DRAFT

Progress Update Memo – Traffic Analysis

TO: **York Village Study Committee**

FROM: **The Downtown Revitalization Collaborative**

DATE: September 18, 2014

RE: **Progress Update Memo – Traffic Analysis**
York Village Redesign Project
MMI #4606-02

1. INTRODUCTION

The purpose of this memo is to give an update to the Village Study Committee on the progress made on the traffic analysis study report which is part of the Technical Investigation Phase of the York Village Master Plan and Redesign project. We have coordinated with Dean Lessard on the required study area for this traffic analysis. Based on this, the traffic analysis study area includes the intersections of:

1. Route 1A (York Street) at Long Sands Road
2. Route 1A at Lindsey Road & Town Hall Drive
3. Route 1A at Lindsey Road #2 & Town Hall Drive
4. Route 1A at Hospital Drive
5. Route 1A at Williams Avenue
6. Long Sands Road at Public Library Drive
7. Long Sands Road at Woodbridge Road

Since the signing of the contract and the notice to proceed we have been progressing on the traffic analysis study portion of this project. To date we have completed the following tasks:

1. **Traffic Counts (Vehicles, Bikes & Peds):** Collection of vehicle turning movement data including bikes and pedestrians at the study intersection. This was completed on a weekday and Saturday in August; specifically on Tuesday August 12th and Saturday August 16th 2014.
2. **Parking:** Parking Observations and counts we also completed in August (Wednesday 8/27/14 and Saturday 8/30/14). The parking observations were done to assess the occupancy rates for on-street parking in the study area and also to determine what the average duration of parking was for each space. Additionally, we collected gross parking counts at three off-street parking lots, including; in front of the hospital, the library lot and the lot behind the Bank of America.
3. **Accident Data:** Accident data was collected for each of the study intersections and evaluated. This was done to determine if any of the intersections were considered to be high crash locations by Maine DOT or if there were any significant accident patterns.
4. **Sight Distance:** Review of intersection sight distances at each of the study intersections. This was completed based on a posted speed of 25 mph. Maine DOT requires a minimum intersection sight distance (ISD) of 200 ft.
5. **Other Safety Concerns:** During our field visits to the study area we have noted that several of the utility poles are exposed to vehicular traffic and could become a fixed-object that vehicles could potentially hit.
6. **Preliminary Traffic Analysis:** We have begun to analyze traffic operations for the existing conditions and for the three alternative intersection layout plans that were selected by the VSC in an earlier phase of this project. We will have some initial discussion of the results at today's meeting, however, further analysis needs to be completed before final recommendations are presented to the VSC.

The collection of this traffic data will be a key component in the design process. This data will help to educate and inform all of us as we consider design options to meet the goals and objectives of this project.

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Task 1 – Traffic Counts (Vehicles, Bikes & Peds)

Traffic counts were completed at the study intersections in August for a weekday and Saturday. This was done to capture traffic conditions which represent summertime conditions in York. Traffic volume stick diagrams were completed for the study area and are enclosed at the end of this memo. Sheet 1 of 2 shows the vehicular movements and Sheet 2 of 2 shows the combined Bike & Ped Movements. Some initial thoughts on the traffic volumes follow:

- Of the 3 time periods counted, the Saturday peak hour was the highest. Based on the traffic counts, we identified the weekday AM peak hour to be 8 to 9AM; the PM peak hour to be 4:30 to 5:30PM; and the Saturday peak hour to be 11 AM to Noon. These traffic volumes are shown on sheet 1 of 2 at the end of this memo.
- Heavy left-turn movement from York Street onto Long Sands Road (AM - 274, PM - 341, Sat - 462). This would tend to confirm the need for a separate left-turn lane.
- Overall traffic volumes are fairly high for only 1 travel lane in each direction in an area with a high number of side-streets and driveways.
- The Bike and Ped Volumes were highest on Saturday. These are shown on Sheet 2 of 2 at the end of this memo.

Task 2 – Parking Counts

Parking counts were taken for available on-street parking in the study area and at 3 off-street parking lots. We identified 57 existing on-street parking spaces in the study area. We also identified 3 off-street parking lots, including; in front of the hospital, the library parking lot and a lot located behind the Bank of Maine. Parking counts were taken for these areas on Wednesday August 27, 2014 and Saturday August 30, 2014 from 7 AM to 6 PM. The results indicated the following:

On-Street Parking

- 57 spaces available
- Average Occupancy; Weekday: 44% ; Saturday: 32%
- Average Duration of Parking; Weekday: 2.6 hrs; Saturday: 1.3 hrs

Off-Street Parking

- **Library Lot (Lot 1)** 89 spaces available
- Average Occupancy; Weekday: 37, 41% ; Saturday: 26, 28%
- **Hospital Lot (Lot 3)** 184 spaces available
- Average Occupancy; Weekday: 97, 52% ; Saturday: 45, 24%
- **Lot 2 Behind Bank of America;** 33 Spaces Available, Lot closed during counts

Task 3 - Accident Data

Accident Data from Maine DOT was reviewed for the study area intersections. The overall review indicated that 1 of the intersections was considered to be a high crash location by Maine DOT. Maine DOT considers intersections to be a high crash location (HCL) if it experiences 8 or more accidents in a three-year period and it has a critical rate factor (CRF) of greater than 1.0. This intersection was identified as York Street at its intersection with Long Sands Road. This intersection experienced 8 accidents during the time period of 2011 – 2013, and had a CRF of 1.51. A further breakdown of the accidents at this intersection revealed the following:

York St at Long Sands Road (MDOT Nodes 55615, 55616, 65906)

- 8 accidents; 2 in 2011, 4 in 2012, and 2 in 2013.
- Dates of accidents: Feb -1, May – 1, June – 2, July – 2, Oct - 2
- The primary accident patterns included; 4 rear-end/sideswipe type, 2 intersection movement type, 1 pedestrian and 1 bicycle.

