

**APPENDIX E**  
**TRAFFIC AND PARKING**

# **World Trade Center Memorial and Redevelopment Plan EIS**

## **Appendix E.1 Traffic Volume Networks**

January 2004

**Eng-Wong, Taub & Associates**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
Current 2003 Conditions  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
Current 2003 Conditions  
MD Peak Hour**



# World Trade Center Memorial and Redevelopment Plan

**Traffic Volumes**  
**Current 2003 Conditions**  
**PM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-4



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-5



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-6





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-7



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-8



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-9



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-10



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-11



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-12



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-13



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-14





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-15



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
Pre September 11th Existing Conditions  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
Pre September 11th Existing Conditions  
MD Peak Hour**



# World Trade Center Memorial and Redevelopment Plan

Traffic Volumes  
Pre September 11th Existing Conditions  
PM Peak Hour



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Conditions Scenario  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-19



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-20



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-21



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes**  
**2015 No Action Condition**  
**Pre September 11th Conditions Scenario**  
**with Route 9A At-Grade**  
**AM Peak Hour**

Figure E.1-22





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Pre September 11th Conditions Scenario  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-23



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Pre September 11th Conditions Scenario  
with Route 9A At-Grade  
PM Peak Hour**



# World Trade Center Memorial and Redevelopment Plan

**Traffic Volumes**  
**2009 No Action Condition**  
**Current Conditions Scenario**  
**with Route 9A Short Bypass**  
**AM Peak Hour**

Figure E.1-25



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-26



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-27



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-28



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-29



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-30





# World Trade Center Memorial and Redevelopment Plan

Traffic Volumes  
 2015 No Action Condition  
 Current Conditions Scenario  
 with Route 9A Short Bypass  
 AM Peak Hour

Figure E.1-31



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-32



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-33



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-34



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-35



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Scenario  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-36



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
MD Peak Hour**





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
PM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
MD Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A At-Grade  
PM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-43



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-44



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-45



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-46





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-47



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions without Fulton and Greenwich  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-48



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-49



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-50



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-51



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-52



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-53



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-54





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-55



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-56



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-57



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**

Figure E.1-58



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-59



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**

Figure E.1-60



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**

Figure E.1-62





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
AM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
MD Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 No Action Condition  
Pre September 11th Alternative Trip Assumptions  
with Route 9A At-Grade  
PM Peak Hour**



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-67



# World Trade Center Memorial and Redevelopment Plan

Traffic Volumes  
 2009 Build Condition  
 Current Conditions Alternative Trip Assumptions  
 with Route 9A Short Bypass  
 MD Peak Hour

Figure E.1-68



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2009 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-69



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A Short Bypass  
AM Peak Hour**

Figure E.1-70





**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A Short Bypass  
MD Peak Hour**

Figure E.1-71



**World Trade Center Memorial  
and Redevelopment Plan**

**Traffic Volumes  
2015 Build Condition  
Current Conditions Alternative Trip Assumptions  
with Route 9A Short Bypass  
PM Peak Hour**

Figure E.1-72

**TABLE E.2-1  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
CURRENT 2003 CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	T	0.62	2.2	A	T	0.43	1.6	A	T	0.60	2.3	A
	SB	T	0.54	1.7	A	T	0.37	1.4	A	T	0.64	2.4	A
Canal Street	WB	L	0.18	42.9	D	L	0.32	43.9	D	L	0.18	39.5	D
	LR	0.43	49.4	D	LR	0.79	65.6	E	LR	0.35	42.9	D	
	R	0.50	52.1	D	R	0.59	54.2	D	R	0.39	44.8	D	
<b>Overall Intersection</b>	<b>-</b>	<b>0.60</b>	<b>4.1</b>	<b>A</b>	<b>-</b>	<b>0.50</b>	<b>7.8</b>	<b>A</b>	<b>-</b>	<b>0.58</b>	<b>4.2</b>	<b>A</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.85	17.2	B	TR	0.56	11.5	B	TR	0.77	14.7	B
	R	0.39	11.0	B	R	0.39	11.1	B	R	0.21	9.0	A	
	SB	L	0.97	77.3	E	L	0.96	55.3	E	L	0.96	56.5	E
	T	0.93	10.2	B	T	0.91	10.7	B	T	0.94	10.4	B	
<b>Overall Intersection</b>	<b>-</b>	<b>0.90</b>	<b>22.1</b>	<b>C</b>	<b>-</b>	<b>0.73</b>	<b>17.4</b>	<b>B</b>	<b>-</b>	<b>0.85</b>	<b>16.7</b>	<b>B</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.88	23.4	C	TR	0.62	16.3	B	TR	0.72	18.1	B
	SB	L	0.68	13.6	B	L	0.64	11.1	B	L	0.80	17.2	B
	TR	0.59	15.8	B	TR	0.51	14.7	B	TR	0.79	19.7	B	
Chambers Street	EB	LTR	0.60	46.1	D	LTR	0.32	38.4	D	LTR	0.27	37.3	D
	WB	LT	0.69	50.6	D	LT	0.46	41.1	D	LT	0.68	51.6	D
	R	0.41	25.4	C	R	0.45	26.6	C	R	0.64	31.7	C	
<b>Overall Intersection</b>	<b>-</b>	<b>0.85</b>	<b>22.5</b>	<b>C</b>	<b>-</b>	<b>0.63</b>	<b>17.4</b>	<b>B</b>	<b>-</b>	<b>0.79</b>	<b>21.1</b>	<b>C</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.95	118.6	F	TR	0.94	33.5	C	TR	0.99	45.2	D
	SB	L	0.07	7.8	A	L	0.08	6.0	A	L	0.02	6.6	A
	TR	1.01	40.7	D	TR	0.99	34.1	C	TR	0.99	47.5	D	
Vesey Street	EB	LR	1.00	104.0	F	LR	0.90	74.4	E	LR	0.89	69.1	E
	WB	TR	0.03	32.8	C	TR	0.03	32.8	C	TR	0.01	32.4	C
<b>Overall Intersection</b>	<b>-</b>	<b>1.04</b>	<b>83.0</b>	<b>F</b>	<b>-</b>	<b>0.99</b>	<b>36.2</b>	<b>D</b>	<b>-</b>	<b>0.99</b>	<b>47.8</b>	<b>D</b>	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.95	118.9	F	L	0.87	88.0	F	L	0.99	117.6	F
	TR	0.86	16.6	B	TR	0.63	11.3	B	TR	0.68	12.1	B	
	SB	TR	0.78	14.3	B	TR	0.68	12.1	B	TR	1.03	61.8	E
Liberty Street	EB	L	0.56	44.1	D	L	0.41	39.9	D	L	0.39	39.4	D
	R	0.13	35.1	D	R	0.09	34.4	C	R	0.22	36.9	D	
<b>Overall Intersection</b>	<b>-</b>	<b>0.79</b>	<b>21.7</b>	<b>C</b>	<b>-</b>	<b>0.63</b>	<b>16.9</b>	<b>B</b>	<b>-</b>	<b>0.85</b>	<b>43.7</b>	<b>D</b>	
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.92	54.3	D	TR	0.86	49.2	D	TR	0.89	52.2	D
	SB	LTR	0.88	32.5	C	LTR	0.85	30.1	C	LTR	0.95	51.1	D
Albany Street	EB	LTR	0.68	46.5	D	LTR	0.24	32.6	C	LTR	0.42	36.9	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.84</b>	<b>45.5</b>	<b>D</b>	<b>-</b>	<b>0.66</b>	<b>40.0</b>	<b>D</b>	<b>-</b>	<b>0.78</b>	<b>51.2</b>	<b>D</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.00	120.0+	F*	T	0.95	110.3	F	TR	1.01	95.1	F
	R	1.04	95.2	F	R	1.01	60.6	E	R	1.03	92.2	F	
	SB	TR	0.97	52.8	D	TR	0.87	46.0	D	TR	0.98	70.3	E
Brooklyn Battery Tunnel	EB	R	0.61	25.9	C	R	0.20	22.0	A	R	0.17	13.5	B
	WB	L	1.04	120.0+	F*	L	0.99	120.0+	F*	L	1.03	120.0+	F*
	R	1.02	120.0+	F*	R	0.95	120.0+	F*	R	0.87	120.0+	F*	
<b>Overall Intersection</b>	<b>-</b>	<b>1.04</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.01</b>	<b>105.6</b>	<b>F</b>	<b>-</b>	<b>1.03</b>	<b>110.7</b>	<b>F</b>	
<b>WASHINGTON STREET CORRIDOR</b>													
<b>8 Washington Street at Vesey Street</b>			CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION		
<b>9 Washington Street at Liberty Street</b>			CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION		

