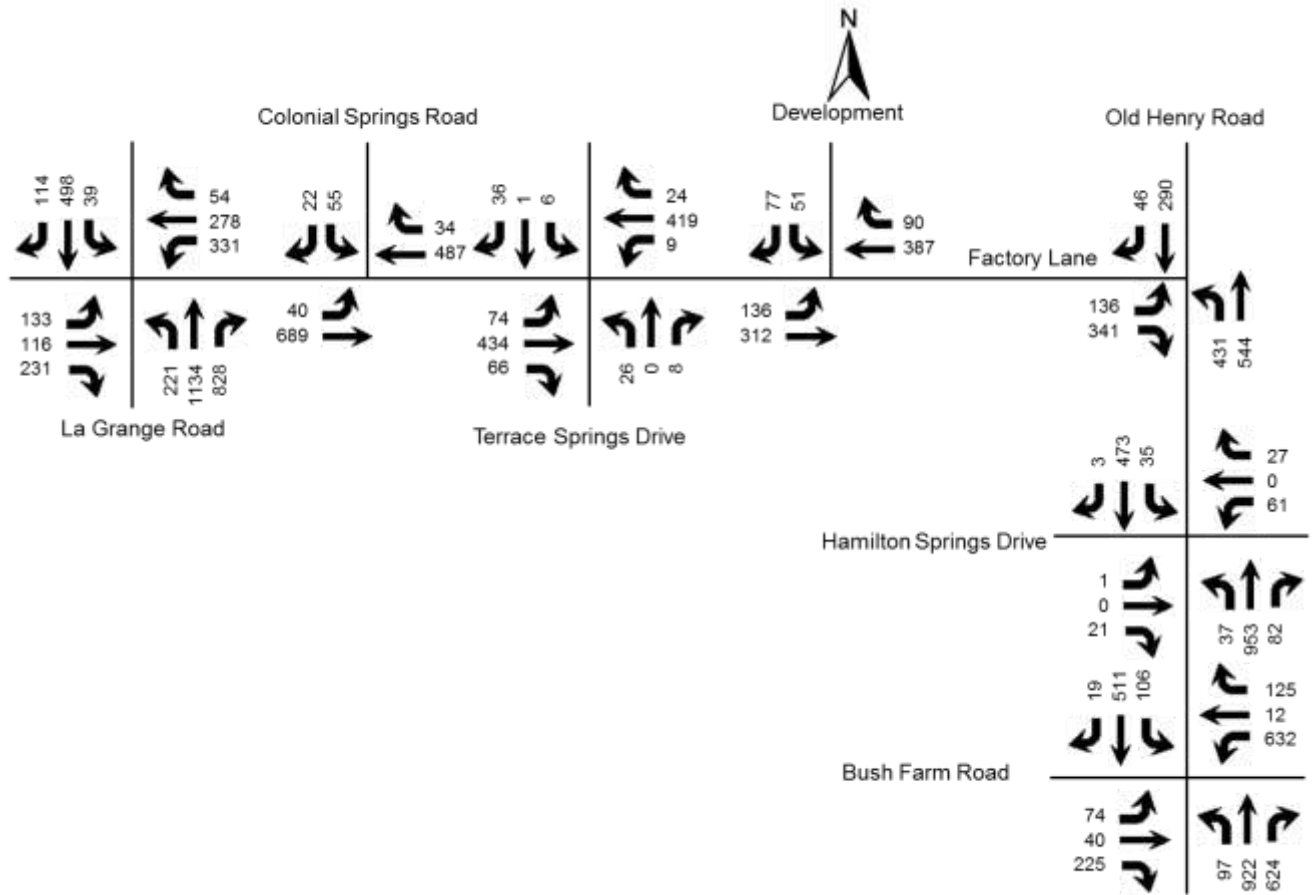


Figure 10 : Build P.M. Peak Hour Volumes

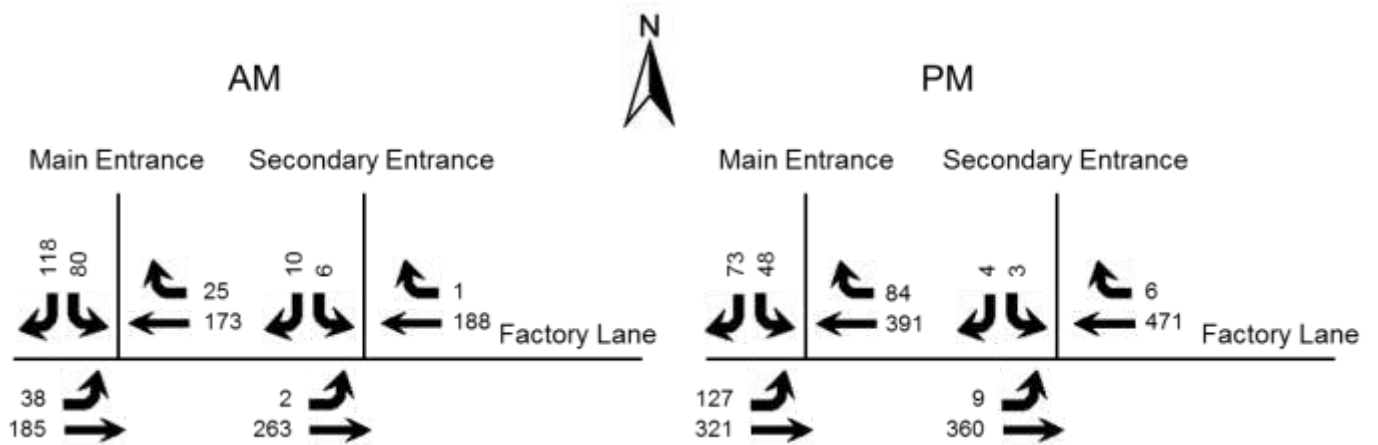


Figure 11 : Build Peak Hour Volumes at the Entrances

## 5. Analysis

The qualitative measure of operation 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 with each level representing a range. LOS results depend upon the type of facility that is analyzed. In this case, the LOS is based upon the average vehicle delay each minor movement experiences at an intersection.

To evaluate the impact of the proposed development, the vehicle delays at the intersection were determined using procedures detailed in the Highway Capacity Manual, 2010 edition. Future delay and Level of Service were determined for the intersection using HCS 2010 Streets (version 6.65) and HCS+ (version 5.6) software. **Table 2** shows the results of the analysis for the three scenarios analyzed.

Metro Transportation Planning evaluates the need and length of auxiliary turn lanes using the Kentucky Transportation Cabinet Auxiliary Turn Lane Policy dated 7/20/2009. Using the volumes in **Figure 11**, an eastbound left turn lane is required at the main entrance. A westbound right turn lane is not required. An eastbound left turn lane is included in the results of the analysis in **Table 2**.

**Table 2 : Level of Service Summary**

Approach	A.M. Peak Hour			P.M. Peak Hour		
	2015	2022 No Build	2022 Build	2015	2022 No Build	2022 Build
<b>La Grange Road at Factory Lane</b>	<b>D</b> <b>39.7</b>	<b>E</b> <b>70.5</b>	<b>F</b> <b>102.2</b>	<b>C</b> <b>26.9</b>	<b>D</b> <b>35.4</b>	<b>D</b> <b>46.0</b>
La Grange Road Northbound	B 16.4	B 16.8	B 16.8	C 23.7	C 29.9	D 40.8
La Grange Road Southbound	C 27.9	C 31.1	C 31.1	C 27.5	C 31.1	C 32.2
Chamberlain Lane Eastbound	C 34.6	D 39.1	D 39.3	D 37.9	D 43.8	D 45.0
Factory Lane Westbound	F 88.8	F 210.4	F 310.3	C 28.5	D 52.8	E 77.6
<b>Factory Lane at Colonial Springs Road</b>						
Factory Lane Eastbound Left Turn	A 8.0	A 8.2	A 8.6	A 8.2	A 8.4	A 8.7
Colonial Springs Road Southbound	B 11.4	B 12.0	B 13.5	B 14.8	B 16.3	C 19.0
<b>Factory Lane at Terrace Springs Drive</b>						
Factory Lane Eastbound Left Turn	A 7.7	A 7.8	A 8.1	A 8.2	A 8.4	A 8.7
Factory Lane Westbound Left Turn	A 7.6	A 7.6	A 7.7	A 8.0	A 8.2	A 8.6
Terrace Springs Drive Northbound	B 11.6	B 12.1	B 13.7	C 15.1	C 16.4	C 19.7
Terrace Springs Drive Southbound	B 12.0	B 12.5	B 14.4	B 11.4	B 12.0	B 13.3

Approach	A.M. Peak Hour			P.M. Peak Hour		
	2015	2022 No Build	2022 Build	2015	2022 No Build	2022 Build
<b>Factory Lane at Main Entrance</b>						
Factory Lane Eastbound Left Turn			A 7.8			A 9.0
Main Entrance Southbound			B 12.4			C 16.8
<b>Factory Lane at Secondary Entrance</b>						
Factory Lane Eastbound Left Turn			A 7.6			A 8.5
Secondary Entrance Southbound			B 10.4			B 14.4
<b>Old Henry Road at Factory Lane</b>						
(This intersection currently operates as an all-way stop. The construction project will create Old Henry as the major street.)						
Old Henry Road Northbound Left Turn	B 11.3	B 10.1	B 10.4	C 17.6	A 9.2	A 9.7
Old Henry Road Southbound (currently Westbound)	B 10.5			E 46.2		
Factory Lane Eastbound	C 24.9	C 24.0	E 38.1	B 14.8	E 42.4	F 74.2
<b>Old Henry Road at Hamilton Springs</b>						
Old Henry Road Northbound Left Turn	A 8.7	A 9.8	B 10.2	A 7.9	A 8.3	A 8.5
Old Henry Road Southbound Left Turn	A 7.6	A 7.8	A 7.9	A 9.9	B 12.2	B 13.5
Arnold Palmer Boulevard Westbound	D 25.2	E 38.5	E 49.9	D 32.4	E 44.2	F 64.2
Hamilton Springs Drive Eastbound	B 12.4	C 17.3	C 19.1	A 9.9	B 12.2	B 13.1
<b>Old Henry Road at Bush Farm Road</b>						
<b>C 31.4    E 77.2    E 76.9    C 20.1    F 116.5    F 124.8</b>						
Old Henry Road Northbound	B 17.8	C 23.3	C 25.3	B 18.6	D 50.4	E 74.7
Old Henry Road Southbound	C 28.4	B 19.1	B 19.8	B 16.4	E 76.5	E 71.9
Bush Farm Road Eastbound	B 13.7	C 21.7	C 22.0	B 19.3	C 21.1	C 21.1
Bush Farm Road Westbound	D 40.8	F 188.2	F 192.7	C 28.6	F 317.3	F 317.3

Key: Level of Service, Delay in seconds per vehicle



## 6. Conclusion

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2022, there will be impacts to the existing highway network. At the main entrance to the subdivision a left turn lane will be installed per Metro policy. Turn lanes are not required at the secondary entrance.

This report identifies capacity deficiencies at both signalized intersections in the study area. At the La Grange Road intersection with Factory Lane improvements should be realized with the installation of a signal at the intersection of Springs Station Road. This signal has been requested by the shopping center owner and is currently in the review process at KYTC. This proposed signal could divert as much as 30 percent of the shopping center traffic currently using Factory Lane.

At the Old Henry Road intersection with Bush Farm Road, the capacity deficiency is caused by the traffic forecast from the Old Henry Crossings development to utilize Bush Farm Road (westbound left turn). The proposed development does not add traffic to that movement. Once the proposed traffic signal at Terra Crossings is installed, the traffic volumes on Bush Farm Road should decrease.

## Appendix A. Traffic Counts

**Study Name LaGrange Rd & Chamberlain Ln**

**Start Date 02/24/2015**

**Start Time 7:00 AM**

	LaGrange Road Southbound			Factory Lane Westbound			LaGrange Road Northbound				Chamberlain Lane Eastbound		
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	178	3	118	16	8	25	77	33	0	16	3	27
7:15 AM	3	240	2	122	10	7	20	107	39	0	14	7	38
7:30 AM	2	286	5	118	21	12	30	108	50	0	8	5	32
7:45 AM	8	217	4	133	25	10	38	108	58	3	12	18	34
	13	921	14	491	72	37	113	400	180	3	50	33	131
8:00 AM	4	231	8	132	20	9	44	109	42	1	5	10	16
8:15 AM	7	194	11	111	21	8	36	95	47	0	8	10	33
8:30 AM	1	202	9	96	20	2	39	84	50	0	6	14	22
8:45 AM	9	155	11	97	18	13	25	81	55	0	9	15	26
	21	782	39	436	79	32	144	369	194	1	28	49	97
4:00 PM	8	115	10	64	27	12	29	180	113	0	36	35	99
4:15 PM	4	134	17	58	24	18	38	234	141	0	23	28	87
4:30 PM	1	120	12	55	36	8	48	210	142	0	30	38	86
4:45 PM	4	97	24	67	46	10	33	217	138	0	35	24	50
	17	466	63	244	133	48	148	841	534	0	124	125	322
5:00 PM	7	106	19	56	38	12	56	239	156	0	28	20	42
5:15 PM	8	110	24	68	63	7	34	245	170	0	27	19	59
5:30 PM	9	111	30	58	62	11	65	264	142	0	23	22	46
5:45 PM	4	99	15	52	40	15	32	241	134	0	24	23	46
	28	426	88	234	203	45	187	989	602	0	102	84	193

	LaGrange Road Southbound			Factory Lane Westbound			LaGrange Road Northbound				Chamberlain Lane Eastbound		
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right
7:15 AM	3	240	2	122	10	7	20	107	39	0	14	7	38
7:30 AM	2	286	5	118	21	12	30	108	50	0	8	5	32
7:45 AM	8	217	4	133	25	10	38	108	58	3	12	18	34
8:00 AM	4	231	8	132	20	9	44	109	42	1	5	10	16
	17	974	19	505	76	38	132	432	189	4	39	40	120

4:45 PM	4	97	24	67	46	10	33	217	138	0	35	24	50
5:00 PM	7	106	19	56	38	12	56	239	156	0	28	20	42
5:15 PM	8	110	24	68	63	7	34	245	170	0	27	19	59
5:30 PM	9	111	30	58	62	11	65	264	142	0	23	22	46
	28	424	97	249	209	40	188	965	606	0	113	85	197

**JACOBS**

11940 Highway 42, Suite 1  
Goshen, KY 40026

Counted by: Andy Wolak

File Name : ColonialSpringsAM  
Site Code : 00512151  
Start Date : 5/12/2015  
Page No : 1