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- An accident diagram is included for the intersection at the end of this memo.
- 3 out of 8 accidents produced injury, others only property damage.
- Day of the week; Monday – 2, Tuesday - 1, Wednesday – 2, Thursday – 1, Friday – 2.
- All accidents during daylight hours; 7 in clear conditions and 1 in snow conditions.

Accident Summaries for the remaining study intersections follow:

Lindsey Rd #1 at York St (MDOT Node #55618)
- 1 accident; 1 intersection movement; date: 5/2011

Lindsey Rd #2 at York St (MDOT Node #55617)
- 1 accident; rear-end/sideswipe; date: 6/2010

Williams Ave at York St (MDOT Node #55614)
- 2 accidents; 1 rear-end/sideswipe, 1 intersection movement; dates: 1/2010 & 9/2012

Woodbridge Road at Long Sands Road (MDOT Node #56072)
- 5 accidents, 1 rear-end/sideswipe, 3 intersection movement 1 off-road; dates: 6/2012, 7/2010, 10/2010, 11/2011, 12/2011.

Task 4 – Sight Distance

Intersection sight distances were checked from each of the study intersection. Based on a 25 mph posted speed limit, Maine DOT requires minimum of 200 ft of sight distance. Below we have noted intersections where there was sight distance less than 200 ft.

Long Sands Road Looking Left onto York Street

Signs Clutter Sight Distance View Looking Left

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Looking Left from Town Hall Driveway (Opposite Lindsay Rd #2)

On-street Parking Restricts Sight Distance & Utility Pole Obstructs View

Looking Left from Library Access onto Long Sands Road

On-street Parking Restricts Sight Distance Looking Left

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Looking Left from Gas Station/Convenience Store Drives

On-street Parking Restricts Sight Distance Looking Left

On-street Parking Restricts Sight Distance Looking Left.

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Looking Right from Williams Avenue onto York Street

On-street Parking Restricts Sight Distance Looking Right

Task 5 – Other Safety Concerns (Fixed Objects)

Looking North on Long Sands Road – Utility Poles

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Looking South on Long Sands Road – Utility Poles

Task 6 – Preliminary Traffic Modeling & Analysis

- We have built the existing condition traffic model
- Still need to calibrate based on field observations

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APPENDIX

- **Traffic Volumes (Vehicle, Bike &Ped)**
- **Parking Counts (On-Street & Off-Street)**
- **Accident Diagram (York St at Long Sands Road)**
- **Synchro/Simtraffic Study Area Model**

Drawing: M:\DESIGN\4606-02-DE\TRAFFIC\TRAFFIC COUNTS\PEAK HOUR TRAFFIC COUNTS.DWG Layout Tab:2014 PK HR. TRAFFIC
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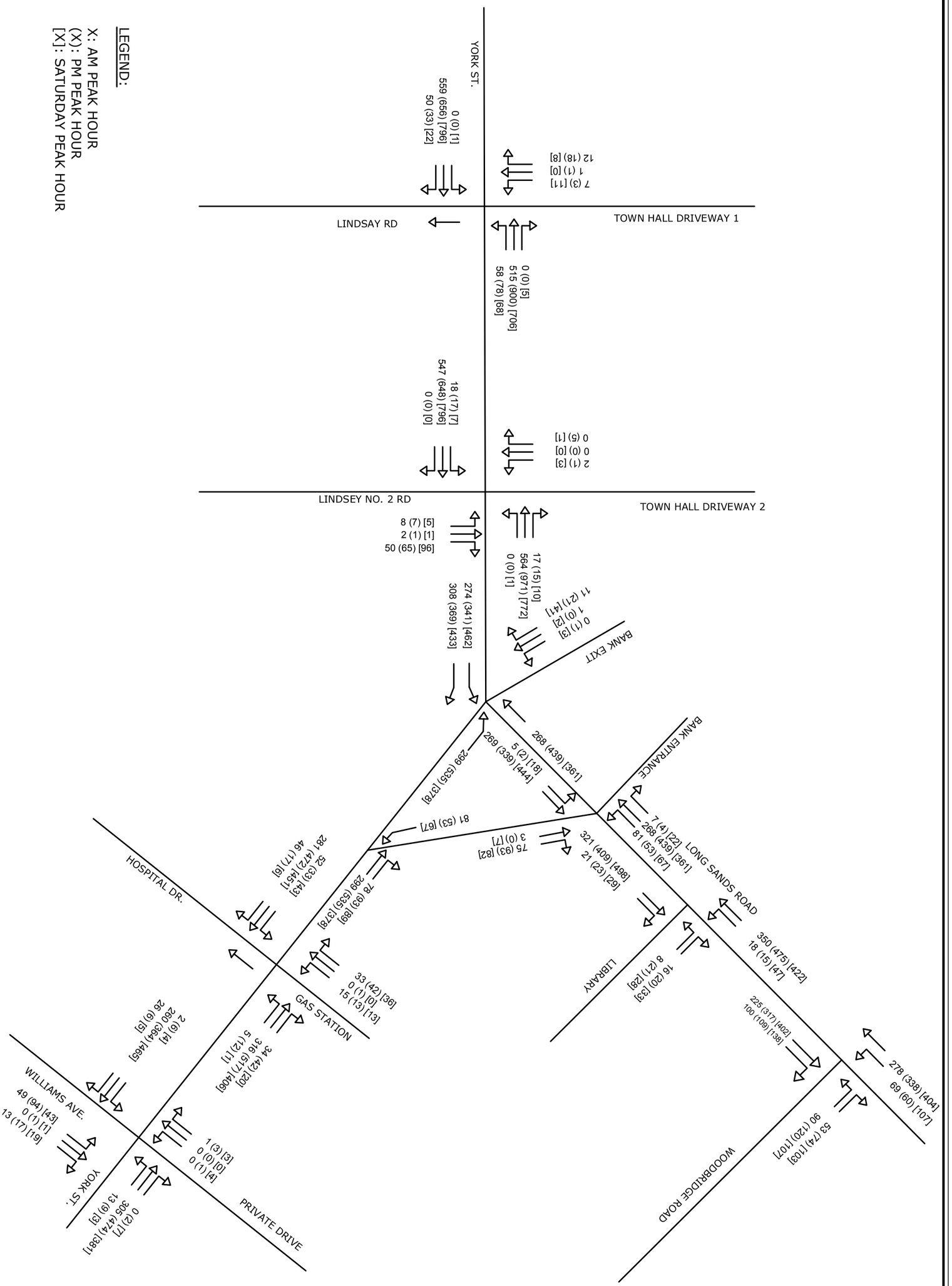