**TABLE E.2-1  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
CURRENT 2003 CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)			
	Mvt.	V/C	Control			Mvt.	V/C	Control		Mvt.	V/C	Control	
			Delay	LOS	Delay			LOS	Delay			LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.21	14.5	B	LTR	0.19	14.3	B	LTR	0.17	14.2	B
Chambers Street	EB	TR	0.40	16.7	B	TR	0.32	15.7	B	TR	0.38	16.4	B
	WB	LT	0.60	21.3	C	LT	0.56	20.5	C	LT	0.66	22.6	C
<b>Overall Intersection</b>	-		<b>0.40</b>	<b>17.9</b>	<b>B</b>	-	<b>0.37</b>	<b>17.2</b>	<b>B</b>	-	<b>0.41</b>	<b>18.5</b>	<b>B</b>
<b>14 Greenwich Street at Liberty Street</b>													
			CLOSED FOR CONSTRUCTION			CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION			
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.02	17.6	B	R	0.08	18.5	B	R	0.08	18.5	B
	SB	LT	0.02	17.7	B	LT	0.17	20.3	C	LT	0.04	17.9	B
Rector Street	EB	TR	0.30	11.9	B	TR	0.69	33.1	C	TR	0.19	10.6	B
<b>Overall Intersection</b>	-		<b>0.19</b>	<b>12.3</b>	<b>B</b>	-	<b>0.48</b>	<b>28.9</b>	<b>C</b>	-	<b>0.15</b>	<b>12.5</b>	<b>B</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.83	40.9	D	LTR	0.63	33.6	C	LTR	0.87	43.5	D
	R		0.53	35.3	D	R	0.52	34.9	C	R	0.70	41.1	D
Canal Street	EB	L	1.03	63.0	E	L	1.02	59.7	E	L	0.63	32.2	C
	LT		0.99	47.6	D	LT	0.87	31.2	C	T	0.81	25.7	C
	WB	T	0.95	60.1	E	T	0.97	62.6	E	T	0.46	27.3	C
	R		0.85	33.2	C	R	0.89	37.1	D	R	1.00	52.0	D
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>48.6</b>	<b>D</b>	-	<b>0.92</b>	<b>45.4</b>	<b>D</b>	-	<b>0.97</b>	<b>40.0</b>	<b>D</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.20	23.1	C	L	0.32	25.1	C	L	0.71	42.6	D
	T		0.64	29.0	C	T	0.54	27.2	C	T	0.46	25.9	C
	R		0.11	22.0	C	R	0.36	26.0	C	R	0.11	22.0	C
Canal Street	EB	TR	0.42	10.1	B	TR	0.29	8.7	A	TR	0.28	8.7	A
	WB	LT	0.88	43.1	D	LT	0.98	43.9	D	LT	1.00	103.7	F
<b>Overall Intersection</b>	-		<b>0.50</b>	<b>27.4</b>	<b>C</b>	-	<b>0.83</b>	<b>28.9</b>	<b>C</b>	-	<b>0.43</b>	<b>58.2</b>	<b>E</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.90	25.5	C	LTR	0.56	13.8	B	LTR	0.62	15.0	B
Worth Street	EB	TR	0.21	20.9	C	TR	0.15	19.9	B	TR	0.27	23.0	C
	WB	LT	0.85	46.8	D	LT	0.48	25.9	C	LT	0.76	35.9	D
<b>Overall Intersection</b>	-		<b>0.88</b>	<b>28.9</b>	<b>C</b>	-	<b>0.53</b>	<b>16.3</b>	<b>B</b>	-	<b>0.68</b>	<b>21.1</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.37	17.3	B	L	0.31	16.4	B	L	0.26	15.6	B
	TR		0.49	18.1	B	TR	0.38	16.5	B	TR	0.40	16.7	B
Chambers Street	EB	L	0.34	19.3	B	LTR	0.92	49.3	D	L	0.32	19.0	B
	TR		0.72	27.4	C	-	-	-	-	TR	0.72	28.9	C
	WB	LTR	0.60	21.5	C	LTR	0.64	23.0	C	LTR	0.66	22.9	C
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>21.1</b>	<b>C</b>	-	<b>0.65</b>	<b>27.5</b>	<b>C</b>	-	<b>0.56</b>	<b>21.6</b>	<b>C</b>
<b>20 West Broadway at Barclay Street</b>													
			CLOSED FOR CONSTRUCTION			CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION			
<b>13 West Broadway at Vesey Street</b>													
			CLOSED FOR CONSTRUCTION			CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION			

**TABLE E.2-1  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
CURRENT 2003 CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street</b>													
Church Street	NB	LTR	1.05	57.7	E	LTR	0.98	54.3	E	LTR	0.98	54.8	D
Worth Street	EB	LT	0.93	55.4	E	LT	0.79	40.0	E	LT	0.58	30.3	C
	WB	TR	0.84	39.9	D	TR	0.73	37.0	D	TR	0.77	35.9	D
<b>Overall Intersection</b>	<b>-</b>		<b>1.00</b>	<b>53.7</b>	<b>D</b>	<b>-</b>	<b>0.91</b>	<b>49.4</b>	<b>D</b>	<b>-</b>	<b>0.90</b>	<b>48.1</b>	<b>D</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	0.83	25.8	C	LTR	0.73	22.2	C	LTR	0.82	25.4	C
Chambers Street	EB	LT	0.97	77.2	E	LT	0.95	55.3	E	LT	0.94	49.8	D
	WB	TR	0.73	25.9	C	TR	0.66	23.0	C	TR	0.60	21.2	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.90</b>	<b>36.7</b>	<b>D</b>	<b>-</b>	<b>0.84</b>	<b>29.2</b>	<b>C</b>	<b>-</b>	<b>0.88</b>	<b>29.8</b>	<b>C</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	T	0.63	14.7	B	T	0.53	13.1	B	T	0.46	12.2	B
Barclay Street	EB	L	0.48	26.7	C	L	0.44	25.8	C	L	0.45	25.6	C
	WB	R	0.85	41.0	D	R	0.59	27.8	C	R	0.66	29.8	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.71</b>	<b>22.6</b>	<b>C</b>	<b>-</b>	<b>0.55</b>	<b>17.8</b>	<b>B</b>	<b>-</b>	<b>0.54</b>	<b>18.5</b>	<b>B</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LT	0.84	16.6	B	LT	0.63	10.1	B	LT	0.60	9.6	A
	R		0.34	8.9	A	R	0.65	16.4	B	R	0.23	6.8	A
Vesey Street	EB	LT	0.03	19.0	B	LT	0.00	18.7	B	LT	0.02	18.9	B
<b>Overall Intersection</b>	<b>-</b>		<b>0.53</b>	<b>15.9</b>	<b>B</b>	<b>-</b>	<b>0.40</b>	<b>11.5</b>	<b>B</b>	<b>-</b>	<b>0.38</b>	<b>9.4</b>	<b>A</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	T	0.48	12.4	B	T	0.50	12.7	B	T	0.34	10.9	B
Fulton Street	WB	R	0.42	23.6	C	R	0.60	32.0	C	R	0.45	24.1	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.46</b>	<b>14.7</b>	<b>B</b>	<b>-</b>	<b>0.54</b>	<b>15.7</b>	<b>B</b>	<b>-</b>	<b>0.38</b>	<b>14.5</b>	<b>B</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.40	7.3	A	T	0.40	7.4	A	T	0.28	6.4	A
Dey Street	WB	R	0.23	28.2	C	R	0.40	32.6	C	R	0.23	28.2	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.35</b>	<b>8.4</b>	<b>A</b>	<b>-</b>	<b>0.40</b>	<b>9.6</b>	<b>A</b>	<b>-</b>	<b>0.26</b>	<b>7.8</b>	<b>A</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.40	7.7	A	T	0.30	7.0	A	T	0.22	6.5	A
Cortlandt Street	WB	R	0.29	21.9	C	R	0.74	35.9	D	R	0.40	24.1	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.35</b>	<b>9.5</b>	<b>A</b>	<b>-</b>	<b>0.47</b>	<b>16.6</b>	<b>B</b>	<b>-</b>	<b>0.30</b>	<b>11.0</b>	<b>B</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.55	9.5	A	T	0.46	8.5	A	T	0.32	7.2	A
	R		0.14	6.5	A	R	0.20	7.1	A	R	0.10	6.2	A
Liberty Street	EB	LT	0.06	18.6	B	LT	0.02	18.2	B	LT	0.00	18.1	B
<b>Overall Intersection</b>	<b>-</b>		<b>0.36</b>	<b>9.8</b>	<b>A</b>	<b>-</b>	<b>0.29</b>	<b>8.6</b>	<b>A</b>	<b>-</b>	<b>0.19</b>	<b>7.2</b>	<b>A</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.33	11.1	B	TR	0.51	13.4	B	TR	0.29	10.6	B
Rector Street	EB	LT	0.28	21.4	C	LT	0.24	20.8	C	LT	0.26	21.1	C
<b>Overall Intersection</b>	<b>-</b>		<b>0.31</b>	<b>13.9</b>	<b>B</b>	<b>-</b>	<b>0.40</b>	<b>14.8</b>	<b>B</b>	<b>-</b>	<b>0.28</b>	<b>13.4</b>	<b>B</b>