Groups Printed- Unshifted

Start Time	Colonial Springs Rd From North				Factory Lane From East				From South				Factory Lane From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	0	7	14	0	62	1	63	0	0	0	0	0	23	0	23	100
07:15 AM	9	0	11	20	0	75	0	75	0	0	0	0	0	22	0	22	117
07:30 AM	7	0	14	21	0	85	3	88	0	0	0	0	1	38	0	39	148
07:45 AM	13	0	9	22	0	90	4	94	0	0	0	0	3	39	0	42	158
<b>Total</b>	<b>36</b>	<b>0</b>	<b>41</b>	<b>77</b>	<b>0</b>	<b>312</b>	<b>8</b>	<b>320</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>122</b>	<b>0</b>	<b>126</b>	<b>523</b>
08:00 AM	4	0	9	13	0	79	4	83	0	0	0	0	2	50	0	52	148
08:15 AM	2	0	8	10	0	68	3	71	0	0	0	0	0	40	0	40	121
08:30 AM	5	0	4	9	0	69	3	72	0	0	0	0	3	31	0	34	115
08:45 AM	4	0	9	13	0	53	3	56	0	0	0	0	2	30	0	32	101
<b>Total</b>	<b>15</b>	<b>0</b>	<b>30</b>	<b>45</b>	<b>0</b>	<b>269</b>	<b>13</b>	<b>282</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>151</b>	<b>0</b>	<b>158</b>	<b>485</b>
<b>Grand Total</b>	<b>51</b>	<b>0</b>	<b>71</b>	<b>122</b>	<b>0</b>	<b>581</b>	<b>21</b>	<b>602</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>273</b>	<b>0</b>	<b>284</b>	<b>1008</b>
Apprch %	41.8	0	50.2		0	96.5	3.5		0	0	0	0	3.9	96.1	0		
Total %	5.1	0	7	12.1	0	57.6	2.1	59.7	0	0	0	0	1.1	27.1	0	28.2	

Start Time	Colonial Springs Rd From North				Factory Lane From East				From South				Factory Lane From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	7	0	14	21	0	85	3	88	0	0	0	0	1	38	0	39	148
07:45 AM	13	0	9	22	0	90	4	94	0	0	0	0	3	39	0	42	158
08:00 AM	4	0	9	13	0	79	4	83	0	0	0	0	2	50	0	52	148
08:15 AM	2	0	8	10	0	68	3	71	0	0	0	0	0	40	0	40	121
<b>Total Volume</b>	<b>26</b>	<b>0</b>	<b>40</b>	<b>66</b>	<b>0</b>	<b>322</b>	<b>14</b>	<b>336</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>167</b>	<b>0</b>	<b>173</b>	<b>575</b>
% App. Total	39.4	0	60.6		0	95.8	4.2		0	0	0	0	3.5	96.5	0		
PHF	500	000	714	750	000	894	875	894	000	000	000	000	500	835	000	832	910

Groups Printed- Unshifted

Start Time	Colonial Springs Rd From North				Factory Lane From East				From South				Factory Lane 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	12	0	4	16	0	59	5	64	0	0	0	0	6	73	0	79	159
04:15 PM	6	0	5	11	0	61	5	66	0	0	0	0	3	109	0	112	189
04:30 PM	8	0	4	12	0	79	5	84	0	0	0	0	8	132	0	140	236
04:45 PM	18	0	4	22	0	82	6	88	0	0	0	0	3	94	0	97	207
<b>Total</b>	<b>44</b>	<b>0</b>	<b>17</b>	<b>61</b>	<b>0</b>	<b>281</b>	<b>21</b>	<b>302</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>408</b>	<b>0</b>	<b>428</b>	<b>791</b>
05:00 PM	17	0	5	22	0	90	11	101	0	0	0	0	11	125	0	136	259
05:15 PM	17	0	6	23	0	93	8	101	0	0	0	0	8	125	0	133	257
05:30 PM	10	0	4	14	0	84	9	93	0	0	0	0	6	94	0	100	207
05:45 PM	11	0	7	18	0	82	6	88	0	0	0	0	15	127	0	142	248
<b>Total</b>	<b>55</b>	<b>0</b>	<b>22</b>	<b>77</b>	<b>0</b>	<b>349</b>	<b>34</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>471</b>	<b>0</b>	<b>511</b>	<b>971</b>
<b>Grand Total</b>	<b>99</b>	<b>0</b>	<b>39</b>	<b>138</b>	<b>0</b>	<b>630</b>	<b>55</b>	<b>685</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>879</b>	<b>0</b>	<b>939</b>	<b>1762</b>
Apprch %	71.7	0	26.3		0	92	8		0	0	0	0	6.4	93.6	0		
Total %	5.6	0	2.2	7.8	0	35.8	3.1	38.9	0	0	0	0	3.4	49.9	0	53.3	

Start Time	Colonial Springs Rd From North				Factory Lane From East				From South				Factory Lane From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	17	0	5	22	0	90	11	101	0	0	0	0	11	125	0	136	259
05:15 PM	17	0	6	23	0	93	8	101	0	0	0	0	8	125	0	133	257
05:30 PM	10	0	4	14	0	84	9	93	0	0	0	0	6	94	0	100	207
05:45 PM	11	0	7	18	0	82	6	88	0	0	0	0	15	127	0	142	248
<b>Total Volume</b>	<b>55</b>	<b>0</b>	<b>22</b>	<b>77</b>	<b>0</b>	<b>349</b>	<b>34</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>471</b>	<b>0</b>	<b>511</b>	<b>971</b>
% App. Total	71.4	0	26.6		0	91.1	8.9		0	0	0	0	7.8	92.2	0		
PHF	809	000	786	837	000	938	773	948	000	000	000	000	667	927	000	900	937

**JACOBS**

11940 Highway 42, Suite 1  
Goshen, KY 40026

Counted by: Andy Wolak

File Name : FactoryLnAM rot  
Site Code : 00022515  
Start Date : 2/25/2015  
Page No : 1

Groups Printed- Unshifted

Start Time	Terrace Springs Drive From North				Factory Lane From East				Terrace Springs Drive From South				Factory Lane From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	4	0	13	17	1	40	1	42	26	0	0	26	1	22	1	24	109
07:15 AM	3	0	18	21	0	31	0	31	15	0	0	16	4	18	5	27	95
07:30 AM	1	0	21	22	0	41	0	41	16	0	2	18	2	23	3	28	109
07:45 AM	3	0	19	22	0	50	0	50	18	1	3	22	6	42	5	53	147
<b>Total</b>	<b>11</b>	<b>0</b>	<b>71</b>	<b>82</b>	<b>1</b>	<b>162</b>	<b>1</b>	<b>164</b>	<b>75</b>	<b>2</b>	<b>5</b>	<b>82</b>	<b>13</b>	<b>105</b>	<b>14</b>	<b>132</b>	<b>460</b>
08:00 AM	1	0	13	14	1	53	2	56	13	0	3	16	4	42	5	51	137
08:15 AM	0	0	20	20	0	40	1	41	16	0	7	23	6	32	5	43	127
08:30 AM	1	0	16	17	0	30	2	32	15	0	3	18	4	30	2	36	103
08:45 AM	1	0	9	10	2	35	0	37	7	0	1	8	5	33	5	43	98
<b>Total</b>	<b>3</b>	<b>0</b>	<b>58</b>	<b>61</b>	<b>3</b>	<b>158</b>	<b>5</b>	<b>166</b>	<b>51</b>	<b>0</b>	<b>14</b>	<b>65</b>	<b>19</b>	<b>137</b>	<b>17</b>	<b>173</b>	<b>465</b>
<b>Grand Total</b>	<b>14</b>	<b>0</b>	<b>129</b>	<b>143</b>	<b>4</b>	<b>320</b>	<b>6</b>	<b>330</b>	<b>126</b>	<b>2</b>	<b>19</b>	<b>147</b>	<b>32</b>	<b>242</b>	<b>31</b>	<b>305</b>	<b>925</b>
Apprch %	9.8	0	90.2		1.2	97	1.8		85.7	1.4	12.9		10.5	79.3	10.2		
Total %	1.5	0	13.9	15.5	0.4	34.6	0.6	35.7	13.6	0.2	2.1	15.9	3.5	26.2	3.4	33	

Start Time	Terrace Springs Drive From North				Factory Lane From East				Terrace Springs Drive From South				Factory Lane From West				
Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	0	21	22	0	41	0	41	16	0	2	18	2	23	3	28	109
07:45 AM	3	0	19	22	0	50	0	50	18	1	3	22	6	42	5	53	147
08:00 AM	1	0	13	14	1	53	2	56	13	0	3	16	4	42	5	51	137
08:15 AM	0	0	20	20	0	40	1	41	16	0	7	23	6	32	5	43	127
<b>Total Volume</b>	<b>5</b>	<b>0</b>	<b>73</b>	<b>78</b>	<b>1</b>	<b>184</b>	<b>3</b>	<b>188</b>	<b>63</b>	<b>1</b>	<b>15</b>	<b>79</b>	<b>18</b>	<b>139</b>	<b>18</b>	<b>175</b>	<b>520</b>
% App. Total	6.4	0	93.6		0.5	97.9	1.6		79.7	1.3	19		10.3	79.4	10.3		
PHF	.417	.000	.869	.886	.250	.868	.375	.839	.875	.250	.536	.859	.750	.827	.900	.825	.884

Counted by: Andy Wolak

File Name : FactoryLnPM rot  
Site Code : 00022415  
Start Date : 2/24/2015  
Page No : 1

Groups Printed- Unshifted

Start Time	Terrace Springs Drive From North				Factory Lane From East				Terrace Springs Drive From South				Factory Lane 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	1	0	6	7	2	44	3	49	11	0	1	12	17	54	12	83	151
04:15 PM	5	0	11	16	0	50	0	50	5	0	0	5	14	74	21	109	180
04:30 PM	1	0	7	8	1	37	4	42	6	0	1	7	20	65	11	96	153
04:45 PM	0	0	10	10	3	52	0	55	7	1	3	11	20	52	18	90	166
<b>Total</b>	<b>7</b>	<b>0</b>	<b>34</b>	<b>41</b>	<b>6</b>	<b>183</b>	<b>7</b>	<b>196</b>	<b>29</b>	<b>1</b>	<b>5</b>	<b>35</b>	<b>71</b>	<b>245</b>	<b>62</b>	<b>378</b>	<b>650</b>
05:00 PM	1	0	4	5	0	67	5	72	9	0	2	11	8	52	15	75	163
05:15 PM	3	1	13	17	4	75	8	87	6	0	1	7	26	72	16	114	225
05:30 PM	1	0	9	10	3	93	7	103	5	0	1	6	17	66	23	106	225
05:45 PM	1	0	10	11	2	56	4	62	6	0	4	10	23	64	12	99	182
<b>Total</b>	<b>6</b>	<b>1</b>	<b>36</b>	<b>43</b>	<b>9</b>	<b>291</b>	<b>24</b>	<b>324</b>	<b>26</b>	<b>0</b>	<b>8</b>	<b>34</b>	<b>74</b>	<b>254</b>	<b>66</b>	<b>394</b>	<b>795</b>
<b>Grand Total</b>	<b>13</b>	<b>1</b>	<b>70</b>	<b>84</b>	<b>15</b>	<b>474</b>	<b>31</b>	<b>520</b>	<b>55</b>	<b>1</b>	<b>13</b>	<b>69</b>	<b>145</b>	<b>499</b>	<b>128</b>	<b>772</b>	<b>1445</b>
Apprch %	15.5	1.2	83.3		2.9	91.2	6		79.7	1.4	18.8		18.8	64.6	16.6		
Total %	0.9	0.1	4.8	5.8	1	32.8	2.1	36	3.8	0.1	0.9	4.8	10	34.5	8.9	53.4	

Start Time	Terrace Springs Drive From North				Factory Lane From East				Terrace Springs Drive From South				Factory Lane From West				
Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	4	5	0	67	5	72	9	0	2	11	8	52	15	75	163
05:15 PM	3	1	13	17	4	75	8	87	6	0	1	7	26	72	16	114	225
05:30 PM	1	0	9	10	3	93	7	103	5	0	1	6	17	66	23	106	225
05:45 PM	1	0	10	11	2	56	4	62	6	0	4	10	23	64	12	99	182
<b>Total Volume</b>	<b>6</b>	<b>1</b>	<b>36</b>	<b>43</b>	<b>9</b>	<b>291</b>	<b>24</b>	<b>324</b>	<b>26</b>	<b>0</b>	<b>8</b>	<b>34</b>	<b>74</b>	<b>254</b>	<b>66</b>	<b>394</b>	<b>795</b>
% App. Total	14	2.3	83.7		2.8	89.8	7.4		76.5	0	23.5		18.8	64.5	16.8		
PHF	.500	.250	.692	.632	.563	.782	.750	.786	.722	.000	.500	.773	.712	.882	.717	.864	.883



11940 Highway 42, Suite 1  
Goshen, KY 40026

Counted by: Andy Wolak

File Name : FactoryLnOldHenryAM  
Site Code : 05121522  
Start Date : 5/13/2015  
Page No : 1

Groups Printed- Unshifted

Start Time	Old Henry Road From North					Old Henry Road From East					From South					Factory Lane From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	122	0	9	0	130	0	16	10	0	26	0	0	0	0	0	3	27	0	0	30	188
07:15 AM	135	0	17	0	152	0	10	20	0	30	0	0	0	0	0	1	45	0	0	46	231
07:30 AM	133	0	13	0	146	0	16	16	0	32	0	0	0	0	0	4	36	0	0	40	221
07:45 AM	105	0	12	0	117	0	39	16	0	55	0	0	0	0	0	5	42	0	0	47	219
<b>Total</b>	<b>465</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>545</b>	<b>0</b>	<b>84</b>	<b>62</b>	<b>0</b>	<b>146</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>166</b>	<b>867</b>
08:00 AM	112	0	11	0	123	0	18	25	0	43	0	0	0	0	0	2	42	0	0	44	210
08:15 AM	90	0	10	0	100	0	23	15	0	38	0	0	0	0	0	5	44	0	0	49	188
08:30 AM	84	0	13	0	97	0	14	23	0	37	0	0	0	0	0	4	31	0	0	35	169
08:45 AM	84	0	14	0	98	0	21	23	0	44	0	0	0	0	0	4	39	0	0	43	185
<b>Total</b>	<b>370</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>418</b>	<b>0</b>	<b>76</b>	<b>87</b>	<b>0</b>	<b>163</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>158</b>	<b>0</b>	<b>0</b>	<b>171</b>	<b>762</b>
<b>Grand Total</b>	<b>865</b>	<b>0</b>	<b>98</b>	<b>0</b>	<b>963</b>	<b>0</b>	<b>160</b>	<b>149</b>	<b>0</b>	<b>309</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>309</b>	<b>0</b>	<b>0</b>	<b>337</b>	<b>1608</b>
Approach %	89.8	0	10.2	0		0	51.8	48.2	0		0	0	0	0	0	8.3	91.7	0	0		
Total %	53.8	0	6.1	0	59.9	0	9.9	9.3	0	19.2	0	0	0	0	0	1.7	19.2	0	0	20.9	