SHEET NO. 1 OF 2	PROJECT NO. 4606-02	DATE SEPTEMBER 16, 2014	SCALE NTS	DESIGNED	
				DRAWN SMW	
				CHECKED JQA	

2014 PEAK HOUR TRAFFIC COUNTS

YORK STREET, LONG SANDS ROAD
YORK, ME

REVISIONS	

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Drawing: W:\DESIGN\4606-02-DE\TRAFFIC\TRAFFIC COUNTS\PEAK HOUR TRAFFIC COUNTS.DWG Layout Tab:2014 PK HR. PEDS
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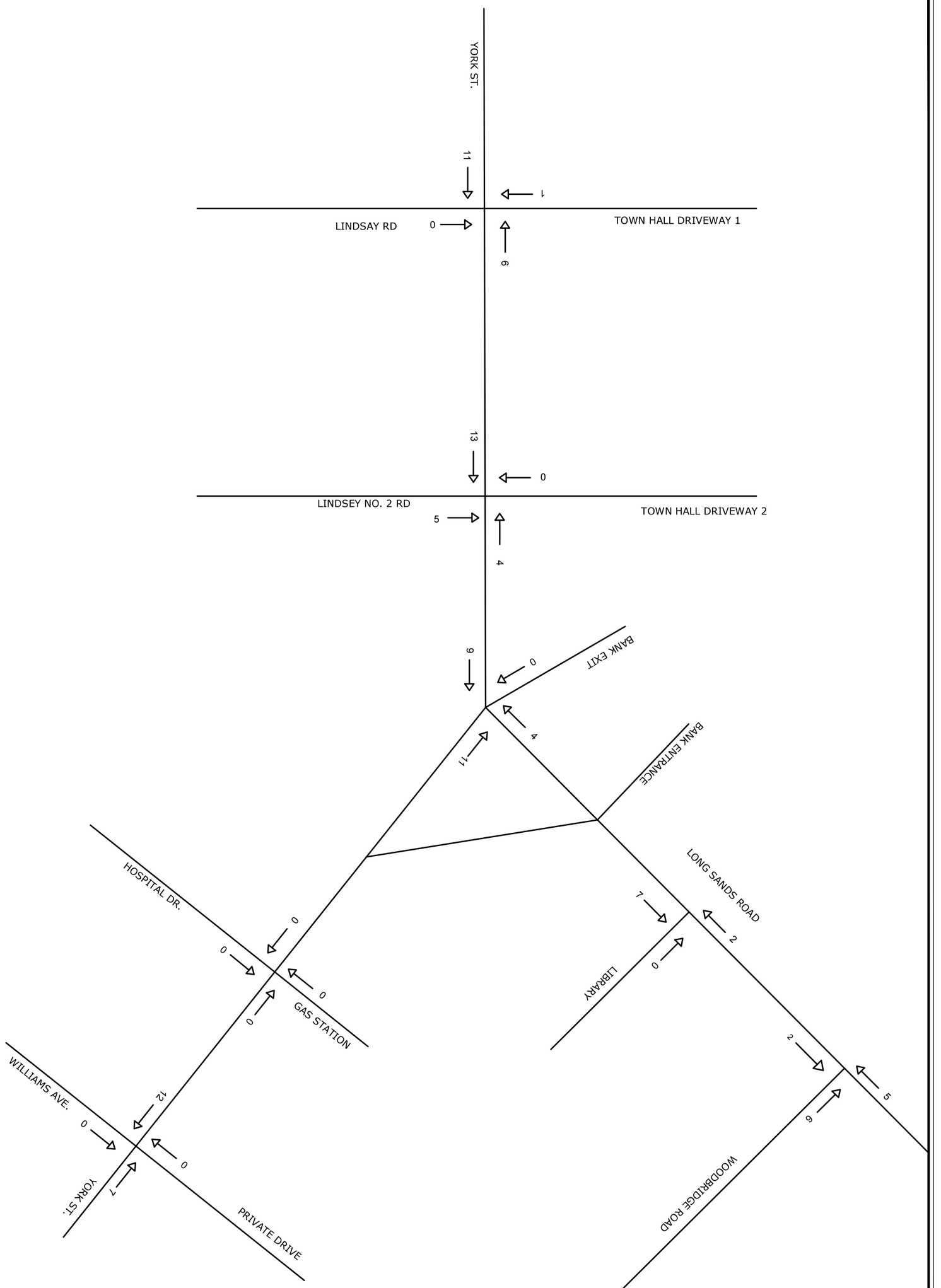