**TABLE E.2-1  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
CURRENT 2003 CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.36	19.1	B	LTR	0.47	20.7	C	LTR	0.58	22.2	C
Canal Street	EB	TR	0.43	18.8	B	TR	0.38	18.1	B	TR	0.88	34.2	C
	WB	DefL	0.62	24.8	C	LT	0.59	11.2	B	DefL	0.95	66.5	E
	T		0.30	8.4	A	-	-	-	-	T	0.63	14.5	B
<b>Overall Intersection</b>	-		<b>0.60</b>	<b>18.5</b>	<b>B</b>	-	<b>0.58</b>	<b>16.3</b>	<b>B</b>	-	<b>0.82</b>	<b>31.3</b>	<b>C</b>
<b>31 Broadway at Worth Street</b>													
Broadway	SB	LTR	0.78	45.3	D	LTR	0.62	46.6	D	LTR	0.80	50.5	D
Worth Street	EB	TR	0.91	69.9	E	TR	0.80	59.9	E	TR	0.62	24.5	C
	WB	LT	0.69	32.8	C	LT	0.67	43.7	D	LT	0.68	25.4	C
<b>Overall Intersection</b>	-		<b>0.83</b>	<b>48.8</b>	<b>D</b>	-	<b>0.70</b>	<b>50.1</b>	<b>D</b>	-	<b>0.75</b>	<b>41.0</b>	<b>D</b>
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.57	12.6	B	LTR	0.44	11.2	B	LTR	0.57	12.7	B
Chambers Street	EB	TR	0.87	36.8	D	TR	0.65	23.6	C	TR	0.79	29.7	C
	WB	L	0.47	23.5	C	L	0.33	18.5	B	L	0.34	19.4	B
	LT		0.64	22.7	C	LT	0.56	20.5	C	LT	0.58	20.7	C
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>21.1</b>	<b>C</b>	-	<b>0.54</b>	<b>16.6</b>	<b>B</b>	-	<b>0.67</b>	<b>18.7</b>	<b>B</b>
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.89	33.8	C	L	0.63	19.3	B	L	0.99	50.7	D
	LT		0.64	16.6	B	LT	0.50	14.6	B	LT	0.41	13.5	B
Vesey Street	EB	L	0.22	37.8	D	L	0.26	38.7	D	L	0.16	36.4	D
	LTR		0.25	36.7	D	LTR	0.56	42.8	D	LTR	0.25	36.5	D
<b>Overall Intersection</b>	-		<b>0.47</b>	<b>23.2</b>	<b>C</b>	-	<b>0.40</b>	<b>19.8</b>	<b>B</b>	-	<b>0.53</b>	<b>31.2</b>	<b>C</b>
<b>34 Broadway at Fulton Street<sup>(1)</sup></b>													
Broadway	SB	TR	0.58	10.7	B	TR	0.50	9.7	A	TR	0.33	8.0	A
Fulton Street	WB	LT	0.39	26.7	C	LT	CLOSED			LT	0.31	25.4	C
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>13.4</b>	<b>B</b>	-	<b>0.34</b>	<b>9.7</b>	<b>A</b>	-	<b>0.33</b>	<b>11.9</b>	<b>B</b>
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	0.94	29.7	C	LTR	0.72	14.4	B	LTR	0.66	13.0	B
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>29.7</b>	<b>C</b>	-	<b>0.48</b>	<b>14.4</b>	<b>B</b>	-	<b>0.43</b>	<b>13.0</b>	<b>B</b>
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.82	17.9	B	TR	0.67	13.1	B	TR	0.49	10.0	B
Maiden Lane	WB	LT	0.36	27.1	C	LT	0.41	27.8	C	LT	0.47	29.2	C
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>18.9</b>	<b>B</b>	-	<b>0.59</b>	<b>15.5</b>	<b>B</b>	-	<b>0.48</b>	<b>14.5</b>	<b>B</b>
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.83	18.6	B	LT	0.54	10.7	B	LT	0.47	9.7	A
Liberty Street	EB	TR	0.08	22.8	C	TR	0.14	23.4	C	TR	0.07	22.7	C
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>18.8</b>	<b>B</b>	-	<b>0.41</b>	<b>12.2</b>	<b>B</b>	-	<b>0.34</b>	<b>10.7</b>	<b>B</b>
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.74	14.2	B	T	0.65	11.9	B	T	0.62	11.3	B
Rector Street	EB	R	0.29	29.8	C	R	0.44	33.3	C	R	0.27	28.7	C
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>15.3</b>	<b>B</b>	-	<b>0.59</b>	<b>14.6</b>	<b>B</b>	-	<b>0.52</b>	<b>13.0</b>	<b>B</b>
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	T	0.58	9.8	A	T	0.45	8.0	A	T	0.47	8.4	A
<b>Overall Intersection</b>	-		<b>0.39</b>	<b>9.8</b>	<b>A</b>	-	<b>0.31</b>	<b>8.0</b>	<b>A</b>	-	<b>0.32</b>	<b>8.4</b>	<b>A</b>
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street</b>													
Water Street	NB	L	0.60	24.1	C	L	0.39	16.8	B	L	0.35	15.5	B
	T		0.93	37.4	D	T	0.75	23.0	C	T	0.88	31.0	C
	SB	TR	0.42	14.0	B	TR	0.31	12.8	B	TR	0.21	11.9	B
Fulton Street	EB	LR	0.44	28.9	C	LR	0.47	29.7	C	LR	0.33	26.5	C
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>26.8</b>	<b>C</b>	-	<b>0.57</b>	<b>19.9</b>	<b>B</b>	-	<b>0.60</b>	<b>24.8</b>	<b>C</b>

TABLE E.2-1  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 CURRENT 2003 CONDITIONS

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>UNIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt. 9A) at Barclay	CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street	SB	LT	0.21	15.6	C	LT	0.12	12.5	B	LT	0.18	12.8	B
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street	CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				CLOSED FOR CONSTRUCTION				

**Eng-Wong, Taub & Associates Notes:**

(1): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).





**TABLE E.2-2  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.25	15.0	B	LTR	0.22	14.7	B	LTR	0.20	14.5	B
Chambers Street	EB	TR	0.51	18.3	B	TR	0.37	16.3	B	TR	0.38	16.3	B
	WB	LT	0.71	24.8	C	LT	0.68	24.1	C	LT	0.82	30.0	C
<b>Overall Intersection</b>	-		<b>0.48</b>	<b>19.8</b>	<b>B</b>	-	<b>0.45</b>	<b>18.9</b>	<b>B</b>	-	<b>0.51</b>	<b>22.1</b>	<b>C</b>
<b>14 Greenwich Street at Liberty Street</b>													
Liberty Street	EB	TR	0.30	8.9	A	TR	0.28	8.7	A	TR	0.31	8.9	A
<b>Overall Intersection</b>	-		<b>0.19</b>	<b>8.9</b>	<b>A</b>	-	<b>0.18</b>	<b>8.7</b>	<b>A</b>	-	<b>0.20</b>	<b>8.9</b>	<b>A</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.02	17.6	B	R	0.08	18.5	B	R	0.08	18.5	B
	SB	LT	0.45	24.2	C	LT	0.92	69.9	E	LT	0.44	24.2	C
Rector Street	EB	TR	0.38	13.0	B	TR	0.80	44.1	D	TR	0.32	12.1	B
<b>Overall Intersection</b>	-		<b>0.41</b>	<b>18.1</b>	<b>B</b>	-	<b>0.85</b>	<b>56.7</b>	<b>E</b>	-	<b>0.37</b>	<b>17.8</b>	<b>B</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.84	41.7	D	LTR	0.64	33.9	C	LTR	0.88	44.7	D
	R		0.55	35.7	D	R	0.53	35.2	D	R	0.71	41.8	D
Canal Street	EB	L	1.08	80.2	F	L	1.05	68.1	E	L	0.66	33.4	C
	LT		1.02	55.9	E	LT	0.90	34.9	C	T	0.86	30.6	C
	WB	T	0.98	66.6	E	T	0.99	67.5	E	T	0.48	27.7	C
	R		1.07	84.7	F	R	1.07	80.5	F	R	1.14	95.9	F
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>61.0</b>	<b>E</b>	-	<b>0.95</b>	<b>55.1</b>	<b>E</b>	-	<b>1.07</b>	<b>52.7</b>	<b>D</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.20	23.1	C	L	0.33	25.2	C	L	0.72	43.6	D
	T		0.65	29.2	C	T	0.55	27.3	C	T	0.47	26.0	C
	R		0.11	22.0	C	R	0.37	26.1	C	R	0.11	22.0	C
Canal Street	EB	TR	0.44	10.3	B	TR	0.30	8.8	A	TR	0.30	8.9	A
	WB	LT	0.99	61.0	E	LT	1.07	70.5	E	LT	1.11	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>33.9</b>	<b>C</b>	-	<b>0.89</b>	<b>39.8</b>	<b>D</b>	-	<b>0.44</b>	<b>78.9</b>	<b>E</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.97	34.4	C	LTR	0.58	14.2	B	LTR	0.64	15.4	B
Worth Street	EB	TR	0.22	21.0	C	TR	0.15	19.9	B	TR	0.28	23.1	C
	WB	LT	0.92	57.5	E	LT	0.53	27.1	C	LT	0.80	38.5	D
<b>Overall Intersection</b>	-		<b>0.95</b>	<b>37.7</b>	<b>D</b>	-	<b>0.56</b>	<b>16.9</b>	<b>B</b>	-	<b>0.70</b>	<b>22.1</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.38	17.4	B	L	0.31	16.5	B	L	0.26	15.6	B
	TR		0.59	19.7	B	TR	0.42	16.9	B	TR	0.43	17.0	B
Chambers Street	EB	L	0.38	21.1	C	LTR	1.20+	120.0+	F*	L	0.40	22.0	C
	TR		1.08	87.3	F	-	-	-	-	TR	0.74	30.5	C
	WB	LTR	0.91	42.3	D	LTR	0.85	34.0	C	LTR	1.15	110.2	F
<b>Overall Intersection</b>	-		<b>0.83</b>	<b>43.2</b>	<b>D</b>	-	<b>0.81</b>	<b>58.3</b>	<b>E</b>	-	<b>0.79</b>	<b>52.2</b>	<b>D</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.45	10.6	B	TR	0.45	10.7	B	TR	0.54	11.6	B
Barclay Street	WB	LT	0.83	33.7	C	LT	0.48	21.7	C	LT	0.93	43.5	D
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>20.4</b>	<b>C</b>	-	<b>0.47</b>	<b>14.1</b>	<b>B</b>	-	<b>0.71</b>	<b>25.1</b>	<b>C</b>
<b>13 West Broadway/Greenwich Street at Vesey Street</b>													
Greenwich Street	SB	L	0.61	44.9	D	L	0.45	36.3	D	L	0.56	41.4	D
	R		0.40	38.8	D	R	0.13	31.2	C	R	0.29	35.4	D
West Broadway	SB	L	0.84	26.0	C	L	0.88	40.9	D	L	1.14	102.6	F
	R		0.50	15.3	B	R	0.73	30.8	C	R	0.60	19.5	B
Vesey Street	EB	T	0.61	35.9	D	T	0.41	26.8	C	T	0.61	34.2	C
	WB	T	0.29	31.4	C	T	0.16	24.1	C	T	0.26	29.5	C
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>29.0</b>	<b>C</b>	-	<b>0.64</b>	<b>32.2</b>	<b>C</b>	-	<b>0.90</b>	<b>56.5</b>	<b>E</b>