Start Time	Old Henry Road From North					Old Henry Road From East					From South					Factory Lane From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	135	0	17	0	152	0	10	20	0	30	0	0	0	0	0	1	48	0	0	49	231
07:30 AM	133	0	13	0	146	0	19	16	0	35	0	0	0	0	0	4	36	0	0	40	221
07:45 AM	105	0	12	0	117	0	39	16	0	55	0	0	0	0	0	5	42	0	0	47	219
08:00 AM	112	0	11	0	123	0	18	25	0	43	0	0	0	0	0	2	42	0	0	44	210
Total Volume	485	0	53	0	538	0	86	77	0	163	0	0	0	0	0	12	168	0	0	180	861
% App. Total	90.1	0	9.9	0		0	52.8	47.2	0		0	0	0	0	0	6.7	93.3	0	0		
PHF	898	0.000	779	0.000	885	0.000	551	770	0.000	741	0.000	0.000	0.000	0.000	0.000	600	875	0.000	0.000	918	953

Counted by: Andy Wolak

File Name : FactoryLnOldHenryPM  
Site Code : 05111511  
Start Date : 5/12/2015  
Page No : 1

Groups Printed- Unshifted

Start Time	Old Henry Road From North					Old Henry Road From East					From South					Factory Lane From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	48	0	0	0	55	0	39	74	0	113	0	0	0	0	0	22	27	0	0	49	217
04:15 PM	43	0	9	0	50	0	33	71	0	104	0	0	0	0	0	11	42	0	0	53	209
04:30 PM	51	0	14	0	65	0	38	77	0	112	0	0	0	0	0	21	57	0	0	78	266
04:45 PM	47	0	8	0	52	0	41	75	0	118	0	0	0	0	0	18	55	0	0	71	226
<b>Total</b>	<b>187</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>224</b>	<b>0</b>	<b>148</b>	<b>297</b>	<b>0</b>	<b>445</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>181</b>	<b>0</b>	<b>0</b>	<b>251</b>	<b>920</b>
05:00 PM	46	0	12	0	58	0	50	88	0	136	0	0	0	0	0	30	58	0	0	88	279
05:15 PM	55	0	7	0	62	0	84	91	0	175	0	0	0	0	0	28	61	0	0	89	326
05:30 PM	34	0	9	0	43	0	85	100	0	185	0	0	0	0	0	25	65	0	0	90	318
05:45 PM	58	0	11	0	69	0	71	85	0	156	0	0	0	0	0	33	66	0	0	99	324
<b>Total</b>	<b>193</b>	<b>0</b>	<b>39</b>	<b>0</b>	<b>232</b>	<b>0</b>	<b>295</b>	<b>382</b>	<b>0</b>	<b>652</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>116</b>	<b>247</b>	<b>0</b>	<b>0</b>	<b>363</b>	<b>1247</b>
<b>Grand Total</b>	<b>380</b>	<b>0</b>	<b>78</b>	<b>0</b>	<b>458</b>	<b>0</b>	<b>438</b>	<b>658</b>	<b>0</b>	<b>1097</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>186</b>	<b>426</b>	<b>0</b>	<b>0</b>	<b>614</b>	<b>2167</b>
Approach %	83.3	0	16.7	0		0	39.9	60.1	0		0	0	0	0	0	30.3	89.7	0	0		
Total %	17.5	0	3.6	0	21	0	20.2	30.4	0	50.6	0	0	0	0	0	8.5	19.9	0	0	28.5	

Start Time	Old Henry Road From North					Old Henry Road From East					From South					Factory Lane From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	46	0	12	0	58	0	50	86	0	136	0	0	0	0	0	30	55	0	0	85	279
05:15 PM	55	0	7	0	62	0	84	91	0	175	0	0	0	0	0	28	61	0	0	89	326
05:30 PM	34	0	9	0	43	0	85	100	0	185	0	0	0	0	0	25	65	0	0	90	318
05:45 PM	58	0	11	0	69	0	71	85	0	156	0	0	0	0	0	33	66	0	0	99	324
Total Volume	193	0	39	0	232	0	290	362	0	652	0	0	0	0	0	116	247	0	0	363	1247
% App. Total	83.2	0	16.8	0		0	44.5	55.5	0		0	0	0	0	0	32	68	0	0		
PHF	832	0.000	813	0.000	841	0.000	853	905	0.000	881	0.000	0.000	0.000	0.000	0.000	879	936	0.000	0.000	917	956

**TABLE 8**  
**WEEKDAY PEAK HOUR COUNTS**  
 Old Henry Road @ Arnold Palmer Boulevard/Hamilton Springs Drive  
 Old Henry Crossing Traffic Study

Nov-14 Time Interval	Old Henry Parkway						Arnold Palmer Blvd			Hamilton Springs Dr			Totals	
	EB Left	EB Through	EB Right	WB Left	WB Through	WB Right	EB Left	EB Through	EB Right	EB Left	EB Through	EB Right	Quarter Hour	Hourly
7:00-7:15 AM	0	13	1	2	160	0	29	0	2	0	0	0	207	1
7:15-7:30 AM	0	18	4	8	186	0	25	0	3	0	0	0	244	1
7:30-7:45 AM	0	45	5	3	147	0	34	0	7	0	0	1	242	1
7:45-8:00 AM	0	39	6	8	149	0	29	0	6	0	0	2	239	932
8:00-8:15 AM	0	46	12	6	131	0	29	0	4	0	0	0	228	953
8:15-8:30 AM	1	36	10	3	109	0	17	0	3	0	0	2	181	890
8:30-8:45 AM	0	19	13	3	125	0	22	0	3	0	0	0	185	833
8:45-9:00 AM	1	39	12	5	101	0	26	0	11	1	0	0	196	790
<b>TOTAL</b>	<b>2</b>	<b>255</b>	<b>63</b>	<b>38</b>	<b>1108</b>	<b>0</b>	<b>211</b>	<b>0</b>	<b>39</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>1722</b>	<b>---</b>
<b>2014 A.M. PEAK HR</b>	<b>0</b>	<b>148</b>	<b>27</b>	<b>25</b>	<b>613</b>	<b>0</b>	<b>117</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>3</b>		
<b>2016 A.M. PEAK HR</b>	<b>0</b>	<b>154</b>	<b>28</b>	<b>26</b>	<b>638</b>	<b>0</b>	<b>122</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>3</b>		
<b>2018 A.M. PEAK HR</b>	<b>0</b>	<b>160</b>	<b>29</b>	<b>27</b>	<b>664</b>	<b>0</b>	<b>127</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>3</b>		
4:00-4:15 AM	0	88	17	9	61	0	18	1	3	0	0	2	199	---
4:15-4:30 AM	1	114	16	3	59	0	18	0	3	1	0	0	215	---
4:30-4:45 AM	0	90	32	6	77	0	19	0	4	0	0	0	228	---
4:45-5:00 AM	1	140	17	8	74	0	11	0	10	0	0	1	262	904
5:00-5:15 AM	1	179	20	9	67	0	17	0	10	0	0	1	304	1009
5:15-5:30 AM	1	163	23	9	80	1	15	0	5	0	0	1	298	1092
5:30-5:45 AM	0	149	22	9	63	0	18	0	2	0	0	1	264	1128
5:45-6:00 AM	1	137	18	3	67	0	17	0	9	0	0	0	252	1118
<b>TOTAL</b>	<b>5</b>	<b>1060</b>	<b>165</b>	<b>56</b>	<b>548</b>	<b>1</b>	<b>133</b>	<b>1</b>	<b>46</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>2022</b>	<b>---</b>
<b>2014 P.M. PEAK HR</b>	<b>3</b>	<b>631</b>	<b>82</b>	<b>35</b>	<b>284</b>	<b>1</b>	<b>61</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>4</b>		
<b>2016 P.M. PEAK HR</b>	<b>3</b>	<b>656</b>	<b>85</b>	<b>36</b>	<b>295</b>	<b>1</b>	<b>63</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>4</b>		
<b>2018 P.M. PEAK HR</b>	<b>3</b>	<b>683</b>	<b>89</b>	<b>38</b>	<b>307</b>	<b>1</b>	<b>66</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>4</b>		

**JACOBS**  
 11940 Highway 42, Suite 1  
 Goshen, KY 40026

Counted by: Andy Wolak

File Name : OldHenryBushFarmAM  
 Site Code : 00062151  
 Start Date : 6/2/2015  
 Page No : 1

Groups Printed- Unshifted

Start Time	Old Henry Road From North				Bush Farm Road From East				Old Henry Road From South				Bush Farm Road From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	10	142	0	152	121	0	5	126	2	16	16	34	0	1	10	11	323
07:15 AM	8	169	1	178	119	0	9	128	2	12	36	50	0	0	9	9	365
07:30 AM	8	150	0	158	155	0	12	167	2	33	34	69	0	3	19	22	416
07:45 AM	14	158	0	172	161	1	9	171	1	20	42	63	2	1	14	17	423
<b>Total</b>	<b>40</b>	<b>619</b>	<b>1</b>	<b>660</b>	<b>556</b>	<b>1</b>	<b>35</b>	<b>592</b>	<b>7</b>	<b>81</b>	<b>128</b>	<b>216</b>	<b>2</b>	<b>5</b>	<b>52</b>	<b>59</b>	<b>1527</b>
08:00 AM	24	147	1	172	153	2	11	166	2	34	29	65	1	1	16	18	421
08:15 AM	23	149	0	172	146	1	5	152	2	28	33	63	0	0	23	23	410
08:30 AM	14	139	0	153	127	0	7	134	3	25	62	90	0	2	12	14	391
08:45 AM	46	126	2	174	149	1	13	163	4	31	74	109	1	3	11	15	461
<b>Total</b>	<b>107</b>	<b>561</b>	<b>3</b>	<b>671</b>	<b>575</b>	<b>4</b>	<b>36</b>	<b>615</b>	<b>11</b>	<b>118</b>	<b>198</b>	<b>327</b>	<b>2</b>	<b>6</b>	<b>62</b>	<b>70</b>	<b>1683</b>
<b>Grand Total</b>	<b>147</b>	<b>1180</b>	<b>4</b>	<b>1331</b>	<b>1131</b>	<b>5</b>	<b>71</b>	<b>1207</b>	<b>18</b>	<b>199</b>	<b>326</b>	<b>543</b>	<b>4</b>	<b>11</b>	<b>114</b>	<b>129</b>	<b>3210</b>
Apprch %	11	88.7	0.3		93.7	0.4	5.9		3.3	36.6	60		3.1	8.5	88.4		
Total %	4.6	36.8	0.1	41.5	35.2	0.2	2.2	37.6	0.6	6.2	10.2	16.9	0.1	0.3	3.6		4

Start Time	Old Henry Road From North				Bush Farm Road From East				Old Henry Road From South				Bush Farm Road From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	24	147	1	172	153	2	11	166	2	34	29	65	1	1	16	18	421
08:15 AM	23	149	0	172	146	1	5	152	2	28	33	63	0	0	23	23	410
08:30 AM	14	139	0	153	127	0	7	134	3	25	62	90	0	2	12	14	391
08:45 AM	46	126	2	174	149	1	13	163	4	31	74	109	1	3	11	15	461
<b>Total Volume</b>	<b>107</b>	<b>561</b>	<b>3</b>	<b>671</b>	<b>575</b>	<b>4</b>	<b>36</b>	<b>615</b>	<b>11</b>	<b>118</b>	<b>198</b>	<b>327</b>	<b>2</b>	<b>6</b>	<b>62</b>	<b>70</b>	<b>1683</b>
% App. Total	15.9	83.6	0.4		93.5	0.7	5.9		3.4	36.1	60.6		2.9	8.6	88.6		
PHF	582	941	375	964	940	500	692	926	688	868	669	750	500	500	674	761	913

Groups Printed- Unshifted

Start Time	Old Henry Road From North				Bush Farm Road From East				Old Henry Road From South				Bush Farm Road 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	19	57	1	77	97	4	21	122	13	99	105	217	0	1	4	5	421
04:15 PM	12	65	1	78	89	3	11	103	5	93	108	206	0	0	7	7	394
04:30 PM	20	65	1	86	67	0	15	82	15	126	99	240	0	1	7	8	416
04:45 PM	32	83	2	117	78	0	15	93	10	134	123	267	2	0	9	11	488
<b>Total</b>	<b>83</b>	<b>270</b>	<b>5</b>	<b>358</b>	<b>331</b>	<b>7</b>	<b>62</b>	<b>400</b>	<b>43</b>	<b>452</b>	<b>435</b>	<b>930</b>	<b>2</b>	<b>2</b>	<b>27</b>	<b>31</b>	<b>1719</b>
05:00 PM	27	91	2	120	107	1	11	119	25	175	145	345	0	3	6	9	593
05:15 PM	16	86	3	105	81	1	31	113	15	185	141	341	1	3	8	12	571
05:30 PM	18	81	2	101	77	1	12	90	13	175	131	319	2	3	12	17	527
05:45 PM	22	80	2	104	86	2	11	99	7	161	135	303	1	2	12	15	521
<b>Total</b>	<b>83</b>	<b>338</b>	<b>9</b>	<b>430</b>	<b>351</b>	<b>5</b>	<b>65</b>	<b>421</b>	<b>60</b>	<b>696</b>	<b>552</b>	<b>1308</b>	<b>4</b>	<b>11</b>	<b>38</b>	<b>53</b>	<b>2212</b>
<b>Grand Total</b>	<b>166</b>	<b>608</b>	<b>14</b>	<b>788</b>	<b>682</b>	<b>12</b>	<b>127</b>	<b>821</b>	<b>103</b>	<b>1148</b>	<b>987</b>	<b>2238</b>	<b>6</b>	<b>13</b>	<b>65</b>	<b>84</b>	<b>3931</b>
Apprch %	21.1	77.2	1.8		83.1	1.5	15.5		4.6	51.3	44.1		7.1	15.5	77.4		
Total %	4.2	15.5	0.4	20	17.3	0.3	3.2	20.9	2.6	29.2	25.1	56.9	0.2	0.3	1.7		2.1

Start Time	Old Henry Road From North				Bush Farm Road From East				Old Henry Road From South				Bush Farm Road From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	27	91	2	120	107	1	11	119	25	175	145	345	0	3	6	9	593
05:15 PM	16	86	3	105	81	1	31	113	15	185	141	341	1	3	8	12	571
05:30 PM	18	81	2	101	77	1	12	90	13	175	131	319	2	3	12	17	527
05:45 PM	22	80	2	104	86	2	11	99	7	161	135	303	1	2	12	15	521
<b>Total Volume</b>	<b>83</b>	<b>338</b>	<b>9</b>	<b>430</b>	<b>351</b>	<b>5</b>	<b>65</b>	<b>421</b>	<b>60</b>	<b>696</b>	<b>552</b>	<b>1308</b>	<b>4</b>	<b>11</b>	<b>38</b>	<b>53</b>	<b>2212</b>
% App. Total	19.3	78.6	2.1		83.4	1.2	15.4		4.6	53.2	42.2		7.5	20.8	71.7		
PHF	769	929	750	896	820	625	524	884	600	941	952	948	500	917	792	779	933