SHEET NO. 2 OF 2	PROJECT NO. 4606-02	DATE SEPTEMBER 16, 2014	SCALE NTS	DESIGNED	
				DRAWN SMW	
				CHECKED JQA	

2014 SATURDAY PEAK HOUR BIKE & PED VOLUMES

YORK STREET, LONG SANDS ROAD
YORK, ME

REVISIONS

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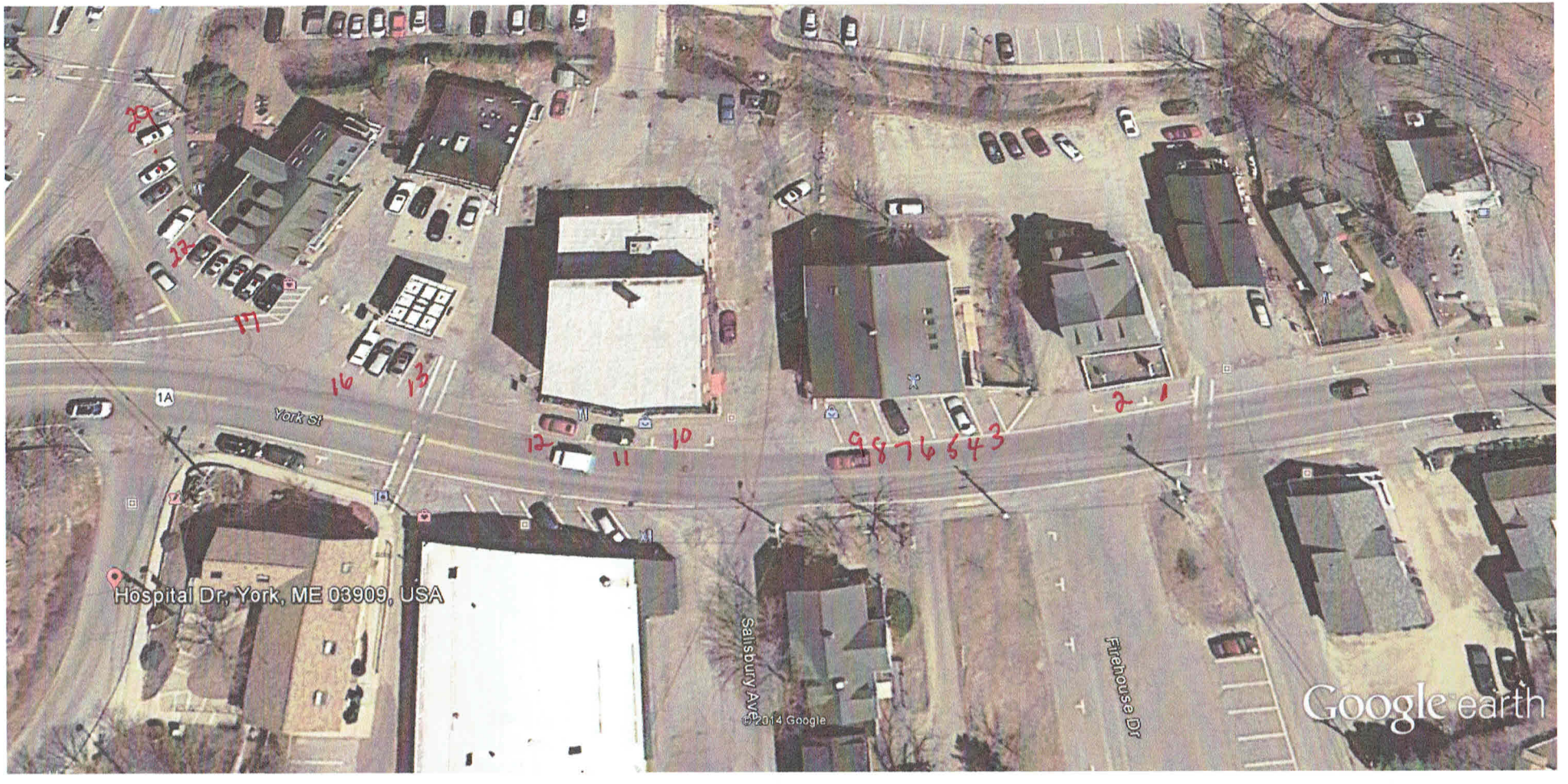
York/Long Sands: Wednesday 8/27/2014