**TABLE E.2-2  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street</b>													
Church Street	NB	LTR	1.19	110.3	F	LTR	1.12	114.8	F	LTR	1.10	108.2	F
Worth Street	EB	LT	0.94	57.8	E	LT	0.80	41.0	D	LT	0.59	30.6	C
	WB	TR	0.87	43.6	D	TR	0.77	39.8	D	TR	0.80	37.8	D
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>88.9</b>	<b>F</b>	-	<b>1.00</b>	<b>93.2</b>	<b>F</b>	-	<b>0.99</b>	<b>86.2</b>	<b>F</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	0.98	42.5	D	LTR	0.92	32.7	C	LTR	1.03	55.0	D
Chambers Street	EB	LT	1.00	100.3	F	LT	0.98	63.1	E	LT	1.07	85.2	F
	WB	TR	0.80	29.6	C	TR	0.71	24.9	C	TR	0.66	22.8	C
<b>Overall Intersection</b>	-		<b>0.99</b>	<b>51.0</b>	<b>D</b>	-	<b>0.95</b>	<b>36.1</b>	<b>D</b>	-	<b>1.05</b>	<b>62.7</b>	<b>E</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	LT	0.99	38.2	D	LT	0.73	17.0	B	LT	0.84	21.1	C
Barclay Street	WB	T	0.41	23.5	C	T	0.27	21.3	C	T	0.50	25.3	C
		R	0.82	45.3	D	R	0.89	54.6	D	R	0.79	42.5	D
<b>Overall Intersection</b>	-		<b>0.92</b>	<b>37.6</b>	<b>D</b>	-	<b>0.79</b>	<b>23.8</b>	<b>C</b>	-	<b>0.82</b>	<b>24.5</b>	<b>C</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LT	1.20+	120.0+	F*	LT	0.79	14.2	B	LT	0.91	21.5	C
		R	0.38	9.6	A	R	0.67	17.3	B	R	0.25	7.0	A
Vesey Street	EB	LT	1.20+	120.0+	F*	LT	1.15	113.2	F	LT	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.93</b>	<b>50.6</b>	<b>D</b>	-	<b>1.16</b>	<b>120.0+</b>	<b>F*</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	T	0.67	15.4	B	T	0.61	14.3	B	T	0.50	12.7	B
Fulton Street	WB	R	0.56	26.6	C	R	0.59	31.4	C	R	0.54	26.0	C
<b>Overall Intersection</b>	-		<b>0.63</b>	<b>17.6</b>	<b>B</b>	-	<b>0.60</b>	<b>16.5</b>	<b>B</b>	-	<b>0.52</b>	<b>15.8</b>	<b>B</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.56	9.0	A	T	0.49	8.2	A	T	0.43	7.5	A
Dey Street	WB	R	0.24	28.4	C	R	0.41	32.8	C	R	0.24	28.4	C
<b>Overall Intersection</b>	-		<b>0.47</b>	<b>9.7</b>	<b>A</b>	-	<b>0.47</b>	<b>10.0</b>	<b>B</b>	-	<b>0.37</b>	<b>8.5</b>	<b>A</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.53	8.9	A	T	0.34	7.3	A	T	0.35	7.3	A
Cortlandt Street	WB	R	0.56	28.1	C	R	1.01	76.7	E	R	0.58	28.8	C
<b>Overall Intersection</b>	-		<b>0.54</b>	<b>12.2</b>	<b>B</b>	-	<b>0.61</b>	<b>33.3</b>	<b>C</b>	-	<b>0.44</b>	<b>12.4</b>	<b>B</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.69	11.9	B	T	0.48	8.7	A	T	0.43	8.1	A
		R	0.15	6.6	A	R	0.21	7.2	A	R	0.12	6.3	A
Liberty Street	EB	LT	0.26	20.5	C	LT	0.24	20.3	C	LT	0.25	20.4	C
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>13.4</b>	<b>B</b>	-	<b>0.38</b>	<b>11.6</b>	<b>B</b>	-	<b>0.36</b>	<b>11.4</b>	<b>B</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.47	12.8	B	TR	0.52	13.6	B	TR	0.36	11.4	B
Rector Street	EB	LT	0.49	25.0	C	LT	0.32	22.0	C	LT	0.44	23.8	C
<b>Overall Intersection</b>	-		<b>0.48</b>	<b>16.8</b>	<b>B</b>	-	<b>0.44</b>	<b>15.5</b>	<b>B</b>	-	<b>0.39</b>	<b>15.6</b>	<b>B</b>