## Appendix B. Highway Capacity Software Printouts

HCS 2010 Signalized Intersection Results Summary																
<b>General Information</b>						<b>Intersection Information</b>										
Agency	Jacobs					Duration, h	0.25									
Analyst	D Zimmerman		Analysis Date	Jul 21, 2015		Area Type	Other									
Jurisdiction			Time Period	AM Peak		PHF	0.95									
Intersection	Factory Lane		Analysis Year	2015		Analysis Period	1 > 7:00									
File Name	Factory AM 15.xus															
Project Description	Ball Homes															
<b>Demand Information</b>				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				39	40	120	505	76	38	132	432	189	17	974	19	
<b>Signal Information</b>																
Cycle, s	88.1	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	1.4	5.0	30.6	15.0	10.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	4.3	4.0	4.0	0.0						
				Red	3.0	0.0	1.6	2.2	3.5	0.0						
<b>Timer Results</b>				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					4	3	8	1	6	5	2					
Case Number					7.3	1.0	3.0	1.1	3.0	1.1	4.0					
Phase Duration, s					17.5	21.2	38.7	13.0	41.5	7.9	36.5					
Change Period, (Y+R <sub>c</sub> ), s					7.5	6.2	7.5	6.5	5.9	6.5	5.9					
Max Allow Headway (MAH), s					4.4	4.0	4.4	4.0	3.7	4.0	3.7					
Queue Clearance Time (q <sub>s</sub> ), s					8.2	17.0	4.5	6.3	9.6	2.6	24.3					
Green Extension Time (g <sub>e</sub> ), s					1.4	0.0	1.4	0.4	6.5	0.0	6.3					
Phase Call Probability					1.00	1.00	1.00	0.97	1.00	0.35	1.00					
Max Out Probability					0.00	1.00	0.00	0.00	0.01	0.00	0.04					
<b>Movement Group Results</b>				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				7	4	14	3	8	18	1	6	16	5	2	12	
Adjusted Flow Rate (v), veh/h				83	126	532	80	40	139	455	199	18	524	521		
Adjusted Saturation Flow Rate (s), veh/h/ln				1623	1594	1792	1881	1594	1792	1791	1594	1792	1881	1868		
Queue Service Time (g <sub>s</sub> ), s				2.0	6.2	15.0	2.5	1.4	4.3	7.6	5.4	0.6	22.3	22.3		
Cycle Queue Clearance Time (g <sub>c</sub> ), s				4.0	6.2	15.0	2.5	1.4	4.3	7.6	5.4	0.6	22.3	22.3		
Green Ratio (g/C)				0.11	0.19	0.31	0.35	0.37	0.43	0.40	0.57	0.36	0.35	0.35		
Capacity (c), veh/h				245	298	480	666	590	265	1448	916	389	653	648		
Volume-to-Capacity Ratio (X)				0.339	0.424	1.107	0.120	0.068	0.525	0.314	0.217	0.046	0.803	0.803		
Available Capacity (c <sub>a</sub> ), veh/h				776	840	480	854	749	946	2234	1266	767	1174	1166		
Back of Queue (Q), veh/ln (50th percentile)				1.6	2.3	12.4	1.0	0.5	1.7	2.9	1.6	0.2	9.4	9.3		
Queue Storage Ratio (RQ) (50th percentile)				0.08	0.12	1.49	0.12	0.07	0.10	0.07	0.13	0.01	0.24	0.24		
Uniform Delay (d <sub>1</sub> ), s/veh				36.3	31.7	31.1	19.2	17.9	19.7	17.9	9.1	18.2	26.1	26.1		
Incremental Delay (d <sub>2</sub> ), s/veh				1.0	1.2	73.5	0.1	0.0	1.6	0.1	0.1	0.0	2.0	2.0		
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	0.0	0.0		
Control Delay (d), s/veh				37.3	32.8	104.6	19.3	18.0	21.3	18.0	9.2	18.2	28.1	28.1		
Level of Service (LOS)				D	C	F	B	B	C	B	A	B	C	C		
Approach Delay, s/veh / LOS				34.6	C	88.8	F	16.4	B	27.9	C					
Intersection Delay, s/veh / LOS				39.7						D						
<b>Multimodal Results</b>				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				3.0	C	2.8	C	2.4	B	2.3	B					
Bicycle LOS Score / LOS				0.8	A	1.6	A	1.1	A	1.4	A					



### HCS 2010 Signalized Intersection Results Summary

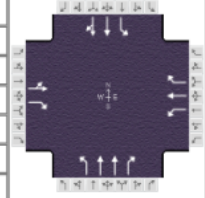
General Information				Intersection Information												
Agency	Jacobs			Duration, h	0.25											
Analyst	D Zimmerman		Analysis Date	Jul 21, 2015												
Jurisdiction		Time Period	AM Peak			Area Type	Other									
Intersection	Factory Lane		Analysis Year	2022 No Build			PHF					0.95				
File Name	Factory AM 22 NB.xus			Analysis Period	1> 7:00											
Project Description	Ball Homes															
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				46	47	141	593	89	45	155	508	222	20	1144	22	
Signal Information																
Cycle, s	99.7	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	1.8	5.8	39.1	15.0	11.9	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	4.3	4.0	4.0	0.0						
				Red	3.0	0.0	1.6	2.2	3.5	0.0						
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					4	3	8	1	6	5	2					
Case Number					7.3	1.0	3.0	1.1	3.0	1.1	4.0					
Phase Duration, s					19.4	21.2	40.6	14.1	50.9	8.3	45.0					
Change Period, (Y+R <sub>c</sub> ), s					7.5	6.2	7.5	6.5	5.9	6.5	5.9					
Max Allow Headway (MAH), s					4.4	4.0	4.4	4.0	3.7	4.0	3.7					
Queue Clearance Time (g <sub>s</sub> ), s					10.2	17.0	5.5	7.2	11.6	2.7	31.5					
Green Extension Time (g <sub>e</sub> ), s					1.6	0.0	1.6	0.5	8.4	0.0	7.6					
Phase Call Probability					1.00	1.00	1.00	0.99	1.00	0.44	1.00					
Max Out Probability					0.00	1.00	0.00	0.00	0.03	0.00	0.17					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				7	4	14	3	8	18	1	6	16	5	2	12	
Adjusted Flow Rate (v), veh/h				98	148	624	94	47	163	535	234	21	616	612		
Adjusted Saturation Flow Rate (s), veh/h/ln				1603	1594	1792	1881	1594	1792	1791	1594	1792	1881	1868		
Queue Service Time (g <sub>s</sub> ), s				3.5	8.2	15.0	3.5	2.0	5.2	9.6	6.8	0.7	29.5	29.5		
Cycle Queue Clearance Time (g <sub>c</sub> ), s				5.5	8.2	15.0	3.5	2.0	5.2	9.6	6.8	0.7	29.5	29.5		
Green Ratio (g/C)				0.12	0.20	0.29	0.33	0.35	0.48	0.45	0.60	0.41	0.39	0.39		
Capacity (c), veh/h				245	312	429	624	557	253	1616	959	398	738	733		
Volume-to-Capacity Ratio (X)				0.400	0.476	1.454	0.150	0.085	0.644	0.331	0.244	0.053	0.834	0.834		
Available Capacity (c <sub>a</sub> ), veh/h				681	761	429	755	668	835	1975	1119	725	1038	1030		
Back of Queue (Q), veh/ln (50th percentile)				2.2	3.2	28.8	1.5	0.7	2.1	3.7	2.1	0.3	12.9	12.9		
Queue Storage Ratio (RQ) (50th percentile)				0.11	0.16	3.45	0.18	0.10	0.13	0.09	0.17	0.02	0.33	0.32		
Uniform Delay (d <sub>1</sub> ), s/veh				41.0	35.6	35.8	23.4	21.8	21.6	17.7	9.3	17.7	27.4	27.4		
Incremental Delay (d <sub>2</sub> ), s/veh				1.3	1.4	216.9	0.1	0.1	2.7	0.1	0.1	0.1	3.9	4.0		
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	0.0			
Control Delay (d), s/veh				42.3	37.0	252.7	23.6	21.8	24.3	17.8	9.4	17.8	31.3	31.3		
Level of Service (LOS)				D	D	F	C	C	C	B	A	B	C	C		
Approach Delay, s/veh / LOS				39.1	D	210.4	F	16.8	B	31.1	C					
Intersection Delay, s/veh / LOS				70.5						E						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				3.0	C	2.8	C	2.4	B	2.3	B					
Bicycle LOS Score / LOS				0.9	A	1.8	A	1.3	A	1.5	A					

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information												
Agency	Jacobs			Duration, h	0.25											
Analyst	D Zimmerman		Analysis Date	Jul 21, 2015												
Jurisdiction			Time Period	AM Peak												
Intersection	Factory Lane		Analysis Year	2022 Build												
File Name	Factory AM 22 B.xus			Analysis Period	1> 7:00											
Project Description	Ball Homes															
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				46	53	141	697	105	53	155	508	253	23	1144	22	
Signal Information																
Cycle, s	100.1	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	2.0	5.7	39.4	15.0	12.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	4.3	4.0	4.0	0.0						
				Red	3.0	0.0	1.6	2.2	3.5	0.0						
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					4	3	8	1	6	5	2					
Case Number					7.3	1.0	3.0	1.1	3.0	1.1	4.0					
Phase Duration, s					19.5	21.2	40.7	14.1	50.9	8.5	45.3					
Change Period, (Y+R <sub>c</sub> ), s					7.5	6.2	7.5	6.5	5.9	6.5	5.9					
Max Allow Headway (MAH), s					4.4	4.0	4.4	4.0	3.7	4.0	3.7					
Queue Clearance Time (g <sub>s</sub> ), s					10.3	17.0	6.2	7.2	11.7	2.8	31.6					
Green Extension Time (g <sub>e</sub> ), s					1.7	0.0	1.8	0.5	8.7	0.0	7.7					
Phase Call Probability					1.00	1.00	1.00	0.99	1.00	0.49	1.00					
Max Out Probability					0.00	1.00	0.00	0.00	0.03	0.00	0.18					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				7	4	14	3	8	18	1	6	16	5	2	12	
Adjusted Flow Rate (v), veh/h					104	148	734	111	56	163	535	266	24	616	612	
Adjusted Saturation Flow Rate (s), veh/h/ln					1607	1594	1792	1881	1594	1792	1791	1594	1792	1881	1868	
Queue Service Time (g <sub>s</sub> ), s					3.9	8.3	15.0	4.2	2.4	5.2	9.7	8.0	0.8	29.6	29.6	
Cycle Queue Clearance Time (g <sub>c</sub> ), s					5.9	8.3	15.0	4.2	2.4	5.2	9.7	8.0	0.8	29.6	29.6	
Green Ratio (g/C)					0.12	0.20	0.29	0.33	0.35	0.48	0.45	0.60	0.41	0.39	0.39	
Capacity (c), veh/h					245	313	423	624	560	254	1612	956	400	740	735	
Volume-to-Capacity Ratio (X)					0.425	0.474	1.733	0.177	0.100	0.643	0.332	0.279	0.061	0.832	0.833	
Available Capacity (c <sub>a</sub> ), veh/h					679	759	423	751	668	832	1967	1114	722	1033	1026	
Back of Queue (Q), veh/ln (50th percentile)					2.4	3.2	42.8	1.8	0.8	2.1	3.7	2.4	0.3	13.0	12.9	
Queue Storage Ratio (RQ) (50th percentile)					0.12	0.16	5.13	0.21	0.12	0.13	0.09	0.21	0.02	0.33	0.33	
Uniform Delay (d <sub>1</sub> ), s/veh					41.2	35.7	35.8	23.8	21.8	21.7	17.8	9.6	17.7	27.4	27.4	
Incremental Delay (d <sub>2</sub> ), s/veh					1.4	1.3	339.5	0.1	0.1	2.7	0.1	0.1	0.1	3.9	4.0	
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	0.0	0.0	
Control Delay (d), s/veh					42.7	37.0	375.3	23.9	21.9	24.4	17.9	9.8	17.7	31.3	31.4	
Level of Service (LOS)					D	D	F	C	C	C	B	A	B	C	C	
Approach Delay, s/veh / LOS				39.3	D	310.3	F	16.8	B	31.1	C					
Intersection Delay, s/veh / LOS				102.2						F						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				3.0	C	2.8	C	2.4	B	2.3	B					
Bicycle LOS Score / LOS				0.9	A	2.0	A	1.3	A	1.5	A					

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Jacobs			Duration, h	0.25		
Analyst	D Zimmerman			Analysis Date	Jul 21, 2015		
Jurisdiction				Time Period	PM Peak		
Intersection	Factory Lane			Analysis Year	2015		
File Name	Factory PM 15.xus			Analysis Period	1> 7:00		
Project Description	Ball Homes						



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	113	85	197	249	209	40	188	965	606	28	424	97

Signal Information				Signal Timing (s)							Signal Phases					
Cycle, s	105.5	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	2.3	1.0	35.6	14.1	19.8	0.0						
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	3.5	3.5	4.3	4.0	4.0	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Red	3.0	3.0	1.6	2.2	3.5	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4	3	8	1	6	5	2
Case Number		7.3	1.0	3.0	1.1	3.0	1.1	4.0
Phase Duration, s		27.3	20.3	47.6	16.3	49.1	8.8	41.5
Change Period, (Y+R <sub>c</sub> ), s		7.5	6.2	7.5	6.5	5.9	6.5	5.9
Max Allow Headway (MAH), s		4.5	4.0	4.5	4.0	3.7	4.0	3.7
Queue Clearance Time (g <sub>s</sub> ), s		16.9	13.9	10.7	9.2	34.2	3.1	14.5
Green Extension Time (g <sub>e</sub> ), s		2.5	0.1	3.0	0.6	8.9	0.0	10.8
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	0.58	1.00
Max Out Probability		0.01	1.00	0.00	0.00	0.30	0.00	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	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (v), veh/h		208	207	262	220	42	198	1016	638	29	282	267
Adjusted Saturation Flow Rate (s), veh/h/ln		1402	1594	1792	1881	1594	1792	1791	1594	1792	1881	1760
Queue Service Time (g <sub>s</sub> ), s		14.7	11.3	11.9	8.7	1.7	7.2	24.7	32.2	1.1	12.3	12.5
Cycle Queue Clearance Time (g <sub>c</sub> ), s		14.9	11.3	11.9	8.7	1.7	7.2	24.7	32.2	1.1	12.3	12.5
Green Ratio (g/C)		0.19	0.28	0.34	0.38	0.40	0.45	0.41	0.54	0.36	0.34	0.34
Capacity (c), veh/h		317	449	368	715	641	426	1466	865	195	636	595
Volume-to-Capacity Ratio (X)		0.657	0.462	0.712	0.308	0.066	0.465	0.693	0.737	0.151	0.443	0.448
Available Capacity (c <sub>a</sub> ), veh/h		583	753	384	715	641	937	1866	1043	495	980	917
Back of Queue (Q), veh/ln (50th percentile)		5.2	4.3	5.4	3.7	0.6	2.9	9.9	11.0	0.5	5.3	5.1
Queue Storage Ratio (RQ) (50th percentile)		0.26	0.22	0.65	0.44	0.09	0.17	0.25	0.92	0.03	0.13	0.13
Uniform Delay (d <sub>1</sub> ), s/veh		40.8	31.3	28.6	23.0	19.4	19.2	25.7	18.4	23.8	27.2	27.3
Incremental Delay (d <sub>2</sub> ), s/veh		2.8	0.9	5.8	0.2	0.0	0.8	0.7	2.1	0.4	0.4	0.5
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	0.0	0.0
Control Delay (d), s/veh		43.6	32.2	34.4	23.2	19.4	20.0	26.4	20.5	24.2	27.6	27.7
Level of Service (LOS)		D	C	C	C	B	C	C	C	C	C	C
Approach Delay, s/veh / LOS	37.9	D		28.5	C		23.7	C		27.5	C	
Intersection Delay, s/veh / LOS	26.9						C					