Time	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	% Occupied	Average amount of time occupied (hrs)
Parking Space																									
1							X	X	X				X								X	X	X	35%	1.33
2							X		X		X				X						X	X	X	43%	0.83
3								X	X		X								X	X				30%	0.88
4							X	X	X		X				X				X		X	X	X	52%	1.00
5	X								X		X		X							X				35%	1.00
6						X	X	X	X		X				X				X	X				48%	1.38
7					X	X	X	X	X		X		X		X		X		X	X				70%	8.00
8											X				X							X		22%	0.83
9	X	X	X	X	X	X	X	X	X		X									X				52%	2.00
10							X	X	X		X				X									35%	1.33
11						X	X		X						X				X	X				35%	1.00
12	X	X	X		X	X	X						X		X		X							52%	0.86
13	X	X	X	X	X	X	X	X	X		X		X		X		X		X	X	X	X		96%	11.00
14	X	X	X	X	X	X	X	X	X		X		X		X		X		X	X	X	X	X	100%	11.50
15	X	X	X	X	X	X	X	X	X		X		X				X		X	X	X	X	X	91%	5.25
16	X	X		X				X	X		X				X		X							52%	1.20
17											X											X		13%	0.75
18					X	X	X	X	X		X		X		X		X		X	X	X			74%	2.83
19		X	X	X	X	X	X	X	X		X						X		X	X	X			70%	2.00
20									X		X				X					X		X		35%	0.80
21		X				X	X	X	X		X		X		X		X		X	X	X			74%	2.83
22			X		X	X	X	X	X		X		X		X		X		X					70%	4.00
23													X		X		X		X	X	X	X	X	48%	5.50
24											X													9%	1.00
25															X		X							17%	1.00
26								X	X		X				X		X							39%	2.25
27					X	X	X	X							X				X	X				35%	0.80
28											X				X		X							26%	1.00
29				X	X	X	X	X	X		X		X		X		X		X	X	X			78%	9.00
30		X									X				X		X							30%	1.00
31																								0%	0.00
32																								0%	0.00
33			X	X	X	X	X	X	X		X								X					48%	2.75
34	X	X	X	X	X	X	X	X	X				X		X		X				X	X	X	78%	9.00
35								X	X		X													22%	1.25
36																								0%	0.00
37							X	X																9%	1.00
38																								0%	0.00
39							X												X	X	X			17%	1.00
40											X													9%	1.00
41							X	X	X		X				X		X		X					48%	1.83
42				X		X	X	X			X		X		X									43%	5.00
43																								0%	0.00
44					X	X	X	X	X				X				X		X					43%	1.67
45				X	X	X	X	X	X		X		X		X		X		X	X	X			78%	4.50
46			X	X	X	X	X	X	X		X		X				X		X	X	X			74%	2.83
47						X			X		X								X	X	X			35%	1.33
48				X	X	X	X	X	X		X		X		X		X		X	X				74%	8.50
49							X	X	X								X		X	X	X			39%	1.50
50			X	X	X	X	X	X	X		X		X		X		X		X	X	X		X	87%	5.00
51	X	X	X	X	X	X	X	X	X		X											X	X	61%	3.50
52			X	X	X	X	X	X	X		X		X						X					57%	1.63
53											X		X						X			X		26%	0.75
54									X		X		X		X		X		X	X	X	X		61%	0.88
55							X	X	X				X						X	X				35%	0.80
56								X	X				X							X	X	X	X	39%	0.90
57					X	X	X	X	X															26%	1.00
58					X	X	X	X	X		X		X		X		X		X	X				70%	8.00
NEXT TO 57											X		X		X		X		X	X	X	X	X	57%	6.50
Time	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	Avg % Occupied	Avg time occupied
% Occupied	16%	19%	22%	28%	38%	47%	60%	62%	67%	62%	68%	68%	44%	44%	53%	53%	69%	69%	53%	47%	36%	27%	19%	44%	2.65

York/Long Sands: Saturday 8/30/2014

Time	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	% Occupied	Average amount of time occupied (hrs)
Parking Space																									
1			X	X	X	X	X		X	X	X		X	X	X	X	X	X					X	65%	0.83
2			X	X	X	X	X	X	X			X	X	X	X	X		X						57%	1.30
3			X	X	X	X		X	X	X					X									35%	0.80
4				X	X	X	X	X			X	X	X	X		X								43%	0.83
5	X	X	X	X					X	X	X				X						X	X		43%	1.00
6					X	X	X	X				X	X		X	X	X				X			43%	0.83
7			X	X		X			X	X		X						X		X				35%	0.80
8			X	X	X		X	X	X	X				X	X					X				43%	1.00
9			X	X	X		X		X	X		X	X			X	X	X						48%	0.79
10			X	X	X		X	X	X	X	X			X	X	X	X							52%	0.86
11		X		X	X	X	X			X	X	X	X			X								43%	0.63
12		X	X	X	X		X	X		X	X	X	X		X	X								52%	0.67
13	X	X	X		X	X	X	X		X	X	X	X											48%	0.92
14			X	X	X	X	X	X	X	X	X	X								X	X			52%	3.00
15			X	X	X	X	X	X	X	X	X	X	X	X										57%	6.50
16	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	96%	11.00
17																								0%	0.00
18			X		X	X			X			X	X			X	X		X					39%	0.56
19						X	X	X	X	X	X	X	X	X	X	X								48%	2.75
20				X	X																X			13%	0.50
21				X			X	X	X	X	X	X	X					X		X				43%	1.00
22										X					X									9%	0.50
23					X	X	X	X	X	X	X	X		X		X					X			48%	1.38
24		X																						4%	0.50
25					X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	70%	4.00
26																								0%	0.00
27			X								X	X		X										17%	0.50
28												X	X	X	X	X	X	X					X	35%	2.00
29						X																		4%	0.50
30		X														X	X							13%	0.75
31																								0%	0.00
32																								0%	0.00
33	X	X	X	X	X	X	X	X	X															39%	2.25
34	X	X	X			X							X	X	X	X	X	X	X	X	X	X	X	65%	2.50
35					X						X													9%	0.50
36					X					X	X										X			17%	0.50
37																								0%	0.00
38											No parking													0%	0.00
39																								0%	0.00
40																								0%	0.00
41																								0%	0.00
42																								0%	0.00
43																								0%	0.00
44																								0%	0.00
45												X	X	X	X	X	X	X	X	X				39%	2.25
46									X	X		X	X	X	X	X	X	X	X	X	X			52%	3.00
47								X	X															9%	1.00
48				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				70%	8.00
49										X	X													9%	0.50
50									X	X	X			X	X	X								26%	1.50
51		X	X	X	X			X	X			X			X	X	X	X	X	X	X	X	X	70%	1.14
52		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X				78%	3.00
53									X				X	X	X	X	X						X	30%	0.58
54								X	X	X					X	X	X	X			X	X		39%	0.64
55					X				X					X	X	X	X	X						26%	0.60
56							X	X	X	X			X		X		X			X	X		X	43%	0.63
57						X		X						X			X	X						22%	0.63
ILLEGAL								X	X				X	X	X	X	X	X	X	X	X	X	X	57%	1.30
BEFORE 51															X									4%	0.50
Time	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	Avg % Occupied	Avg time occupied
% Occupied	9%	19%	33%	34%	43%	34%	34%	37%	46%	43%	36%	40%	39%	37%	45%	44%	36%	31%	17%	22%	24%	12%	15%	32%	1.32