**TABLE E.2-2  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.40	19.5	B	LTR	0.51	21.4	C	LTR	0.63	23.1	C
Canal Street	EB	TR	0.46	19.2	B	TR	0.40	18.4	B	TR	0.91	37.9	D
	WB	Defl.	0.70	30.0	C	LT	0.64	12.2	B	Defl.	1.03	76.1	E
		T	0.33	8.7	A	-	-	-	-	T	0.67	15.9	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.65</b>	<b>19.8</b>	<b>B</b>	<b>-</b>	<b>0.63</b>	<b>17.1</b>	<b>B</b>	<b>-</b>	<b>0.86</b>	<b>34.3</b>	<b>C</b>	
<b>31 Broadway at Worth Street</b>													
Broadway	SB	LTR	0.69	42.1	D	LTR	0.47	43.5	D	LTR	0.72	46.3	D
Worth Street	EB	TR	0.96	108.5	F	TR	0.86	85.1	F	TR	0.69	27.0	C
	WB	LT	0.72	37.4	D	LT	0.74	57.8	E	LT	0.71	26.8	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.81</b>	<b>59.1</b>	<b>E</b>	<b>-</b>	<b>0.64</b>	<b>61.8</b>	<b>E</b>	<b>-</b>	<b>0.72</b>	<b>38.3</b>	<b>D</b>	
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.51	12.0	B	LTR	0.37	10.5	B	LTR	0.51	12.0	B
Chambers Street	EB	TR	0.93	45.6	D	TR	0.63	22.8	C	TR	0.86	35.2	D
	WB	L	0.50	25.4	C	L	0.33	18.5	B	L	0.37	20.5	C
		LT	0.70	24.7	C	LT	0.61	21.6	C	LT	0.62	21.8	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.70</b>	<b>24.5</b>	<b>C</b>	<b>-</b>	<b>0.49</b>	<b>17.0</b>	<b>B</b>	<b>-</b>	<b>0.67</b>	<b>20.8</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.84	28.8	C	L	0.59	18.1	B	L	0.93	40.4	D
		LT	0.41	13.5	B	LT	0.40	13.4	B	LT	0.36	13.1	B
Vesey Street	EB	L	1.10	120.0+	F*	L	0.90	86.5	F	L	1.08	120.0+	F*
		LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.15	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>0.60</b>	<b>66.1</b>	<b>E</b>	<b>-</b>	<b>0.48</b>	<b>79.2</b>	<b>E</b>	<b>-</b>	<b>0.63</b>	<b>60.8</b>	<b>E</b>	
<b>34 Broadway at Fulton Street<sup>(D)</sup></b>													
Broadway	SB	TR	0.43	8.9	A	TR	0.47	9.3	A	TR	0.34	8.1	A
Fulton Street	WB	LT	0.50	28.6	C	LT	CLOSED			LT	0.39	26.5	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.45</b>	<b>14.2</b>	<b>B</b>	<b>-</b>	<b>0.32</b>	<b>9.3</b>	<b>A</b>	<b>-</b>	<b>0.35</b>	<b>12.9</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	0.71	14.5	B	LTR	0.65	12.8	B	LTR	0.68	13.4	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.47</b>	<b>14.5</b>	<b>B</b>	<b>-</b>	<b>0.42</b>	<b>12.8</b>	<b>B</b>	<b>-</b>	<b>0.44</b>	<b>13.4</b>	<b>B</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.58	11.2	B	TR	0.60	11.7	B	TR	0.50	10.1	B
Maiden Lane	WB	LT	0.55	31.3	C	LT	0.66	34.6	C	LT	0.61	32.9	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.57</b>	<b>15.9</b>	<b>B</b>	<b>-</b>	<b>0.62</b>	<b>17.8</b>	<b>B</b>	<b>-</b>	<b>0.54</b>	<b>16.6</b>	<b>B</b>	
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.57	11.2	B	LT	0.48	9.8	A	LT	0.47	9.7	A
Liberty Street	EB	TR	0.26	24.6	C	TR	0.34	25.7	C	TR	0.27	24.9	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.47</b>	<b>14.4</b>	<b>B</b>	<b>-</b>	<b>0.43</b>	<b>14.3</b>	<b>B</b>	<b>-</b>	<b>0.41</b>	<b>13.5</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.39	7.8	A	T	0.59	10.6	B	T	0.64	11.7	B
Rector Street	EB	R	0.72	50.1	D	R	0.59	39.2	D	R	0.55	36.9	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.48</b>	<b>18.6</b>	<b>B</b>	<b>-</b>	<b>0.59</b>	<b>15.7</b>	<b>B</b>	<b>-</b>	<b>0.61</b>	<b>16.1</b>	<b>B</b>	
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	T	0.38	7.5	A	T	0.43	7.8	A	T	0.53	9.1	A
<b>Overall Intersection</b>	<b>-</b>	<b>0.11</b>	<b>7.5</b>	<b>A</b>	<b>-</b>	<b>0.29</b>	<b>7.8</b>	<b>A</b>	<b>-</b>	<b>0.32</b>	<b>9.1</b>	<b>A</b>	
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street</b>													
Water Street	NB	L	0.73	35.7	D	L	0.44	18.5	B	L	0.40	16.8	B
		T	1.03	60.5	E	T	0.80	25.1	C	T	0.95	40.0	D
	SB	TR	0.52	15.4	B	TR	0.40	13.9	B	TR	0.32	12.9	B
Fulton Street	EB	LR	0.44	29.1	C	LR	0.47	29.8	C	LR	0.34	26.6	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.72</b>	<b>38.2</b>	<b>D</b>	<b>-</b>	<b>0.60</b>	<b>21.0</b>	<b>C</b>	<b>-</b>	<b>0.64</b>	<b>29.2</b>	<b>C</b>	

**TABLE E.2-2**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2009 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt. 9A) at Barclay Barclay Street	WB	R	0.51	31.5	D	R	0.44	21.6	C	R	0.45	22.7	C
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street Washington Street	SB	LT	0.22	15.9	C	LT	0.12	12.6	B	LT	0.20	13.8	B
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street Greenwich Street	SB	T	0.23	13.5	B	T	0.16	12.8	B	T	0.25	15.5	C
		R	0.06	11.5	B	R	0.25	13.2	B	R	0.00	11.6	B
Barclay Street	WB	LT	0.00	7.2	A	LT	0.00	7.2	A	LT	0.00	7.2	A

**Eng-Wong, Taub & Associates Notes:**

(1): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-3  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	Mvt.	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
		V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control		LOS
			Delay	LOS				Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.74	3.0	A	T	0.57	2.1	A	T	0.75	3.4	A	
	SB	T	0.65	2.2	A	T	0.48	1.7	A	T	0.74	3.1	A	
Canal Street	WB	L	0.28	45.1	D	L	0.44	47.2	D	L	0.23	40.5	D	
	LR	0.45	50.0	D	LR	0.81	67.0	E	LR	0.36	43.2	D		
	R	0.52	53.1	D	R	0.61	54.9	D	R	0.41	45.3	D		
<b>Overall Intersection</b>	-	-	<b>0.70</b>	<b>4.6</b>	<b>A</b>	-	<b>0.62</b>	<b>7.2</b>	<b>A</b>	-	<b>0.67</b>	<b>4.8</b>	<b>A</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.02	46.7	D	TR	0.74	14.3	B	TR	0.96	25.5	C	
	R	0.44	11.8	B	R	0.44	11.8	B	R	0.26	9.5	A		
	SB	L	0.99	100.1	F	L	0.98	60.9	E	L	1.00	70.3	E	
	T	1.17	96.0	F	T	1.20+	120.0+	F*	T	1.12	75.7	E		
<b>Overall Intersection</b>	-	-	<b>1.01</b>	<b>72.2</b>	<b>E</b>	-	<b>0.84</b>	<b>73.9</b>	<b>E</b>	-	<b>0.98</b>	<b>52.9</b>	<b>D</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.09	77.0	E	TR	0.90	24.4	C	TR	0.95	29.2	C	
	SB	L	0.88	36.5	D	L	0.80	19.2	B	L	0.69	11.9	B	
	TR	0.83	21.5	C	TR	0.80	20.2	C	TR	1.04	56.5	E		
Chambers Street	EB	LTR	0.48	42.0	D	LTR	0.27	37.4	D	LTR	0.33	39.5	D	
	WB	LT	0.83	62.5	E	LT	0.66	49.2	D	LT	0.96	88.9	F	
	R	0.44	26.2	C	R	0.52	28.3	C	R	0.74	36.1	D		
<b>Overall Intersection</b>	-	-	<b>1.13</b>	<b>50.9</b>	<b>D</b>	-	<b>0.84</b>	<b>23.7</b>	<b>C</b>	-	<b>0.99</b>	<b>43.0</b>	<b>D</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	L	1.03	117.3	F	L	0.79	72.1	E	L	0.80	73.8	E	
	TR	1.20+	120.0+	F*	TR	0.98	60.2	E	TR	1.09	85.8	F		
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
	TR	0.98	40.9	D	TR	0.86	29.2	C	TR	1.14	120.0+	F*		
Vesey Street	EB	L	0.66	43.2	D	L	0.40	31.9	C	L	0.35	30.4	C	
	TR	1.06	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*		
	WB	L	1.20+	120.0+	F*	L	1.04	120.0+	F*	L	1.20+	120.0+	F*	
	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*		
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.10</b>	<b>103.2</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.90	25.3	C	T	0.78	25.7	C	T	0.84	27.9	C	
Fulton Street	WB	R	0.74	46.8	D	R	0.63	32.1	C	R	0.69	36.1	D	
<b>Overall Intersection</b>	-	-	<b>0.84</b>	<b>27.1</b>	<b>C</b>	-	<b>0.71</b>	<b>26.5</b>	<b>C</b>	-	<b>0.77</b>	<b>29.0</b>	<b>C</b>	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.56	55.1	E	L	0.49	52.5	D	L	0.64	59.0	E	
	TR	0.88	20.7	C	TR	0.75	16.5	B	TR	0.72	15.8	B		
	SB	L	0.72	63.5	E	L	0.72	63.6	E	L	0.66	61.5	E	
	TR	0.73	16.1	B	TR	0.66	14.8	B	TR	0.96	31.7	C		
Liberty Street	EB	LTR	0.53	41.2	D	LTR	0.37	38.0	D	LTR	0.48	40.1	D	
<b>Overall Intersection</b>	-	-	<b>0.76</b>	<b>23.2</b>	<b>C</b>	-	<b>0.64</b>	<b>20.5</b>	<b>C</b>	-	<b>0.78</b>	<b>28.0</b>	<b>C</b>	
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.91	44.5	D	T	0.83	32.5	C	T	0.81	26.1	C	
	SB	TR	1.00	103.1	F	TR	1.02	110.1	F	TR	1.08	111.1	F	
Albany Street	EB	LR	1.01	97.6	F	LR	0.33	34.6	C	LR	0.55	41.9	D	
	WB	L	0.18	31.3	C	L	0.15	30.9	C	L	0.24	32.4	C	
	TR	0.09	30.1	C	TR	0.38	37.2	D	TR	0.21	32.6	C		
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>67.9</b>	<b>E</b>	-	<b>0.81</b>	<b>65.2</b>	<b>E</b>	-	<b>0.91</b>	<b>68.4</b>	<b>E</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	
	R	1.11	118.1	F	R	1.06	79.7	E	R	1.07	107.3	F		
	SB	TR	1.20	120.0+	F*	TR	1.15	120.0+	F*	TR	1.20+	120.0+	F*	
Brooklyn Battery Tunnel	EB	R	0.62	26.3	C	R	0.20	22.0	C	R	0.18	13.6	B	
	WB	L	1.06	120.0+	F*	L	1.01	120.0+	F*	L	1.05	120.0+	F*	
	R	1.20+	120.0+	F*	R	1.10	120.0+	F*	R	1.07	120.0+	F*		
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.14</b>	<b>120.0+</b>	<b>F*</b>	
<b>WASHINGTON STREET CORRIDOR</b>														
<b>8 Washington Street at Vesey Street</b>														
Vesey Street	EB	LT	0.50	10.6	B	LT	0.57	11.5	B	LT	0.54	11.0	B	
	WB	TR	0.32	8.8	A	TR	0.32	8.9	A	TR	0.37	9.2	A	
<b>Overall Intersection</b>	-	-	<b>0.32</b>	<b>9.9</b>	<b>A</b>	-	<b>0.36</b>	<b>10.5</b>	<b>B</b>	-	<b>0.34</b>	<b>10.2</b>	<b>B</b>	
<b>9 Washington Street at Liberty Street</b>														
ANALYSIS NOT NEEDED. (FREE FLOW)														