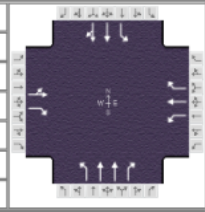
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	3.0	C	2.8	C	2.4	B	2.3	B
Bicycle LOS Score / LOS	1.2	A	1.4	A	2.0	B	1.0	A

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information												
Agency	Jacobs			Duration, h	0.25											
Analyst	D Zimmerman		Analysis Date	Jul 21, 2015		Area Type	Other									
Jurisdiction				Time Period	PM Peak		PHF				0.95					
Intersection	Factory Lane		Analysis Year	2022 No Build		Analysis Period	1> 7:00									
File Name	Factory PM 22 NB.xus															
Project Description	Ball Homes															
Demand Information				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h				133	100	231	293	246	47	221	1134	712	33	498	114	
Signal Information																
Cycle, s	123.5	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	2.8	3.1	44.4	15.0	25.5	0.0						
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	4.3	4.0	4.0	0.0						
				Red	3.0	3.0	1.6	2.2	3.5	0.0						
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					4	3	8	1	6	5	2					
Case Number					7.3	1.0	3.0	1.1	3.0	1.1	4.0					
Phase Duration, s					33.0	21.2	54.2	18.9	59.9	9.3	50.3					
Change Period, (Y+R <sub>c</sub> ), s					7.5	6.2	7.5	6.5	5.9	6.5	5.9					
Max Allow Headway (MAH), s					4.5	4.0	4.5	4.0	3.7	4.0	3.7					
Queue Clearance Time (g <sub>s</sub> ), s					23.5	17.0	14.2	11.6	50.3	3.5	19.1					
Green Extension Time (g <sub>e</sub> ), s					2.0	0.0	3.6	0.8	3.7	0.0	14.0					
Phase Call Probability					1.00	1.00	1.00	1.00	1.00	0.70	1.00					
Max Out Probability					0.07	1.00	0.01	0.00	0.96	0.00	0.22					
Movement Group Results				EB			WB			NB			SB			
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R	
Assigned Movement				7	4	14	3	8	18	1	6	16	5	2	12	
Adjusted Flow Rate (v), veh/h				245	243	308	259	49	233	1194	749	35	332	313		
Adjusted Saturation Flow Rate (s), veh/h/ln				1361	1594	1792	1881	1594	1792	1791	1594	1792	1881	1760		
Queue Service Time (g <sub>s</sub> ), s				21.5	15.4	15.0	12.2	2.4	9.6	34.7	48.3	1.5	16.9	17.1		
Cycle Queue Clearance Time (g <sub>c</sub> ), s				21.5	15.4	15.0	12.2	2.4	9.6	34.7	48.3	1.5	16.9	17.1		
Green Ratio (g/C)				0.21	0.31	0.34	0.38	0.40	0.48	0.44	0.56	0.38	0.36	0.36		
Capacity (c), veh/h				328	491	319	712	640	413	1567	891	165	676	633		
Volume-to-Capacity Ratio (X)				0.749	0.496	0.968	0.364	0.077	0.563	0.762	0.841	0.211	0.490	0.494		
Available Capacity (c <sub>a</sub> ), veh/h				487	677	319	712	640	813	1595	904	414	838	784		
Back of Queue (Q), veh/ln (50th percentile)				7.4	5.9	10.7	5.4	0.9	4.0	14.5	18.1	0.7	7.5	7.1		
Queue Storage Ratio (RQ) (50th percentile)				0.38	0.30	1.29	0.65	0.13	0.24	0.37	1.52	0.04	0.19	0.18		
Uniform Delay (d <sub>1</sub> ), s/veh				47.4	34.9	36.7	27.6	22.8	21.5	29.3	22.7	27.3	30.8	30.8		
Incremental Delay (d <sub>2</sub> ), s/veh				4.2	0.9	41.7	0.3	0.1	1.2	2.1	7.0	0.6	0.5	0.5		
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	0.0			
Control Delay (d), s/veh				51.6	35.9	78.5	28.0	22.9	22.8	31.4	29.7	27.9	31.2	31.3		
Level of Service (LOS)				D	D	E	C	C	C	C	C	C	C			
Approach Delay, s/veh / LOS				43.8	D	52.8	D	29.9	C	31.1	C					
Intersection Delay, s/veh / LOS				35.4						D						
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS				3.0	C	2.8	C	2.4	B	2.3	B					
Bicycle LOS Score / LOS				1.3	A	1.5	A	2.3	B	1.0	A					

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Jacobs			Duration, h	0.25		
Analyst	D Zimmerman			Analysis Date	Jul 21, 2015		
Jurisdiction				Time Period	PM Peak		
Intersection	Factory Lane			Analysis Year	2022 Build		
File Name	Factory PM 22 B.xus			Area Type	Other		
Project Description	Ball Homes			PHF	0.95		
				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	133	116	231	331	278	54	221	1134	828	39	498	114

Signal Information				Signal Timing (s)										
Cycle, s	126.9	Reference Phase	2	Green	3.1	3.2	45.3	15.0	27.7	0.0	1	2	3	4
Offset, s	0	Reference Point	End	Yellow	3.5	3.5	4.3	4.0	4.0	0.0	5	6	7	8
Uncoordinated	Yes	Simult. Gap E/W	On	Red	3.0	3.0	1.6	2.2	3.5	0.0				
Force Mode	Fixed	Simult. Gap N/S	On											

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4	3	8	1	6	5	2
Case Number		7.3	1.0	3.0	1.1	3.0	1.1	4.0
Phase Duration, s		35.2	21.2	56.4	19.2	60.9	9.6	51.2
Change Period, (Y+R <sub>c</sub> ), s		7.5	6.2	7.5	6.5	5.9	6.5	5.9
Max Allow Headway (MAH), s		4.5	4.0	4.5	4.0	3.8	4.0	3.8
Queue Clearance Time (g <sub>s</sub> ), s		25.7	17.0	16.4	12.0	57.0	3.8	19.6
Green Extension Time (g <sub>e</sub> ), s		2.0	0.0	3.8	0.8	0.0	0.1	15.4
Phase Call Probability		1.00	1.00	1.00	1.00	1.00	0.76	1.00
Max Out Probability		0.14	1.00	0.02	0.00	1.00	0.00	0.28

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	1	6	16	5	2	12
Adjusted Flow Rate (v), veh/h		262	243	348	293	57	233	1194	872	41	332	313
Adjusted Saturation Flow Rate (s), veh/h/ln		1358	1594	1792	1881	1594	1792	1791	1594	1792	1881	1760
Queue Service Time (g <sub>s</sub> ), s		23.7	15.6	15.0	14.4	2.8	10.0	35.9	55.0	1.8	17.5	17.6
Cycle Queue Clearance Time (g <sub>c</sub> ), s		23.7	15.6	15.0	14.4	2.8	10.0	35.9	55.0	1.8	17.5	17.6
Green Ratio (g/C)		0.22	0.32	0.35	0.39	0.41	0.47	0.43	0.55	0.38	0.36	0.36
Capacity (c), veh/h		340	509	309	725	653	409	1553	880	163	672	628
Volume-to-Capacity Ratio (X)		0.771	0.478	1.127	0.403	0.087	0.569	0.769	0.991	0.252	0.494	0.497
Available Capacity (c <sub>a</sub> ), veh/h		472	663	309	725	653	794	1553	880	402	815	763
Back of Queue (Q), veh/ln (50th percentile)		8.3	6.0	14.9	6.3	1.0	4.1	15.2	30.4	0.8	7.8	7.3
Queue Storage Ratio (RQ) (50th percentile)		0.42	0.30	1.79	0.76	0.15	0.25	0.38	2.55	0.05	0.20	0.19
Uniform Delay (d <sub>1</sub> ), s/veh		48.0	34.7	37.7	28.4	22.9	22.4	30.5	28.1	28.3	31.8	31.9
Incremental Delay (d <sub>2</sub> ), s/veh		5.8	0.8	89.9	0.4	0.1	1.2	2.3	28.0	0.8	0.5	0.5
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	0.0	0.0
Control Delay (d), s/veh		53.8	35.6	127.6	28.7	23.0	23.6	32.9	56.1	29.1	32.3	32.4
Level of Service (LOS)		D	D	F	C	C	C	C	E	C	C	C
Approach Delay, s/veh / LOS	45.0	D		77.6	E		40.8	D		32.2	C	
Intersection Delay, s/veh / LOS	46.0						D					

Multimodal Results	EB			WB			NB			SB		
Pedestrian LOS Score / LOS	3.0	C		2.8	C		2.4	B		2.3	B	
Bicycle LOS Score / LOS	1.3	A		1.6	A		2.4	B		1.1	A	

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2015</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Colonial Springs</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	6	167			322	14		
Peak-Hour Factor, PHF	0.91	0.91	1.00	1.00	0.91	0.91		
Hourly Flow Rate, HFR (veh/h)	6	183	0	0	353	15		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				26		40		
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	28	0	43		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	6						71	
C (m) (veh/h)	1196						636	
v/c	0.01						0.11	
95% queue length	0.02						0.38	
Control Delay (s/veh)	8.0						11.4	
LOS	A						B	
Approach Delay (s/veh)	--	--				11.4		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>AM Peak</i>			<i>2022 No Build</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Colonial Springs</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	6	196			378	14		
Peak-Hour Factor, PHF	0.91	0.91	1.00	1.00	0.91	0.91		
Hourly Flow Rate, HFR (veh/h)	6	215	0	0	415	15		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				26		40		
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	28	0	43		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	6						71	
C (m) (veh/h)	1135						587	
v/c	0.01						0.12	
95% queue length	0.02						0.41	
Control Delay (s/veh)	8.2						12.0	
LOS	A						B	
Approach Delay (s/veh)	--	--				12.0		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Colonial Springs</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	6	236			506	14		
Peak-Hour Factor, PHF	0.91	0.91	1.00	1.00	0.91	0.91		
Hourly Flow Rate, HFR (veh/h)	6	259	0	0	556	15		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				26		40		
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	28	0	43		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	6						71	
C (m) (veh/h)	1007						492	
v/c	0.01						0.14	
95% queue length	0.02						0.50	
Control Delay (s/veh)	8.6						13.5	
LOS	A						B	
Approach Delay (s/veh)	--	--					13.5	
Approach LOS	--	--					B	



TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>PM Peak</i>			<i>2015</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Colonial Springs</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	40	471			349	34		
Peak-Hour Factor, PHF	0.94	0.94	1.00	1.00	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)	42	501	0	0	371	36		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0				0	
Lanes	1	1	0	0	1	0		
Configuration	L	T					TR	
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				55		22		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.94	1.00	0.94		
Hourly Flow Rate, HFR (veh/h)	0	0	0	58	0	23		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	42						81	
C (m) (veh/h)	1157						447	
v/c	0.04						0.18	
95% queue length	0.11						0.65	
Control Delay (s/veh)	8.2						14.8	
LOS	A						B	
Approach Delay (s/veh)	--	--				14.8		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 No Build</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Colonial Springs</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	40	553			410	34		
Peak-Hour Factor, PHF	0.94	0.94	1.00	1.00	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)	42	588	0	0	436	36		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				55		22		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.94	1.00	0.94		
Hourly Flow Rate, HFR (veh/h)	0	0	0	58	0	23		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	42						81	
C (m) (veh/h)	1095						398	
v/c	0.04						0.20	
95% queue length	0.12						0.75	
Control Delay (s/veh)	8.4						16.3	
LOS	A						C	
Approach Delay (s/veh)	--	--				16.3		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst	<i>D Zimmerman</i>		Intersection					
Agency/Co.	<i>Jacobs</i>		Jurisdiction					
Date Performed	<i>7/21/2015</i>		Analysis Year		<i>2022 Build</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>			North/South Street: <i>Colonial Springs</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	40	689			487	34		
Peak-Hour Factor, PHF	0.94	0.94	1.00	1.00	0.94	0.94		
Hourly Flow Rate, HFR (veh/h)	42	732	0	0	518	36		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				55		22		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.94	1.00	0.94		
Hourly Flow Rate, HFR (veh/h)	0	0	0	58	0	23		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	42						81	
C (m) (veh/h)	1021						338	
v/c	0.04						0.24	
95% queue length	0.13						0.92	
Control Delay (s/veh)	8.7						19.0	
LOS	A						C	
Approach Delay (s/veh)	--	--				19.0		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	D Zimmerman			Intersection				
Agency/Co.	Jacobs			Jurisdiction				
Date Performed	7/21/2015			Analysis Year	2015			
Analysis Time Period	AM Peak							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Terrace Springs Drive</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	18	139	18	1	184	3		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	20	157	20	1	209	3		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	63	1	15	73	0	5		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	71	1	17	82	0	5		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	20	1	89			87		
C (m) (veh/h)	1364	1405	635			602		
v/c	0.01	0.00	0.14			0.14		
95% queue length	0.04	0.00	0.49			0.50		
Control Delay (s/veh)	7.7	7.6	11.6			12.0		
LOS	A	A	B			B		
Approach Delay (s/veh)	--	--	11.6			12.0		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 No Build</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Terrace Springs Drive</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	<i>18</i>	<i>163</i>	<i>18</i>	<i>1</i>	<i>216</i>	<i>3</i>		
Peak-Hour Factor, PHF	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>		
Hourly Flow Rate, HFR (veh/h)	<i>20</i>	<i>185</i>	<i>20</i>	<i>1</i>	<i>245</i>	<i>3</i>		
Percent Heavy Vehicles	<i>1</i>	--	--	<i>1</i>	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			<i>0</i>			<i>0</i>		
Lanes	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0</i>		
Configuration	<i>L</i>		<i>TR</i>	<i>L</i>		<i>TR</i>		
Upstream Signal		<i>0</i>			<i>0</i>			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	<i>63</i>	<i>1</i>	<i>15</i>	<i>73</i>	<i>0</i>	<i>5</i>		
Peak-Hour Factor, PHF	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>		
Hourly Flow Rate, HFR (veh/h)	<i>71</i>	<i>1</i>	<i>17</i>	<i>82</i>	<i>0</i>	<i>5</i>		
Percent Heavy Vehicles	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>		
Percent Grade (%)	<i>0</i>			<i>0</i>				
Flared Approach		<i>N</i>			<i>N</i>			
Storage		<i>0</i>			<i>0</i>			
RT Channelized			<i>0</i>			<i>0</i>		
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>		
Configuration		<i>LTR</i>			<i>LTR</i>			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>L</i>	<i>L</i>	<i>LTR</i>			<i>LTR</i>		
v (veh/h)	<i>20</i>	<i>1</i>	<i>89</i>			<i>87</i>		
C (m) (veh/h)	<i>1324</i>	<i>1372</i>	<i>598</i>			<i>566</i>		
v/c	<i>0.02</i>	<i>0.00</i>	<i>0.15</i>			<i>0.15</i>		
95% queue length	<i>0.05</i>	<i>0.00</i>	<i>0.52</i>			<i>0.54</i>		
Control Delay (s/veh)	<i>7.8</i>	<i>7.6</i>	<i>12.1</i>			<i>12.5</i>		
LOS	<i>A</i>	<i>A</i>	<i>B</i>			<i>B</i>		
Approach Delay (s/veh)	--	--	<i>12.1</i>			<i>12.5</i>		
Approach LOS	--	--	<i>B</i>			<i>B</i>		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Terrace Springs Drive</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	<i>18</i>	<i>203</i>	<i>18</i>	<i>1</i>	<i>344</i>	<i>3</i>		
Peak-Hour Factor, PHF	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>		
Hourly Flow Rate, HFR (veh/h)	<i>20</i>	<i>230</i>	<i>20</i>	<i>1</i>	<i>390</i>	<i>3</i>		
Percent Heavy Vehicles	<i>1</i>	--	--	<i>1</i>	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			<i>0</i>			<i>0</i>		
Lanes	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0</i>		
Configuration	<i>L</i>		<i>TR</i>	<i>L</i>		<i>TR</i>		
Upstream Signal		<i>0</i>			<i>0</i>			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	<i>63</i>	<i>1</i>	<i>15</i>	<i>73</i>	<i>0</i>	<i>5</i>		
Peak-Hour Factor, PHF	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>	<i>0.88</i>		
Hourly Flow Rate, HFR (veh/h)	<i>71</i>	<i>1</i>	<i>17</i>	<i>82</i>	<i>0</i>	<i>5</i>		
Percent Heavy Vehicles	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>		
Percent Grade (%)	<i>0</i>			<i>0</i>				
Flared Approach		<i>N</i>			<i>N</i>			
Storage		<i>0</i>			<i>0</i>			
RT Channelized			<i>0</i>			<i>0</i>		
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>		
Configuration		<i>LTR</i>			<i>LTR</i>			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>L</i>	<i>L</i>		<i>LTR</i>			<i>LTR</i>	
v (veh/h)	<i>20</i>	<i>1</i>		<i>89</i>			<i>87</i>	
C (m) (veh/h)	<i>1171</i>	<i>1321</i>		<i>501</i>			<i>470</i>	
v/c	<i>0.02</i>	<i>0.00</i>		<i>0.18</i>			<i>0.19</i>	
95% queue length	<i>0.05</i>	<i>0.00</i>		<i>0.64</i>			<i>0.67</i>	
Control Delay (s/veh)	<i>8.1</i>	<i>7.7</i>		<i>13.7</i>			<i>14.4</i>	
LOS	<i>A</i>	<i>A</i>		<i>B</i>			<i>B</i>	
Approach Delay (s/veh)	--	--	<i>13.7</i>			<i>14.4</i>		
Approach LOS	--	--	<i>B</i>			<i>B</i>		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	D Zimmerman			Intersection				
Agency/Co.	Jacobs			Jurisdiction				
Date Performed	7/21/2015			Analysis Year	2015			
Analysis Time Period	PM Peak							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Terrace Springs Drive</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	74	254	66	9	291	24		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	84	288	75	10	330	27		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	26	0	8	6	1	36		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	29	0	9	6	1	40		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	84	10	38			47		
C (m) (veh/h)	1207	1201	393			610		
v/c	0.07	0.01	0.10			0.08		
95% queue length	0.22	0.03	0.32			0.25		
Control Delay (s/veh)	8.2	8.0	15.1			11.4		
LOS	A	A	C			B		
Approach Delay (s/veh)	--	--	15.1			11.4		
Approach LOS	--	--	C			B		

TWO-WAY STOP CONTROL SUMMARY								
General Information			Site Information					
Analyst	<i>D Zimmerman</i>		Intersection					
Agency/Co.	<i>Jacobs</i>		Jurisdiction					
Date Performed	<i>7/21/2015</i>		Analysis Year		<i>2022 No Build</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>			North/South Street: <i>Terrace Springs Drive</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	74	298	66	9	342	24		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	84	338	75	10	388	27		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	26	0	8	6	1	36		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	29	0	9	6	1	40		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	84	10	38			47		
C (m) (veh/h)	1149	1151	355			561		
v/c	0.07	0.01	0.11			0.08		
95% queue length	0.24	0.03	0.36			0.27		
Control Delay (s/veh)	8.4	8.2	16.4			12.0		
LOS	A	A	C			B		
Approach Delay (s/veh)	--	--	16.4			12.0		
Approach LOS	--	--	C			B		



TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Terrace Springs Drive</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	74	434	66	9	419	24		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	84	493	75	10	476	27		
Percent Heavy Vehicles	1	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	26	0	8	6	1	36		
Peak-Hour Factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	29	0	9	6	1	40		
Percent Heavy Vehicles	1	1	1	1	1	1		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		LTR			LTR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LTR		
v (veh/h)	84	10	38			47		
C (m) (veh/h)	1067	1009	283			481		
v/c	0.08	0.01	0.13			0.10		
95% queue length	0.26	0.03	0.46			0.32		
Control Delay (s/veh)	8.7	8.6	19.7			13.3		
LOS	A	A	C			B		
Approach Delay (s/veh)	--	--	19.7			13.3		
Approach LOS	--	--	C			B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>AM Peak</i>			<i>2022</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Main Entrance</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	38	185			173	25		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	43	210	0	0	196	28		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Raised curb</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				80		118		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.88	1.00	0.88		
Hourly Flow Rate, HFR (veh/h)	0	0	0	90	0	134		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	43						224	
C (m) (veh/h)	1351						712	
v/c	0.03						0.31	
95% queue length	0.10						1.35	
Control Delay (s/veh)	7.8						12.4	
LOS	A						B	
Approach Delay (s/veh)	--	--				12.4		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	D Zimmerman			Intersection				
Agency/Co.	Jacobs			Jurisdiction				
Date Performed	7/21/2015			Analysis Year				
Analysis Time Period	PM Peak			2022				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Main Entrance</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	127	321			391	84		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	144	364	0	0	444	95		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Raised curb							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				48		73		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.88	1.00	0.88		
Hourly Flow Rate, HFR (veh/h)	0	0	0	54	0	82		
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	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	144						136	
C (m) (veh/h)	1034						439	
v/c	0.14						0.31	
95% queue length	0.48						1.30	
Control Delay (s/veh)	9.0						16.8	
LOS	A						C	
Approach Delay (s/veh)	--	--				16.8		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	2022			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Secondary Entrance</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	2	263			188	1		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	2	298	0	0	213	1		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	<i>LT</i>			<i>TR</i>				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				6		10		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.88	1.00	0.88		
Hourly Flow Rate, HFR (veh/h)	0	0	0	6	0	11		
Percent Heavy Vehicles	0	0	0	1	0	1		
Percent Grade (%)	0			0				
Flared Approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					<i>LR</i>			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	2						17	
C (m) (veh/h)	1362						685	
v/c	0.00						0.02	
95% queue length	0.00						0.08	
Control Delay (s/veh)	7.6						10.4	
LOS	<i>A</i>						<i>B</i>	
Approach Delay (s/veh)	--	--				10.4		
Approach LOS	--	--				<i>B</i>		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Secondary Entrance</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	9	360			471	6		
Peak-Hour Factor, PHF	0.88	0.88	1.00	1.00	0.88	0.88		
Hourly Flow Rate, HFR (veh/h)	10	409	0	0	535	6		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration	<i>LT</i>			<i>TR</i>				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				3		4		
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.88	1.00	0.88		
Hourly Flow Rate, HFR (veh/h)	0	0	0	3	0	4		
Percent Heavy Vehicles	0	0	0	1	0	1		
Percent Grade (%)	0			0				
Flared Approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					<i>LR</i>			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (veh/h)	10						7	
C (m) (veh/h)	1033						388	
v/c	0.01						0.02	
95% queue length	0.03						0.06	
Control Delay (s/veh)	8.5						14.4	
LOS	<i>A</i>						<i>B</i>	
Approach Delay (s/veh)	--	--					14.4	
Approach LOS	--	--					<i>B</i>	

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	D Zimmerman				Intersection				
Agency/Co.	Jacobs				Jurisdiction				
Date Performed	7/21/2015				Analysis Year	2015			
Analysis Time Period	AM Peak								
Project ID <i>Bail Homes Factory Lane</i>									
East/West Street: <i>Factory Lane</i>					North/South Street: <i>Old Henry Road</i>				
Volume Adjustments and Site Characteristics									
Approach	Eastbound			Westbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R
Volume (veh/h)	12	168	0	0	86	77			
%Thrus Left Lane									
Approach	Northbound			Southbound					
Movement	L	T	R	L	T	R			
Volume (veh/h)	0	0	0	485	0	53			
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LT		TR				LR		
PHF	0.95		0.95				0.95		
Flow Rate (veh/h)	188		171				565		
% Heavy Vehicles	1		1				1		
No. Lanes	1		1		0		1		
Geometry Group	1		1				1		
Duration, T					0.25				
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.1		0.0				0.9		
Prop. Right-Turns	0.0		0.5				0.1		
Prop. Heavy Vehicle	0.0		0.0				0.0		
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7	
hadj, computed	0.0		-0.3				0.1		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20				3.20		
x, initial	0.17		0.15				0.50		
hd, final value (s)	5.81		5.55				5.08		
x, final value	0.30		0.26				0.80		
Move-up time, m (s)	2.0		2.0				2.0		
Service Time, t <sub>s</sub> (s)	3.8		3.6				3.1		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	438		421				699		
Delay (s/veh)	11.32		10.53				24.92		
LOS	B		B				C		
Approach: Delay (s/veh)	11.32		10.53				24.92		
LOS	B		B				C		
Intersection Delay (s/veh)					19.49				
Intersection LOS					C				

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	D Zimmerman			Intersection				
Agency/Co.	Jaccobs			Jurisdiction				
Date Performed	7/21/2015			Analysis Year				
Analysis Time Period	AM Peak			2022 No Build				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	101	142			729	62		
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	106	149	0	0	767	65		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	Two Way Left Turn Lane							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				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)	14		197					
Peak-Hour Factor, PHF	0.95	1.00	0.95	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	14	0	207	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
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		R
v (veh/h)	106					14		207
C (m) (veh/h)	805					318		387
v/c	0.13					0.04		0.53
95% queue length	0.45					0.14		3.04
Control Delay (s/veh)	10.1					16.8		24.5
LOS	B					C		C
Approach Delay (s/veh)	--	--				24.0		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	127	142			729	62		
Peak-Hour Factor, PHF	0.95	0.95	1.00	1.00	0.95	0.95		
Hourly Flow Rate, HFR (veh/h)	133	149	0	0	767	65		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				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)	14		283					
Peak-Hour Factor, PHF	0.95	1.00	0.95	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	14	0	297	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	1	0	1	0	0	0		
Configuration	L		R					
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		R
v (veh/h)	133					14		297
C (m) (veh/h)	805					301		387
v/c	0.17					0.05		0.77
95% queue length	0.59					0.15		6.33
Control Delay (s/veh)	10.4					17.5		39.1
LOS	B					C		E
Approach Delay (s/veh)	--	--				38.1		
Approach LOS	--	--				E		



ALL-WAY STOP CONTROL ANALYSIS								
General Information					Site Information			
Analyst	D Zimmerman				Intersection			
Agency/Co.	Jacobs				Jurisdiction			
Date Performed	7/21/2015				Analysis Year	2015		
Analysis Time Period	PM Peak							
Project ID <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>					North/South Street: <i>Old Henry Road</i>			
Volume Adjustments and Site Characteristics								
Approach	Eastbound			Westbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	116	247	0	0	290	362		
%Thrus Left Lane								
Approach	Northbound			Southbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	193	0	39		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		TR				LR	
PHF	0.96		0.96				0.96	
Flow Rate (veh/h)	377		679				241	
% Heavy Vehicles	1		1				1	
No. Lanes	1		1		0		1	
Geometry Group	1		1				1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.3		0.0				0.8	
Prop. Right-Turns	0.0		0.6				0.2	
Prop. Heavy Vehicle	0.0		0.0				0.0	
hLT-adj	0.2	0.2	0.2	0.2			0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6			-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7			1.7	1.7
hadj, computed	0.1		-0.3				0.1	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20				3.20	
x, initial	0.34		0.60				0.21	
hd, final value (s)	5.83		5.08				6.63	
x, final value	0.61		0.96				0.44	
Move-up time, m (s)	2.0		2.0				2.0	
Service Time, t <sub>s</sub> (s)	3.8		3.1				4.6	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	603		707				491	
Delay (s/veh)	17.56		46.20				14.82	
LOS	C		E				B	
Approach: Delay (s/veh)	17.56		46.20				14.82	
LOS	C		E				B	
Intersection Delay (s/veh)	32.04							
Intersection LOS	D							

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	D Zimmerman			Intersection			
Agency/Co.	Jaccobs			Jurisdiction			
Date Performed	7/21/2015			Analysis Year	2022 No Build		
Analysis Time Period	PM Peak						
Project Description <i>Ball Homes Factory Lane</i>							
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Old Henry Road</i>			
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	341	544			290	46	
Peak-Hour Factor, PHF	0.96	0.96	1.00	1.00	0.96	0.96	
Hourly Flow Rate, HFR (veh/h)	355	566	0	0	302	47	
Percent Heavy Vehicles	1	--	--	0	--	--	
Median Type	Two Way Left Turn Lane						
RT Channelized			0			0	
Lanes	1	1	0	0	1	0	
Configuration	L	T				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)	136		290				
Peak-Hour Factor, PHF	0.96	1.00	0.96	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	141	0	302	0	0	0	
Percent Heavy Vehicles	1	0	1	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	1	0	1	0	0	0	
Configuration	L		R				
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	L					L	R
v (veh/h)	355					141	302
C (m) (veh/h)	1215					157	718
v/c	0.29					0.90	0.42
95% queue length	1.22					6.34	2.09
Control Delay (s/veh)	9.2					104.0	13.6
LOS	A					F	B
Approach Delay (s/veh)	--	--				42.4	
Approach LOS	--	--				E	