Google earth

feet 300

meters 90

Google earth

feet 500

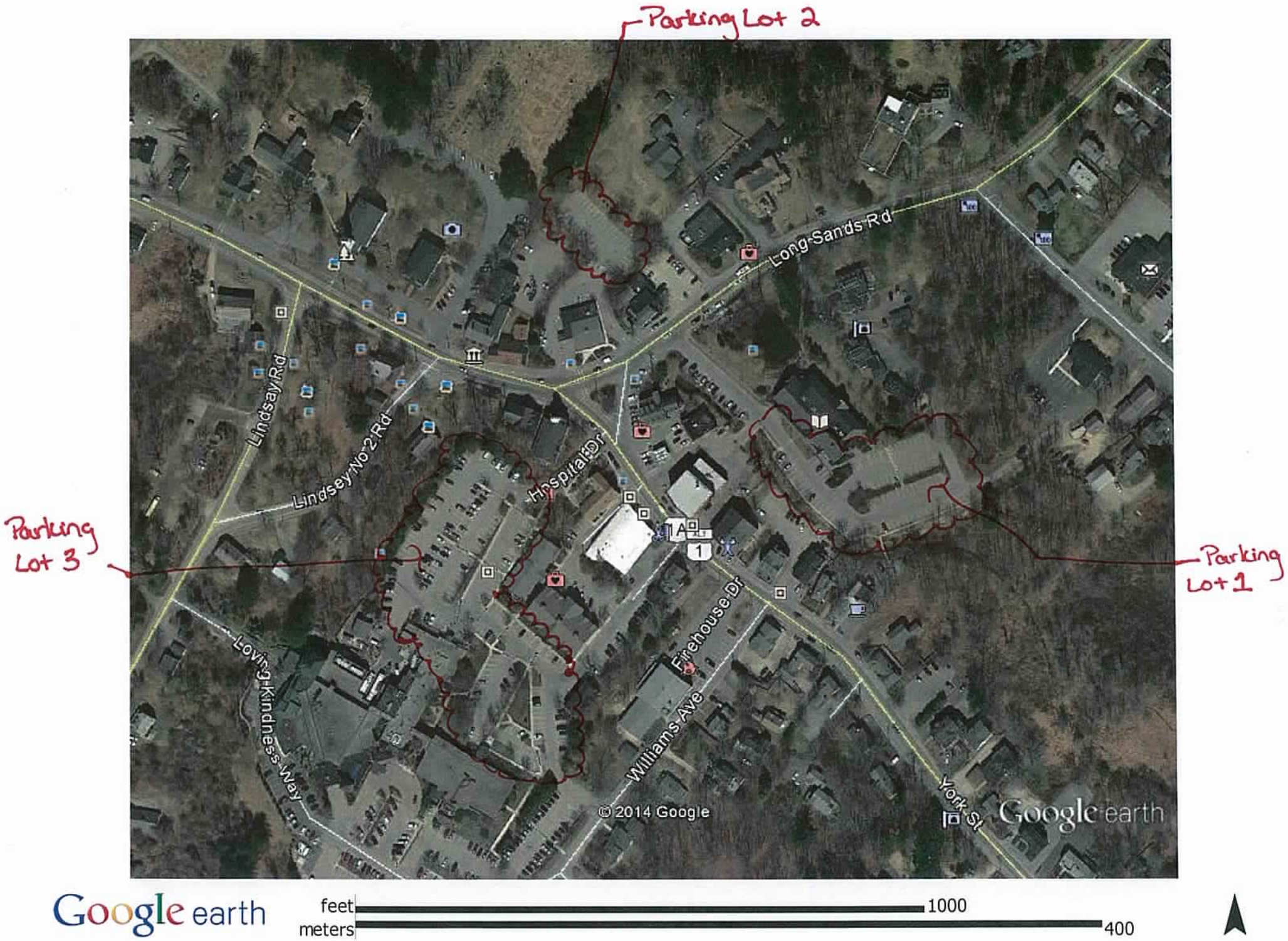
meters 100

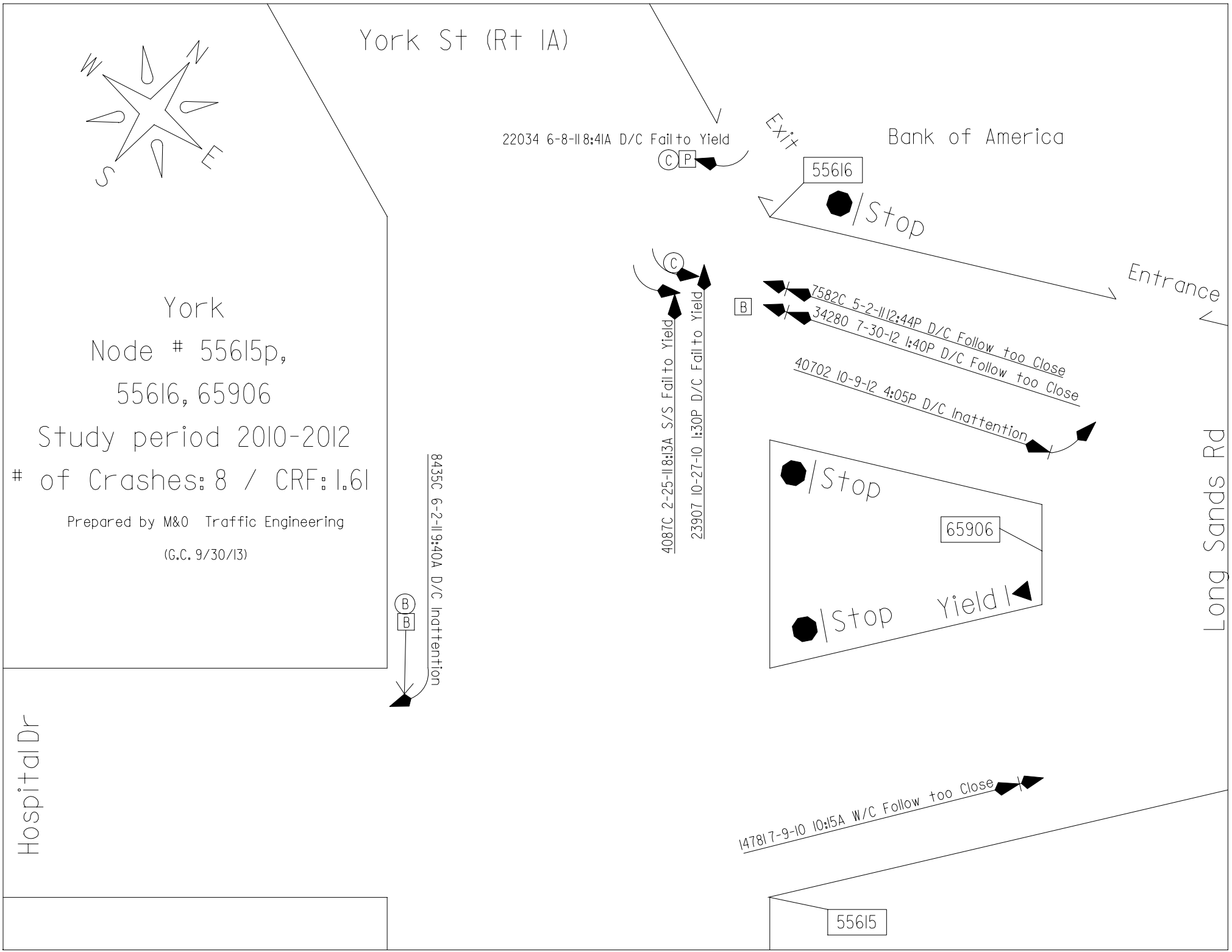
File Name: C:\Users\steve\Documents\2014\Petra\York, ME\M&M\4606.02\4606SAT8.ppd
Start Date: 8/27/2014
Start Time: 7:00:00 AM
Site Code: 46060008
Comment 1: N/S Street : Parking Lot Counts
Comment 2: E/W Street :
Comment 3: City/State : York, ME
Comment 4: Weather : Clear

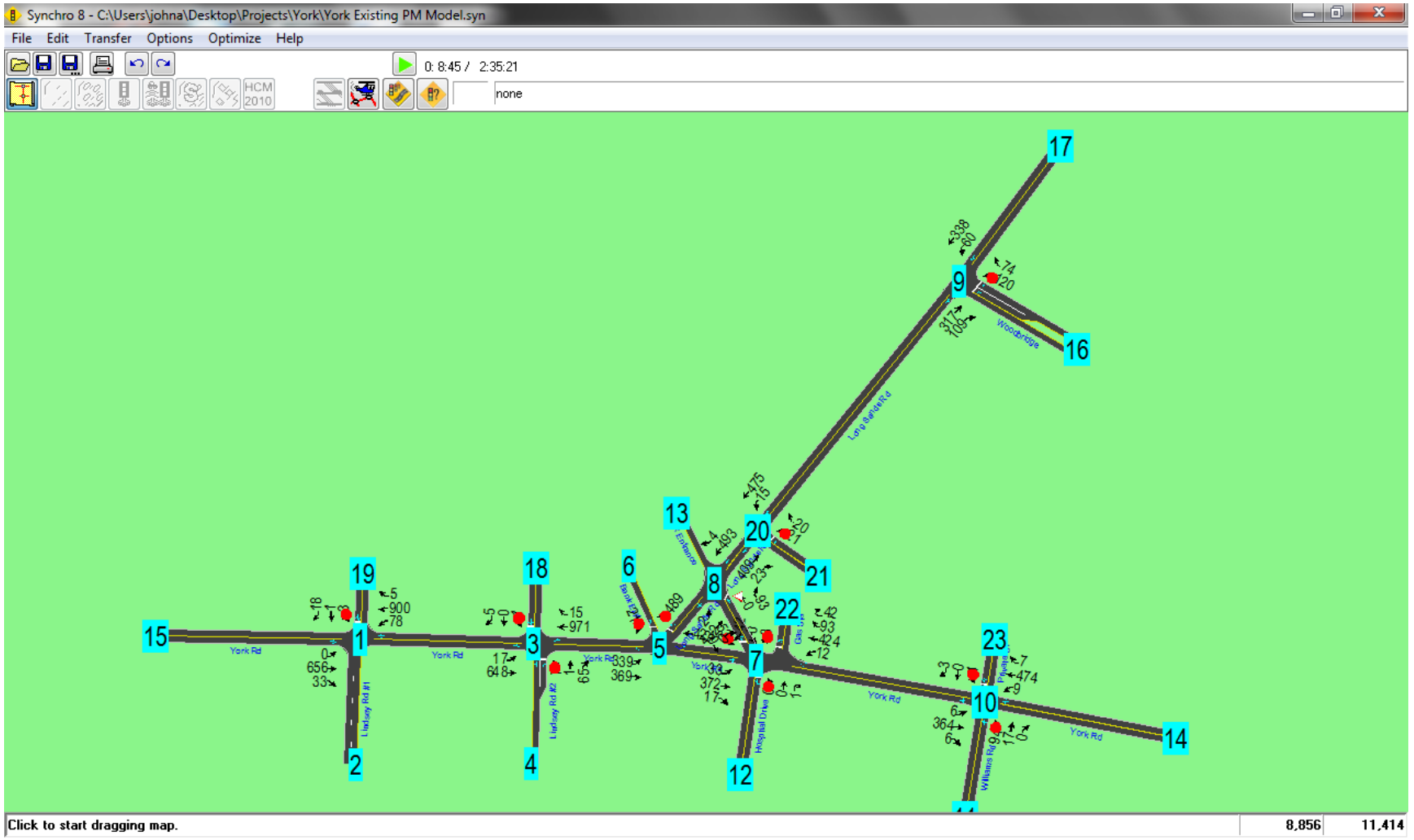
	York Parking Lot Counts					
Start Time	Lot 1 Library (89)	AVG. Per Hour	% Occupied	Lot 3 Hospital (184)	AVG. Per Hour	% Occupied
07:00 AM	10			35		
07:30 AM	12	11	12%	75	55	30%
08:00 AM	17			91		
08:30 AM	24	20.5	23%	92	91.5	50%
09:00 AM	21			107		
09:30 AM	29	25	28%	113	110	60%
10:00 AM	39			129		
10:30 AM	45	42	47%	131	130	71%
11:00 AM	49			137		
11:30 AM	49	49	55%	137	137	74%
12:00 PM	46			107		
12:30 PM	46	46	52%	107	107	58%
01:00 PM	40			105		
01:30 PM	40	40	45%	105	105	57%
02:00 PM	55			99		
02:30 PM	55	55	62%	99	99	54%
03:00 PM	48			97		
03:30 PM	48	48	54%	97	97	53%
04:00 PM	54			82		
04:30 PM	45	49.5	56%	82	82	45%
05:00 PM	40			71		
05:30 PM	25	32.5	37%	67	69	38%
06:00 PM	16	16	18%	68	68	37%
Overall Average	**37**	**36**	**41%**	**97**	**96**	**52%**