**TABLE E.2-3  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)			
	Mvt.	V/C	Control			Mvt.	V/C	Control		Mvt.	V/C	Control	
			Delay	LOS	Delay			LOS	Delay			LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.27	15.2	B	LTR	0.24	14.9	B	LTR	0.21	14.5	B
Chambers Street	EB	TR	0.51	18.3	B	TR	0.37	16.3	B	TR	0.38	16.3	B
	WB	LT	0.71	24.8	C	LT	0.68	24.2	C	LT	0.82	30.0	C
<b>Overall Intersection</b>	-		<b>0.49</b>	<b>19.7</b>	<b>B</b>	-	<b>0.46</b>	<b>18.9</b>	<b>B</b>	-	<b>0.52</b>	<b>22.1</b>	<b>C</b>
<b>42 Greenwich Street at Fulton Street</b>													
Greenwich Street	SB	TR	0.36	11.9	B	TR	0.48	13.5	B	TR	0.55	14.7	B
Fulton Street	WB	LT	0.40	24.8	C	LT	0.42	25.3	C	LT	0.53	27.2	C
<b>Overall Intersection</b>	-		<b>0.38</b>	<b>16.6</b>	<b>B</b>	-	<b>0.46</b>	<b>17.3</b>	<b>B</b>	-	<b>0.54</b>	<b>19.2</b>	<b>B</b>
<b>14 Greenwich Street at Liberty Street</b>													
Greenwich Street	SB	L	0.61	24.2	C	L	0.66	27.5	C	L	0.80	38.9	D
	LT		0.42	13.2	B	LT	0.53	15.5	B	LT	0.50	14.8	B
Liberty Street	EB	TR	0.47	24.3	C	TR	0.44	23.7	C	TR	0.44	23.6	C
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>20.0</b>	<b>B</b>	-	<b>0.57</b>	<b>21.0</b>	<b>C</b>	-	<b>0.66</b>	<b>23.3</b>	<b>C</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.02	17.6	B	R	0.08	18.5	B	R	0.08	18.5	B
	SB	LT	0.69	32.2	C	LT	1.20+	120.0+	F*	LT	0.69	32.6	C
Rector Street	EB	TR	0.38	13.0	B	TR	0.80	44.1	D	TR	0.32	12.1	B
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>23.7</b>	<b>C</b>	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.47</b>	<b>23.5</b>	<b>C</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.85	42.2	D	LTR	0.64	34.0	C	LTR	0.89	45.2	D
	R		0.55	35.9	D	R	0.56	36.1	D	R	0.75	44.3	D
Canal Street	EB	L	1.10	88.8	F	L	1.09	80.9	F	L	0.70	35.3	D
	LT		1.02	55.9	E	LT	0.90	34.9	C	T	0.86	30.9	C
	WB	T	1.03	82.1	F	T	1.05	85.3	F	T	0.51	28.4	C
	R		1.10	95.3	F	R	1.12	97.3	F	R	1.18	110.5	F
<b>Overall Intersection</b>			<b>1.04</b>	<b>66.6</b>	<b>E</b>		<b>0.99</b>	<b>64.3</b>	<b>E</b>		<b>1.10</b>	<b>57.3</b>	<b>E</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.20	23.1	C	L	0.33	25.2	C	L	0.72	43.6	D
	T		0.65	29.4	C	T	0.56	27.5	C	T	0.48	26.2	C
	R		0.11	22.0	C	R	0.37	26.1	C	R	0.11	22.0	C
Canal Street	EB	TR	0.44	10.3	B	TR	0.30	8.8	A	TR	0.30	8.9	A
	WB	LT	1.03	71.5	E	LT	1.14	94.6	F	LT	1.16	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>37.8</b>	<b>D</b>	-	<b>0.94</b>	<b>50.0</b>	<b>D</b>	-	<b>0.44</b>	<b>88.8</b>	<b>F</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.98	37.2	D	LTR	0.60	14.5	B	LTR	0.65	15.7	B
Worth Street	EB	TR	0.22	21.0	C	TR	0.15	19.9	B	TR	0.28	23.1	C
	WB	LT	1.01	81.1	F	LT	0.61	30.0	C	LT	0.85	43.2	D
<b>Overall Intersection</b>	-		<b>0.99</b>	<b>44.2</b>	<b>D</b>	-	<b>0.60</b>	<b>17.8</b>	<b>B</b>	-	<b>0.73</b>	<b>23.6</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.38	17.4	B	L	0.31	16.5	B	L	0.26	15.6	B
	TR		0.62	20.5	C	TR	0.46	17.5	B	TR	0.45	17.4	B
Chambers Street	EB	L	0.39	21.6	C	LTR	1.20+	120.0+	F*	L	0.41	22.7	C
	TR		1.08	87.3	F	-	-	-	-	TR	0.74	30.5	C
	WB	LTR	1.07	84.0	F	LTR	0.94	46.6	D	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.85</b>	<b>53.8</b>	<b>D</b>	-	<b>0.93</b>	<b>62.9</b>	<b>E</b>	-	<b>0.86</b>	<b>70.5</b>	<b>E</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.60	12.3	B	TR	0.58	12.1	B	TR	0.67	13.5	B
Barclay Street	WB	LT	0.73	28.8	C	LT	0.44	21.0	C	LT	0.89	39.5	D
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>17.4</b>	<b>B</b>	-	<b>0.52</b>	<b>14.1</b>	<b>B</b>	-	<b>0.77</b>	<b>22.5</b>	<b>C</b>
<b>13 West Broadway/Greenwich Street at Vesey Street</b>													
Greenwich Street	SB	L	0.52	40.5	D	L	0.49	39.8	D	L	0.52	40.4	D
	R		0.63	49.7	D	R	0.28	37.1	D	R	0.42	40.9	D
West Broadway	SB	L	0.57	15.3	B	L	0.36	12.3	B	L	0.61	16.0	B
	TR		0.39	3.0	A	TR	0.37	3.0	A	TR	0.40	3.1	A
Vesey Street	EB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	LT	0.36	32.6	C	LT	0.28	31.6	C	LT	0.35	32.3	C
<b>Overall Intersection</b>	-		<b>0.80</b>	<b>115.1</b>	<b>F</b>	-	<b>0.74</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.92</b>	<b>120.0+</b>	<b>F*</b>