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>PM Peak</i>			<i>2022 Build</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Factory Lane</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	431	544			290	46		
Peak-Hour Factor, PHF	0.96	0.96	1.00	1.00	0.96	0.96		
Hourly Flow Rate, HFR (veh/h)	448	566	0	0	302	47		
Percent Heavy Vehicles	1	--	--	0	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0				0	
Lanes	1	1	0	0	1	0		
Configuration	L	T					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)	136		341					
Peak-Hour Factor, PHF	0.96	1.00	0.96	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	141	0	355	0	0	0		
Percent Heavy Vehicles	1	0	1	0	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0				0	
Lanes	1	0	1	0	0	0		
Configuration	L		R					
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		R
v (veh/h)	448					141		355
C (m) (veh/h)	1215					116		718
v/c	0.37					1.22		0.49
95% queue length	1.72					9.00		2.77
Control Delay (s/veh)	9.7					223.5		14.8
LOS	A					F		B
Approach Delay (s/veh)	--	--				74.2		
Approach LOS	--	--				F		

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	<i>D Zimmerman</i>			Intersection			
Agency/Co.	<i>Jacobs</i>			Jurisdiction			
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2015</i>		
Analysis Time Period	<i>AM Peak</i>						
Project Description <i>Ball Homes Factory Lane</i>							
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>			
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	0	148	27	25	613	0	
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	
Hourly Flow Rate, HFR (veh/h)	0	151	27	25	625	0	
Percent Heavy Vehicles	0	--	--	1	--	--	
Median Type	<i>Undivided</i>						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration	<i>LT</i>		<i>R</i>	<i>LTR</i>			
Upstream Signal		1			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	0	0	3	117	0	20	
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	
Hourly Flow Rate, HFR (veh/h)	0	0	3	119	0	20	
Percent Heavy Vehicles	0	0	0	1	0	0	
Percent Grade (%)	0			0			
Flared Approach		<i>N</i>			<i>N</i>		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	1	0	0	1	0	
Configuration		<i>LTR</i>			<i>LTR</i>		
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration	<i>LT</i>	<i>LTR</i>		<i>LTR</i>			<i>LTR</i>
v (veh/h)	0	25		139			3
C (m) (veh/h)	966	1405		315			488
v/c	0.00	0.02		0.44			0.01
95% queue length	0.00	0.05		2.16			0.02
Control Delay (s/veh)	8.7	7.6		25.2			12.4
LOS	<i>A</i>	<i>A</i>		<i>D</i>			<i>B</i>
Approach Delay (s/veh)	--	--		25.2			12.4
Approach LOS	--	--		<i>D</i>			<i>B</i>

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	2022			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	8	226	27	25	886	2		
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98		
Hourly Flow Rate, HFR (veh/h)	8	230	27	25	904	2		
Percent Heavy Vehicles	0	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		1			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	2	0	38	117	0	20		
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98		
Hourly Flow Rate, HFR (veh/h)	2	0	38	119	0	20		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
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)	8	25	139			40		
C (m) (veh/h)	759	1318	241			332		
v/c	0.01	0.02	0.58			0.12		
95% queue length	0.03	0.06	3.26			0.41		
Control Delay (s/veh)	9.8	7.8	38.5			17.3		
LOS	A	A	E			C		
Approach Delay (s/veh)	--	--	38.5			17.3		
Approach LOS	--	--	E			C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>AM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	8	252	27	25	972	2		
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98		
Hourly Flow Rate, HFR (veh/h)	8	257	27	25	991	2		
Percent Heavy Vehicles	0	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		1			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	2	0	38	117	0	20		
Peak-Hour Factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98		
Hourly Flow Rate, HFR (veh/h)	2	0	38	119	0	20		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
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)	8	25	139			40		
C (m) (veh/h)	704	1288	211			296		
v/c	0.01	0.02	0.66			0.14		
95% queue length	0.03	0.06	4.01			0.46		
Control Delay (s/veh)	10.2	7.9	49.9			19.1		
LOS	B	A	E			C		
Approach Delay (s/veh)	--	--	49.9			19.1		
Approach LOS	--	--	E			C		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>PM Peak</i>			<i>2015</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	3	631	82	35	284	1		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	3	678	88	37	305	1		
Percent Heavy Vehicles	0	--	--	1	--	--		
Median Type	<i>Undivided</i>							
RT Channelized			0			0		
Lanes	0	1	1	0	1	0		
Configuration	<i>LT</i>		<i>R</i>	<i>LTR</i>				
Upstream Signal		1			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	4	61	0	27		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	0	0	4	65	0	29		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)	0			0				
Flared Approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	1	0	0	1	0		
Configuration		<i>LTR</i>			<i>LTR</i>			
Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>	<i>LTR</i>	<i>LTR</i>			<i>LTR</i>		
v (veh/h)	3	37	94			4		
C (m) (veh/h)	1266	776	223			739		
v/c	0.00	0.05	0.42			0.01		
95% queue length	0.01	0.15	1.95			0.02		
Control Delay (s/veh)	7.9	9.9	32.4			9.9		
LOS	<i>A</i>	<i>A</i>	<i>D</i>			<i>A</i>		
Approach Delay (s/veh)	--	--	32.4			9.9		
Approach LOS	--	--	<i>D</i>			<i>A</i>		

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year				
Analysis Time Period	<i>PM Peak</i>			<i>2022 No Build</i>				
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	37	863	82	35	422	3		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	39	927	88	37	453	3		
Percent Heavy Vehicles	0	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0			0		
Lanes	1	1	0	1	1	0		
Configuration	L		TR	L		TR		
Upstream Signal		1			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	1	0	21	61	0	27		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	1	0	22	65	0	29		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
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)	39	37	94			23		
C (m) (veh/h)	1115	535	182			524		
v/c	0.03	0.07	0.52			0.04		
95% queue length	0.11	0.22	2.59			0.14		
Control Delay (s/veh)	8.3	12.2	44.2			12.2		
LOS	A	B	E			B		
Approach Delay (s/veh)	--	--	44.2			12.2		
Approach LOS	--	--	E			B		



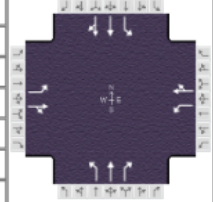
TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	<i>D Zimmerman</i>			Intersection				
Agency/Co.	<i>Jacobs</i>			Jurisdiction				
Date Performed	<i>7/21/2015</i>			Analysis Year	<i>2022 Build</i>			
Analysis Time Period	<i>PM Peak</i>							
Project Description <i>Ball Homes Factory Lane</i>								
East/West Street: <i>Hamilton Springs/Arnold Palmer</i>				North/South Street: <i>Old Henry Road</i>				
Intersection Orientation: <i>North-South</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Northbound			Southbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	37	953	82	35	473	3		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	39	1024	88	37	508	3		
Percent Heavy Vehicles	0	--	--	1	--	--		
Median Type	<i>Two Way Left Turn Lane</i>							
RT Channelized			0				0	
Lanes	1	1	0	1	1		0	
Configuration	L		TR	L			TR	
Upstream Signal		1			0			
Minor Street	Eastbound			Westbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	1	0	21	61	0	27		
Peak-Hour Factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93		
Hourly Flow Rate, HFR (veh/h)	1	0	22	65	0	29		
Percent Heavy Vehicles	0	0	0	1	0	0		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
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)	39	37	94			23		
C (m) (veh/h)	1065	462	148			467		
v/c	0.04	0.08	0.64			0.05		
95% queue length	0.11	0.26	3.45			0.15		
Control Delay (s/veh)	8.5	13.5	64.2			13.1		
LOS	A	B	F			B		
Approach Delay (s/veh)	--	--	64.2			13.1		
Approach LOS	--	--	F			B		

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information											
Agency	Jacobs			Duration, h	0.25										
Analyst	D Zimmerman			Analysis Date	Jul 21, 2015										
Jurisdiction				Time Period	AM Peak										
Intersection	Bush Farm Road			Analysis Year	2015										
File Name	Old Henry at Bush 15 AM.xus			Analysis Period	1 > 7:30										
Project Description	Ball Homes Factory Lane														
Demand Information				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h				3	5	72	615	4	37	7	115	138	69	604	1
Signal Information															
Cycle, s	85.0	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On	Green	32.8	40.0	0.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0	0.0				
				Red	1.3	3.0	0.0	0.0	0.0	0.0	0.0				
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					4		8		2		6				
Case Number					6.0		6.0		5.0		6.0				
Phase Duration, s					46.6		46.6		38.4		38.4				
Change Period, (Y+R <sub>c</sub> ), s					6.6		6.6		5.6		5.6				
Max Allow Headway (MAH), s					4.8		4.8		5.0		5.0				
Queue Clearance Time (g <sub>s</sub> ), s					42.0		42.0		27.8		27.1				
Green Extension Time (g <sub>e</sub> ), s					0.0		0.0		4.9		5.0				
Phase Call Probability					1.00		1.00		1.00		1.00				
Max Out Probability					1.00		1.00		0.17		0.15				
Movement Group Results				EB			WB			NB			SB		
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (v), veh/h				3	78		621	41		7	116	79	70	611	
Adjusted Saturation Flow Rate (s), veh/h/ln				1387	1610		1329	1618		823	1863	1579	1283	1881	
Queue Service Time (g <sub>s</sub> ), s				0.0	2.3		37.7	1.2		0.7	3.5	2.7	3.2	25.1	
Cycle Queue Clearance Time (g <sub>c</sub> ), s				40.0	2.3		40.0	1.2		25.8	3.5	2.7	6.7	25.1	
Green Ratio (g/C)				0.47	0.47		0.47	0.47		0.39	0.39	0.39	0.39	0.39	
Capacity (c), veh/h				85	758		675	762		159	719	609	527	725	
Volume-to-Capacity Ratio (X)				0.036	0.103		0.921	0.054		0.045	0.162	0.129	0.132	0.842	
Available Capacity (c <sub>a</sub> ), veh/h				85	758		675	762		277	986	836	712	996	
Back of Queue (Q), veh/ln (50th percentile)				0.1	0.8		15.1	0.4		0.1	1.4	0.9	0.9	11.0	
Queue Storage Ratio (RQ) (50th percentile)				0.01	0.04		0.76	0.01		0.02	0.04	0.02	0.23	0.28	
Uniform Delay (d <sub>1</sub> ), s/veh				42.5	12.5		24.6	12.2		35.5	17.1	16.9	19.3	23.7	
Incremental Delay (d <sub>2</sub> ), s/veh				0.2	0.1		18.2	0.0		0.2	0.1	0.1	0.2	5.7	
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				42.7	12.6		42.7	12.3		35.7	17.2	17.0	19.5	29.5	
Level of Service (LOS)				D	B		D	B		D	B	B	B	C	
Approach Delay, s/veh / LOS				13.7		B	40.8		D	17.8		B	28.4		C
Intersection Delay, s/veh / LOS				31.4				C							
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS				2.5		B	2.3		B	2.3		B	2.3		B
Bicycle LOS Score / LOS				0.6		A	1.6		A	0.8		A	1.6		A

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information			
Agency	Jacobs			Duration, h	0.25		
Analyst	D Zimmerman	Analysis Date	Jul 21, 2015	Area Type	Other		
Jurisdiction		Time Period	AM Peak	PHF	0.99		
Intersection	Bush Farm Road	Analysis Year	2022 No Build	Analysis Period	1 > 7:30		
File Name	Old Henry at Bush 22 AM NB.xus						
Project Description	Ball Homes Factory Lane						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	15	10	104	742	37	52	171	174	235	129	804	50

Signal Information													
Cycle, s	96.6	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	44.4	40.0	0.0	0.0	0.0	0.0			
				Yellow	4.3	3.6	0.0	0.0	0.0	0.0			
				Red	1.3	3.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8		2		6
Case Number		6.0		6.0		5.0		6.0
Phase Duration, s		46.6		46.6		50.0		50.0
Change Period, (Y+R <sub>c</sub> ), s		6.6		6.6		5.6		5.6
Max Allow Headway (MAH), s		4.8		4.8		5.3		5.3
Queue Clearance Time (g <sub>s</sub> ), s		42.0		42.0		42.3		17.7
Green Extension Time (g <sub>e</sub> ), s		0.0		0.0		2.1		11.7
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		1.00		1.00		1.00		0.31

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement	7	4	14	3	8	18	5	2	12	1	6	16
Assigned Movement												
Adjusted Flow Rate (v), veh/h	15	115		749	90		173	176	177	130	436	427
Adjusted Saturation Flow Rate (s), veh/h/ln	1328	1616		1285	1702		651	1863	1579	1216	1881	1842
Queue Service Time (g <sub>s</sub> ), s	0.0	4.3		35.7	3.2		24.5	5.4	6.6	6.9	15.7	15.7
Cycle Queue Clearance Time (g <sub>c</sub> ), s	40.0	4.3		40.0	3.2		40.3	5.4	6.6	12.4	15.7	15.7
Green Ratio (g/C)	0.41	0.41		0.41	0.41		0.46	0.46	0.46	0.46	0.46	0.46
Capacity (c), veh/h	75	669		549	705		268	856	725	565	864	846
Volume-to-Capacity Ratio (X)	0.203	0.172		1.365	0.127		0.646	0.205	0.244	0.231	0.504	0.504
Available Capacity (c <sub>a</sub> ), veh/h	75	669		549	705		272	868	736	573	877	858
Back of Queue (Q), veh/ln (50th percentile)	0.4	1.6		39.8	1.2		4.0	2.2	2.2	1.9	6.3	6.2
Queue Storage Ratio (RQ) (50th percentile)	0.05	0.08		2.01	0.03		0.50	0.05	0.06	0.47	0.16	0.16
Uniform Delay (d <sub>1</sub> ), s/veh	48.3	17.8		32.9	17.5		32.5	15.6	15.9	19.3	18.4	18.4
Incremental Delay (d <sub>2</sub> ), s/veh	1.6	0.1		175.8	0.1		5.9	0.2	0.2	0.3	0.7	0.7
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	0.0
Control Delay (d), s/veh	49.9	18.0		208.7	17.6		38.4	15.7	16.1	19.6	19.0	19.0
Level of Service (LOS)	D	B		F	B		D	B	B	B	B	B
Approach Delay, s/veh / LOS	21.7		C	188.2		F	23.3		C	19.1		B
Intersection Delay, s/veh / LOS	77.2						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.4	B	2.3	B	2.3	B
Bicycle LOS Score / LOS	0.7	A	1.9	A	1.4	A	1.3	A