File Name: C:\Users\steve\Documents\2014\Petra\York, ME\M&M\4606.02\4606SAT8.ppd
Start Date: 8/30/2014
Start Time: 7:00:00 AM
Site Code: 46060008
Comment 1: N/S Street : Parking Lot Counts
Comment 2: E/W Street :
Comment 3: City/State : York, ME
Comment 4: Weather : Clear

	Parking Lot Counts					
Start Time	Lot 1 Library (89)	AVG. Per Hour	% Occupied	Lot 3 Hospital (184)	AVG. Per Hour	% Occupied
07:00 AM	11			27		
07:30 AM	11	11	12%	50	38.5	21%
08:00 AM	22			53		
08:30 AM	28	25	28%	55	54	29%
09:00 AM	38			57		
09:30 AM	48	43	48%	67	62	34%
10:00 AM	37			60		
10:30 AM	50	43.5	49%	54	57	31%
11:00 AM	47			53		
11:30 AM	39	43	48%	53	53	29%
12:00 PM	40			51		
12:30 PM	37	38.5	43%	46	48.5	26%
01:00 PM	38			43		
01:30 PM	36	37	42%	39	41	22%
02:00 PM	23			36		
02:30 PM	10	16.5	19%	37	36.5	20%
03:00 PM	10			38		
03:30 PM	11	10.5	12%	37	37.5	20%
04:00 PM	14			36		
04:30 PM	11	12.5	14%	33	34.5	19%
05:00 PM	10			34		
05:30 PM	9	9.5	11%	38	36	20%
06:00 PM	8	8	9%	37	37	20%
Overall Average	**26**	**25**	**28%**	**45**	**45**	**24%**


Parking Lot 2
Parking Lot 3
Parking Lot 1
Long Sands Rd
Lindsay Rd
Lindsey No 2 Rd
Hospital Dr
Firehouse Dr
Williams Ave
Loving Kindness Way
York St
© 2014 Google
Google earth
Google earth
feet
meters
1000
400


York St (Rt 1A)
N
W
E
S
22034 6-8-11 8:41A D/C Fail to Yield
C
P
Exit
Bank of America
55616
Stop
Entrance
C
4087C 2-25-11 8:13A S/S Fail to Yield
23907 10-27-10 1:30P D/C Fail to Yield
B
7582C 5-2-11 12:44P D/C Follow too Close
34280 7-30-12 1:40P D/C Follow too Close
40702 10-9-12 4:05P D/C Inattention
Stop
65906
Stop
Yield
Long Sands Rd
York
Node # 55615p,
55616, 65906
Study period 2010-2012
# of Crashes: 8 / CRF: 1.61
Prepared by M&O Traffic Engineering
(G.C. 9/30/13)
8435C 6-2-11 9:40A D/C Inattention
B
B
Hospital Dr
14781 7-9-10 10:15A W/C Follow too Close
55615


Synchro 8 - C:\Users\johna\Desktop\Projects\York\York Existing PM Model.syn
File Edit Transfer Options Optimize Help
0: 8:45 / 2:35:21
none
HCM 2010
York Rd
Lindsay Rd #1
Lindsay Rd #2
Hospital Drive
Long Borden Rd
Woodbridge
Williams Rd
Click to start dragging map.
8,856
11,414