**TABLE E.2-3  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control		LOS
			Delay	LOS				Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>														
<b>21 Church Street at Worth Street</b>														
Church Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	
Worth Street	EB	LT	0.94	57.8	E	LT	0.80	41.0	D	LT	0.59	30.6	C	
	WB	TR	0.92	48.9	D	TR	0.84	45.9	D	TR	0.83	40.0	D	
<b>Overall Intersection</b>	-		<b>1.14</b>	<b>111.4</b>	<b>F</b>	-	<b>1.07</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.07</b>	<b>120.0+</b>	<b>F*</b>	
<b>22 Church Street at Chambers Street</b>														
Church Street	NB	LTR	1.05	61.3	E	LTR	1.02	52.1	D	LTR	1.14	96.5	F	
Chambers Street	EB	LT	1.00	100.3	F	LT	0.99	67.9	E	LT	1.07	87.5	F	
	WB	TR	0.82	31.1	C	TR	0.73	25.7	C	TR	0.67	23.1	C	
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>62.2</b>	<b>E</b>	-	<b>1.01</b>	<b>49.0</b>	<b>D</b>	-	<b>1.11</b>	<b>81.5</b>	<b>F</b>	
<b>23 Church Street at Barclay Street</b>														
Church Street	NB	LT	0.99	38.4	D	LT	0.76	18.0	B	LT	0.86	21.9	C	
Barclay Street	WB	T	0.43	24.0	C	T	0.30	21.7	C	T	0.53	26.0	C	
		R	0.82	45.3	D	R	0.89	54.6	D	R	0.79	42.5	D	
<b>Overall Intersection</b>	-		<b>0.92</b>	<b>37.7</b>	<b>D</b>	-	<b>0.81</b>	<b>24.2</b>	<b>C</b>	-	<b>0.83</b>	<b>25.1</b>	<b>C</b>	
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LT	1.20+	120.0+	F*	LT	0.83	16.0	B	LT	0.95	27.4	C	
	R		1.04	97.7	F	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	
Vesey Street	EB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>116.6</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	
<b>25 Church Street at Fulton Street</b>														
Church Street	NB	LT	0.74	16.9	B	LT	0.79	18.7	B	LT	0.63	14.6	B	
Fulton Street	WB	TR	1.20+	120.0+	F*	TR	0.90	61.8	E	TR	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>66.2</b>	<b>E</b>	-	<b>0.83</b>	<b>24.6</b>	<b>C</b>	-	<b>0.96</b>	<b>83.7</b>	<b>F</b>	
<b>26 Church Street at Dey Street</b>														
Church Street	NB	T	0.63	9.9	A	T	0.63	10.0	A	T	0.54	8.7	A	
Dey Street	WB	R	0.34	32.5	C	R	0.57	42.8	D	R	0.33	32.3	C	
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>10.7</b>	<b>B</b>	-	<b>0.61</b>	<b>12.0</b>	<b>B</b>	-	<b>0.48</b>	<b>9.5</b>	<b>A</b>	
<b>27 Church Street at Cortlandt Street</b>														
Church Street	NB	T	0.61	9.7	A	T	0.44	8.0	A	T	0.47	8.2	A	
Cortlandt Street	WB	R	0.96	74.8	E	R	1.20+	120.0+	F*	R	0.99	84.0	F	
<b>Overall Intersection</b>	-		<b>0.74</b>	<b>20.1</b>	<b>C</b>	-	<b>1.13</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.68</b>	<b>22.6</b>	<b>C</b>	
<b>28 Church Street at Liberty Street</b>														
Church Street	NB	T	0.70	12.1	B	T	0.51	9.0	A	T	0.47	8.5	A	
	R		0.19	7.2	A	R	0.27	8.1	A	R	0.15	6.7	A	
Liberty Street	EB	LT	0.50	24.1	C	LT	0.52	24.5	C	LT	0.59	26.1	C	
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>15.3</b>	<b>B</b>	-	<b>0.51</b>	<b>14.6</b>	<b>B</b>	-	<b>0.52</b>	<b>15.3</b>	<b>B</b>	
<b>29 Trinity Street at Rector Street</b>														
Trinity Street	NB	TR	0.48	12.9	B	TR	0.55	14.0	B	TR	0.40	11.8	B	
Rector Street	EB	LT	0.58	26.9	C	LT	0.41	23.3	C	LT	0.53	25.7	C	
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>18.0</b>	<b>B</b>	-	<b>0.49</b>	<b>16.6</b>	<b>B</b>	-	<b>0.45</b>	<b>16.9</b>	<b>B</b>	

**TABLE E.2-3**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control		LOS
			Delay	LOS				Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.44	20.0	C	LTR	0.57	22.4	C	LTR	0.68	24.1	C	
Canal Street	EB	TR	0.47	19.5	B	TR	0.42	18.8	B	TR	0.92	39.5	D	
	WB	DefL	0.71	30.8	C	LT	0.66	12.9	B	DefL	1.04	79.0	E	
		T	0.36	9.1	A	-	-	-	-	T	0.69	16.6	B	
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>20.2</b>	<b>C</b>	-	<b>0.67</b>	<b>18.0</b>	<b>B</b>	-	<b>0.88</b>	<b>35.4</b>	<b>D</b>	
<b>31 Broadway at Worth Street</b>														
Broadway	SB	LTR	0.74	48.0	D	LTR	0.54	49.0	D	LTR	0.77	53.9	D	
Worth Street	EB	TR	0.99	120.0+	F*	TR	0.92	118.3	F	TR	0.77	31.5	C	
	WB	LT	0.76	40.7	D	LT	0.86	96.6	F	LT	0.76	29.4	C	
<b>Overall Intersection</b>	-		<b>0.85</b>	<b>69.0</b>	<b>E</b>	-	<b>0.71</b>	<b>84.1</b>	<b>F</b>	-	<b>0.77</b>	<b>44.2</b>	<b>D</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.55	12.4	B	LTR	0.41	10.9	B	LTR	0.55	12.4	B	
Chambers Street	EB	TR	0.94	45.9	D	TR	0.64	23.0	C	TR	0.87	36.0	D	
	WB	L	0.52	26.0	C	L	0.34	18.9	B	L	0.38	20.8	C	
		LT	0.71	25.0	C	LT	0.62	21.8	C	LT	0.62	21.8	C	
<b>Overall Intersection</b>	-		<b>0.72</b>	<b>24.5</b>	<b>C</b>	-	<b>0.51</b>	<b>17.0</b>	<b>B</b>	-	<b>0.70</b>	<b>20.9</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.84	28.8	C	L	0.59	18.1	B	L	0.94	41.2	D	
		LT	0.40	13.5	B	LT	0.40	13.5	B	LT	0.37	13.2	B	
Vesey Street	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
		LTR	1.20	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>74.0</b>	<b>E</b>	-	<b>0.49</b>	<b>95.4</b>	<b>F</b>	-	<b>0.70</b>	<b>94.5</b>	<b>F</b>	
<b>34 Broadway at Fulton Street<sup>(1)</sup></b>														
Broadway	SB	TR	0.43	9.0	A	TR	0.47	9.4	A	TR	0.32	8.0	A	
Fulton Street	WB	LT	0.63	31.4	C	LT	CLOSED			LT	0.55	29.1	C	
<b>Overall Intersection</b>	-		<b>0.49</b>	<b>16.4</b>	<b>B</b>	-	<b>0.32</b>	<b>9.4</b>	<b>A</b>	-	<b>0.40</b>	<b>15.5</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.65	12.8	B	LTR	0.58	11.4	B	LTR	0.60	11.9	B	
<b>Overall Intersection</b>	-		<b>0.42</b>	<b>12.8</b>	<b>B</b>	-	<b>0.38</b>	<b>11.4</b>	<b>B</b>	-	<b>0.39</b>	<b>11.9</b>	<b>B</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.50	10.1	B	TR	0.53	10.5	B	TR	0.42	9.2	A	
Maiden Lane	WB	LT	0.55	31.3	C	LT	0.89	51.6	D	LT	0.61	32.9	C	
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>15.6</b>	<b>B</b>	-	<b>0.64</b>	<b>25.5</b>	<b>C</b>	-	<b>0.48</b>	<b>16.8</b>	<b>B</b>	
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.49	10.1	B	LT	0.40	9.0	A	LT	0.39	8.9	A	
Liberty Street	EB	TR	0.29	25.0	C	TR	0.38	26.3	C	TR	0.32	25.5	C	
<b>Overall Intersection</b>	-		<b>0.43</b>	<b>14.3</b>	<b>B</b>	-	<b>0.40</b>	<b>14.9</b>	<b>B</b>	-	<b>0.37</b>	<b>14.0</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.36	7.5	A	T	0.56	10.1	B	T	0.61	11.1	B	
Rector Street	EB	R	1.01	101.8	F	R	0.83	58.0	E	R	0.77	50.9	D	
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>39.9</b>	<b>D</b>	-	<b>0.64</b>	<b>21.7</b>	<b>C</b>	-	<b>0.66</b>	<b>20.6</b>	<b>C</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	T	0.40	7.7	A	T	0.45	8.0	A	T	0.55	9.4	A	
<b>Overall Intersection</b>	-		<b>0.28</b>	<b>7.7</b>	<b>A</b>	-	<b>0.31</b>	<b>8.0</b>	<b>A</b>	-	<b>0.38</b>	<b>9.4</b>	<b>A</b>	
<b>WATER STREET CORRIDOR</b>														
<b>40 Water Street at Fulton Street</b>														
Water Street	NB	L	0.83	48.7	D	L	0.49	20.7	C	L	0.44	18.3	B	
		T	1.07	73.8	E	T	0.88	31.4	C	T	1.06	69.8	E	
	SB	TR	0.58	16.5	B	TR	0.51	15.4	B	TR	0.43	14.4	B	
Fulton Street	EB	LR	0.45	29.3	C	LR	0.48	30.1	C	LR	0.35	26.9	C	
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>45.0</b>	<b>D</b>	-	<b>0.65</b>	<b>24.4</b>	<b>C</b>	-	<b>0.72</b>	<b>45.4</b>	<b>D</b>	