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information																							
Agency	Jacobs			Duration, h	0.25																						
Analyst	D Zimmerman	Analysis Date	Jul 21, 2015			Area Type	Other																				
Jurisdiction		Time Period	AM Peak			PHF	0.99																				
Intersection	Bush Farm Road	Analysis Year	2022 Build			Analysis Period	1> 7:30																				
File Name	Old Henry at Bush 22 AM B.xus																										
Project Description	Ball Homes Factory Lane																										
Demand Information				EB			WB			NB			SB														
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R												
Demand (v), veh/h	15	10	104	742	37	52	171	200	235	129	890	50															
Signal Information																											
Cycle, s	97.2	Reference Phase	2																								
Offset, s	0	Reference Point	End																								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	45.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0												
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0												
				Red	1.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0												
Timer Results				EBL			EBT			WBL			WBT			NBL			NBT			SBL			SBT		
Assigned Phase				4			8			2			6														
Case Number				6.0			6.0			5.0			6.0														
Phase Duration, s				46.6			46.6			50.6			50.6														
Change Period, (Y+R <sub>c</sub> ), s				6.6			6.6			5.6			5.6														
Max Allow Headway (MAH), s				4.8			4.8			5.4			5.4														
Queue Clearance Time (g <sub>s</sub> ), s				42.0			42.0			47.0			19.8														
Green Extension Time (g <sub>e</sub> ), s				0.0			0.0			0.0			12.4														
Phase Call Probability				1.00			1.00			1.00			1.00														
Max Out Probability				1.00			1.00			1.00			0.41														
Movement Group Results				EB			WB			NB			SB														
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R												
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16															
Adjusted Flow Rate (v), veh/h	15	115		749	90		173	202	177	130	479	470															
Adjusted Saturation Flow Rate (s), veh/h/ln	1328	1616		1285	1702		600	1863	1579	1187	1881	1846															
Queue Service Time (g <sub>s</sub> ), s	0.0	4.4		35.6	3.2		27.2	6.3	6.6	7.2	17.8	17.8															
Cycle Queue Clearance Time (g <sub>c</sub> ), s	40.0	4.4		40.0	3.2		45.0	6.3	6.6	13.6	17.8	17.8															
Green Ratio (g/C)	0.41	0.41		0.41	0.41		0.46	0.46	0.46	0.46	0.46	0.46															
Capacity (c), veh/h	74	665		545	700		242	862	731	546	871	854															
Volume-to-Capacity Ratio (X)	0.204	0.173		1.376	0.128		0.715	0.234	0.242	0.239	0.550	0.550															
Available Capacity (c <sub>a</sub> ), veh/h	74	665		545	700		242	862	731	546	871	854															
Back of Queue (Q), veh/ln (50th percentile)	0.4	1.6		40.3	1.2		4.6	2.5	2.2	1.9	7.3	7.1															
Queue Storage Ratio (RQ) (50th percentile)	0.05	0.08		2.03	0.03		0.57	0.06	0.06	0.48	0.18	0.18															
Uniform Delay (d <sub>1</sub> ), s/veh	48.6	18.1		33.2	17.8		35.4	15.7	15.8	19.8	18.8	18.8															
Incremental Delay (d <sub>2</sub> ), s/veh	1.6	0.1		180.5	0.1		10.4	0.2	0.2	0.3	1.0	1.0															
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	0.0															
Control Delay (d), s/veh	50.2	18.3		213.7	17.9		45.9	15.9	16.0	20.1	19.8	19.8															
Level of Service (LOS)	D	B		F	B		D	B	B	C	B	B															
Approach Delay, s/veh / LOS	22.0			C			192.7			F			25.3			C			19.8			B					
Intersection Delay, s/veh / LOS	76.9												E														
Multimodal Results				EB			WB			NB			SB														
Pedestrian LOS Score / LOS	2.9	C		2.4	B		2.3	B		2.3	B																
Bicycle LOS Score / LOS	0.7	A		1.9	A		1.4	A		1.4	A																

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information												
Agency	Jacobs			Duration, h	0.25											
Analyst	D Zimmerman	Analysis Date	Jul 21, 2015			Area Type	Other									
Jurisdiction		Time Period	PM Peak			PHF	0.93									
Intersection	Bush Farm Road		Analysis Year	2015		Analysis Period	1 > 5:00									
File Name	Old Henry at Bush 15 PM.xus															
Project Description	Ball Homes Factory Lane															
Demand Information				EB			WB			NB			SB			
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	
Demand (v), veh/h	4	11	38	351	5	65	60	696	552	83	338	9				
Signal Information																
Cycle, s	83.9	Reference Phase	2													
Offset, s	0	Reference Point	End													
Uncoordinated	Yes	Simult. Gap E/W	On	Green	43.6	28.1	0.0	0.0	0.0	0.0	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0				
				Red	1.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0				
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT					
Assigned Phase					4		8		2		6					
Case Number					6.0		6.0		5.0		6.0					
Phase Duration, s					34.7		34.7		49.2		49.2					
Change Period, (Y+R <sub>c</sub> ), s					6.6		6.6		5.6		5.6					
Max Allow Headway (MAH), s					4.7		4.7		5.2		5.2					
Queue Clearance Time (g <sub>s</sub> ), s					4.9		26.0		29.1		38.8					
Green Extension Time (g <sub>e</sub> ), s					2.7		2.1		10.3		4.9					
Phase Call Probability					1.00		1.00		1.00		1.00					
Max Out Probability					0.00		0.06		0.68		0.96					
Movement Group Results				EB			WB			NB			SB			
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16				
Adjusted Flow Rate (v), veh/h	4	53		377	75		65	748	529	89	373					
Adjusted Saturation Flow Rate (s), veh/h/ln	1345	1651		1359	1612		1025	1863	1579	717	1872					
Queue Service Time (g <sub>s</sub> ), s	0.2	1.8		22.1	2.7		3.4	27.1	20.3	9.6	10.0					
Cycle Queue Clearance Time (g <sub>c</sub> ), s	2.9	1.8		24.0	2.7		13.5	27.1	20.3	36.8	10.0					
Green Ratio (g/C)	0.34	0.34		0.34	0.34		0.52	0.52	0.52	0.52	0.52					
Capacity (c), veh/h	494	554		512	541		495	967	820	226	972					
Volume-to-Capacity Ratio (X)	0.009	0.095		0.737	0.139		0.130	0.774	0.645	0.395	0.384					
Available Capacity (c <sub>a</sub> ), veh/h	683	786		704	768		512	998	846	238	1004					
Back of Queue (Q), veh/ln (50th percentile)	0.1	0.7		7.2	1.0		0.7	10.6	6.5	1.6	3.7					
Queue Storage Ratio (RQ) (50th percentile)	0.01	0.03		0.36	0.03		0.09	0.27	0.17	0.41	0.09					
Uniform Delay (d <sub>1</sub> ), s/veh	20.4	19.1		27.4	19.4		16.2	16.2	14.6	31.0	12.1					
Incremental Delay (d <sub>2</sub> ), s/veh	0.0	0.1		3.0	0.1		0.2	4.0	1.9	1.6	0.4					
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	20.5	19.2		30.4	19.6		16.4	20.2	16.5	32.6	12.5					
Level of Service (LOS)	C	B		C	B		B	C	B	C	B					
Approach Delay, s/veh / LOS	19.3	B		28.6	C		18.6	B		16.4	B					
Intersection Delay, s/veh / LOS	20.1						C									
Multimodal Results				EB			WB			NB			SB			
Pedestrian LOS Score / LOS	2.5	B		2.3	B		2.2	B		2.2	B					
Bicycle LOS Score / LOS	0.6	A		1.2	A		2.7	B		1.3	A					

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information																							
Agency	Jacobs			Duration, h	0.25																						
Analyst	D Zimmerman			Analysis Date	Jul 21, 2015																						
Jurisdiction				Time Period	PM Peak																						
Intersection	Bush Farm Road			Analysis Year	2022 No Build																						
File Name	Old Henry at Bush 22 PM NB.xus			Analysis Period	1> 5:00																						
Project Description	Ball Homes Factory Lane																										
Demand Information				EB			WB			NB			SB														
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R												
Demand (v), veh/h				74	40	225	632	12	125	97	832	624	106	460	19												
Signal Information																											
Cycle, s	97.2	Reference Phase	2																								
Offset, s	0	Reference Point	End																								
Uncoordinated	Yes	Simult. Gap E/W	On	Green	45.0	40.0	0.0	0.0	0.0	0.0	0.0																
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0																	
				Red	1.3	3.0	0.0	0.0	0.0	0.0																	
Timer Results				EBL			EBT			WBL			WBT			NBL			NBT			SBL			SBT		
Assigned Phase							4						8						2						6		
Case Number							6.0						6.0						5.0						6.0		
Phase Duration, s							46.6						46.6						50.6						50.6		
Change Period, (Y+R <sub>c</sub> ), s							6.6						6.6						5.6						5.6		
Max Allow Headway (MAH), s							5.1						5.1						5.2						5.2		
Queue Clearance Time (g <sub>s</sub> ), s							14.1						42.0						47.0						47.0		
Green Extension Time (g <sub>e</sub> ), s							8.5						0.0						0.0						0.0		
Phase Call Probability							1.00						1.00						1.00						1.00		
Max Out Probability							0.16						1.00						1.00						1.00		
Movement Group Results				EB			WB			NB			SB														
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R												
Assigned Movement				7	4	14	3	8	18	5	2	12	1	6	16												
Adjusted Flow Rate (v), veh/h				80	285		680	147		104	895	606	114	259	256												
Adjusted Saturation Flow Rate (s), veh/h/ln				1260	1632		1101	1616		900	1863	1579	626	1881	1855												
Queue Service Time (g <sub>s</sub> ), s				4.2	12.1		27.9	5.7		7.9	45.0	32.6	0.0	8.3	8.4												
Cycle Queue Clearance Time (g <sub>c</sub> ), s				10.0	12.1		40.0	5.7		16.3	45.0	32.6	45.0	8.3	8.4												
Green Ratio (g/C)				0.41	0.41		0.41	0.41		0.46	0.46	0.46	0.46	0.46	0.46												
Capacity (c), veh/h				518	672		390	665		413	862	731	74	871	859												
Volume-to-Capacity Ratio (X)				0.154	0.424		1.743	0.222		0.252	1.037	0.830	1.539	0.297	0.298												
Available Capacity (c <sub>a</sub> ), veh/h				518	672		390	665		413	862	731	74	871	859												
Back of Queue (Q), veh/ln (50th percentile)				1.2	4.5		46.7	2.1		1.6	27.3	12.4	7.9	3.3	3.3												
Queue Storage Ratio (RQ) (50th percentile)				0.16	0.23		2.35	0.05		0.20	0.69	0.32	1.99	0.08	0.08												
Uniform Delay (d <sub>1</sub> ), s/veh				21.7	20.4		37.3	18.5		21.3	26.1	22.8	48.6	16.3	16.3												
Incremental Delay (d <sub>2</sub> ), s/veh				0.2	0.5		344.7	0.2		0.5	40.7	8.3	298.7	0.3	0.3												
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	0.0												
Control Delay (d), s/veh				21.9	20.9		382.0	18.7		21.8	66.8	31.0	347.3	16.5	16.5												
Level of Service (LOS)				C	C		F	B		C	F	C	F	B	B												
Approach Delay, s/veh / LOS				21.1	C		317.3	F		50.4	D		76.5	E													
Intersection Delay, s/veh / LOS				116.5						F																	
Multimodal Results				EB			WB			NB			SB														
Pedestrian LOS Score / LOS				2.9	C		2.4	B		2.3	B		2.3	B													
Bicycle LOS Score / LOS				1.1	A		1.9	A		3.1	C		1.0	A													

### HCS 2010 Signalized Intersection Results Summary

General Information				Intersection Information											
Agency	Jacobs			Duration, h	0.25										
Analyst	D Zimmerman	Analysis Date	Jul 21, 2015			Area Type	Other								
Jurisdiction		Time Period	PM Peak			PHF	0.93								
Intersection	Bush Farm Road		Analysis Year	2022 Build		Analysis Period	1 > 5:00								
File Name	Old Henry at Bush 22 PM B.xus														
Project Description	Ball Homes Factory Lane														
Demand Information				EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Demand (v), veh/h	74	40	225	632	12	125	97	922	624	106	511	19			
Signal Information															
Cycle, s	97.2	Reference Phase	2												
Offset, s	0	Reference Point	End												
Uncoordinated	Yes	Simult. Gap E/W	On	Green	45.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0			
				Red	1.3	3.0	0.0	0.0	0.0	0.0	0.0	0.0			
Timer Results				EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT				
Assigned Phase					4		8		2		6				
Case Number					6.0		6.0		5.0		6.0				
Phase Duration, s					46.6		46.6		50.6		50.6				
Change Period, (Y+R <sub>c</sub> ), s					6.6		6.6		5.6		5.6				
Max Allow Headway (MAH), s					5.1		5.1		5.2		5.2				
Queue Clearance Time (g <sub>s</sub> ), s					14.1		42.0		47.0		47.0				
Green Extension Time (g <sub>e</sub> ), s					8.5		0.0		0.0		0.0				
Phase Call Probability					1.00		1.00		1.00		1.00				
Max Out Probability					0.16		1.00		1.00		1.00				
Movement Group Results				EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R			
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16			
Adjusted Flow Rate (v), veh/h	80	285		680	147		104	991	606	114	286	283			
Adjusted Saturation Flow Rate (s), veh/h/ln	1260	1632		1101	1616		855	1863	1579	571	1881	1857			
Queue Service Time (g <sub>s</sub> ), s	4.2	12.1		27.9	5.7		8.6	45.0	32.6	0.0	9.4	9.4			
Cycle Queue Clearance Time (g <sub>c</sub> ), s	10.0	12.1		40.0	5.7		18.0	45.0	32.6	45.0	9.4	9.4			
Green Ratio (g/C)	0.41	0.41		0.41	0.41		0.46	0.46	0.46	0.46	0.46	0.46			
Capacity (c), veh/h	518	672		390	665		387	862	731	74	871	860			
Volume-to-Capacity Ratio (X)	0.154	0.424		1.743	0.222		0.269	1.150	0.830	1.539	0.329	0.330			
Available Capacity (c <sub>a</sub> ), veh/h	518	672		390	665		387	862	731	74	871	860			
Back of Queue (Q), veh/ln (50th percentile)	1.2	4.5		46.7	2.1		1.7	36.9	12.4	7.9	3.8	3.7			
Queue Storage Ratio (RQ) (50th percentile)	0.16	0.23		2.35	0.05		0.21	0.94	0.32	1.99	0.09	0.09			
Uniform Delay (d <sub>1</sub> ), s/veh	21.7	20.4		37.3	18.5		22.2	26.1	22.8	48.6	16.5	16.5			
Incremental Delay (d <sub>2</sub> ), s/veh	0.2	0.5		344.7	0.2		0.5	80.7	8.3	298.7	0.3	0.3			
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	0.0			
Control Delay (d), s/veh	21.9	20.9		382.0	18.7		22.8	106.8	31.0	347.3	16.8	16.9			
Level of Service (LOS)	C	C		F	B		C	F	C	F	B	B			
Approach Delay, s/veh / LOS	21.1		C	317.3			F	74.7			E	71.9		E	
Intersection Delay, s/veh / LOS				124.8						F					
Multimodal Results				EB			WB			NB			SB		
Pedestrian LOS Score / LOS	2.9	C		2.4	B		2.3	B		2.3	B				
Bicycle LOS Score / LOS	1.1	A		1.9	A		3.3	C		1.1	A				