**TABLE E.2-3**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UNIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Street	WB	R	0.51	33.4	D	R	0.49	25.4	D	R	0.47	25.9	D
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street	SB	LT	0.23	16.6	C	LT	0.13	13.1	B	LT	0.21	14.1	B
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street	SB	T	0.22	12.7	B	T	0.17	12.4	B	T	0.23	14.3	B
Greenwich Street		R	0.06	11.2	B	R	0.25	13.0	B	R	0.01	11.3	B
Barclay Street	WB	LT	0.00	7.2	A	LT	0.00	7.2	A	LT	0.00	7.2	A

**General Notes:**

**Eng-Wong, Taub & Associates Notes:**

(1): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



**TABLE E.2-4  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.26	15.0	B	LTR	0.23	14.7	B	LTR	0.21	14.5	B
Chambers Street	EB	TR	0.54	18.9	B	TR	0.40	16.7	B	TR	0.41	16.8	B
	WB	LT	0.78	28.3	C	LT	0.76	27.3	C	LT	0.87	33.8	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.52</b>	<b>21.4</b>	<b>C</b>	<b>-</b>	<b>0.49</b>	<b>20.4</b>	<b>C</b>	<b>-</b>	<b>0.54</b>	<b>23.9</b>	<b>C</b>	
<b>14 Greenwich Street at Liberty Street</b>													
Liberty Street	EB	TR	0.59	12.6	B	TR	0.59	12.6	B	TR	0.55	11.8	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.37</b>	<b>12.6</b>	<b>B</b>	<b>-</b>	<b>0.37</b>	<b>12.6</b>	<b>B</b>	<b>-</b>	<b>0.35</b>	<b>11.8</b>	<b>B</b>	
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.02	17.6	B	R	0.08	18.5	B	R	0.09	18.6	B
	SB	LT	0.87	46.3	D	LT	1.20+	120.0+	F*	LT	0.63	29.4	C
Rector Street	EB	TR	0.70	20.6	C	TR	1.20+	120.0+	F*	TR	0.66	18.9	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.77</b>	<b>32.6</b>	<b>C</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.65</b>	<b>22.8</b>	<b>C</b>	
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.85	42.5	D	LTR	0.64	34.0	C	LTR	0.90	45.9	D
	R		0.56	36.2	D	R	0.55	35.8	D	R	0.73	43.0	D
Canal Street	EB	L	1.16	111.0	F	L	1.16	107.4	F	L	0.79	40.3	D
	LT		1.08	75.4	E	LT	0.97	49.6	D	T	0.94	42.5	D
	WB	T	1.00	73.3	E	T	1.01	73.8	E	T	0.49	27.9	C
	R		1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>1.14</b>	<b>81.7</b>	<b>F</b>	<b>-</b>	<b>1.10</b>	<b>79.8</b>	<b>E</b>	<b>-</b>	<b>1.18</b>	<b>71.3</b>	<b>E</b>	
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.20	23.1	C	L	0.34	25.3	C	L	0.73	44.5	D
	T		0.66	29.4	C	T	0.56	27.5	C	T	0.48	26.1	C
	R		0.11	22.0	C	R	0.37	26.2	C	R	0.11	22.0	C
Canal Street	EB	TR	0.46	10.6	B	TR	0.32	9.0	A	TR	0.32	9.1	A
	WB	LT	1.07	84.8	F	LT	1.18	110.6	F	LT	1.20+	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>0.53</b>	<b>42.6</b>	<b>D</b>	<b>-</b>	<b>0.96</b>	<b>56.9</b>	<b>E</b>	<b>-</b>	<b>0.46</b>	<b>104.7</b>	<b>F</b>	
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.99	38.7	D	LTR	0.60	14.5	B	LTR	0.66	15.7	B
Worth Street	EB	TR	0.22	21.0	C	TR	0.16	20.0	B	TR	0.28	23.1	C
	WB	LT	0.93	59.5	E	LT	0.54	27.5	C	LT	0.81	39.5	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.96</b>	<b>41.4</b>	<b>D</b>	<b>-</b>	<b>0.57</b>	<b>17.2</b>	<b>B</b>	<b>-</b>	<b>0.72</b>	<b>22.5</b>	<b>C</b>	
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.39	17.6	B	L	0.32	16.6	B	L	0.27	15.7	B
	TR		0.60	20.1	C	TR	0.43	17.1	B	TR	0.44	17.2	B
Chambers Street	EB	L	0.42	22.7	C	LTR	1.20+	120.0+	F*	L	0.42	23.2	C
	TR		1.15	114.2	F	-	-	-	-	TR	0.82	38.0	D
	WB	LTR	1.02	67.0	E	LTR	0.92	43.5	D	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>0.88</b>	<b>57.7</b>	<b>E</b>	<b>-</b>	<b>0.88</b>	<b>76.8</b>	<b>E</b>	<b>-</b>	<b>0.84</b>	<b>68.0</b>	<b>E</b>	
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.46	10.7	B	TR	0.46	10.7	B	TR	0.55	11.6	B
Barclay Street	WB	LT	0.84	34.5	C	LT	0.49	21.8	C	LT	0.94	44.7	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.63</b>	<b>20.7</b>	<b>C</b>	<b>-</b>	<b>0.47</b>	<b>14.1</b>	<b>B</b>	<b>-</b>	<b>0.72</b>	<b>25.6</b>	<b>C</b>	
<b>13 West Broadway/ Greenwich Street at Vesey Street</b>													
Greenwich Street	SB	L	0.61	44.9	D	L	0.45	36.3	D	L	0.56	41.4	D
	R		0.40	38.8	D	R	0.13	31.2	C	R	0.29	35.4	D
West Broadway	SB	L	0.86	27.8	C	L	0.90	44.0	D	L	1.16	109.9	F
	R		0.51	15.4	B	R	0.74	31.3	C	R	0.61	19.7	B
Vesey Street	EB	T	0.68	37.4	D	T	0.46	27.4	C	T	0.64	34.7	C
	WB	T	0.48	33.6	C	T	0.30	25.6	C	T	0.42	31.3	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.78</b>	<b>30.7</b>	<b>C</b>	<b>-</b>	<b>0.66</b>	<b>32.6</b>	<b>C</b>	<b>-</b>	<b>0.92</b>	<b>57.7</b>	<b>E</b>	

**TABLE E.2-4**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control		LOS
			Delay	LOS				Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>														
<b>21 Church Street at Worth Street</b>														
Church Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	
Worth Street	EB	LT	0.96	60.9	E	LT	0.82	42.3	D	LT	0.59	30.9	C	
	WB	TR	0.88	44.8	D	TR	0.78	40.4	D	TR	0.81	38.8	D	
<b>Overall Intersection</b>	-		<b>1.18</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.08</b>	<b>120.0+</b>	<b>F*</b>	
<b>22 Church Street at Chambers Street</b>														
Church Street	NB	LTR	1.07	66.8	E	LTR	1.02	50.9	D	LTR	1.13	91.8	F	
Chambers Street	EB	LT	1.08	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	
	WB	TR	0.88	36.1	D	TR	0.77	27.8	C	TR	0.70	24.2	C	
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>72.7</b>	<b>E</b>	-	<b>1.14</b>	<b>65.0</b>	<b>E</b>	-	<b>1.20+</b>	<b>97.0</b>	<b>F</b>	
<b>23 Church Street at Barclay Street</b>														
Church Street	NB	LT	1.07	62.8	E	LT	0.82	20.3	C	LT	0.94	28.5	C	
Barclay Street	WB	T	0.41	23.6	C	T	0.28	21.3	C	T	0.50	25.4	C	
		R	0.83	46.6	D	R	0.90	56.5	E	R	0.81	43.6	D	
<b>Overall Intersection</b>	-		<b>0.98</b>	<b>57.3</b>	<b>E</b>	-	<b>0.85</b>	<b>26.1</b>	<b>C</b>	-	<b>0.88</b>	<b>30.0</b>	<b>C</b>	
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.02	50.5	D	LT	1.13	89.3	F	
	R		0.57	14.3	B	R	0.88	34.6	C	R	0.41	9.0	A	
Vesey Street	EB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.10</b>	<b>76.4</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	
<b>25 Church Street at Fulton Street</b>														
Church Street	NB	T	0.83	19.9	B	T	0.80	18.8	B	T	0.68	15.5	B	
Fulton Street	WB	R	0.57	26.8	C	R	0.60	32.0	C	R	0.55	26.2	C	
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>21.0</b>	<b>C</b>	-	<b>0.72</b>	<b>20.2</b>	<b>C</b>	-	<b>0.63</b>	<b>17.5</b>	<b>B</b>	
<b>26 Church Street at Dey Street</b>														
Church Street	NB	T	0.70	11.1	B	T	0.65	10.4	B	T	0.58	9.2	A	
Dey Street	WB	R	0.24	28.4	C	R	0.41	32.9	C	R	0.24	28.4	C	
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>11.6</b>	<b>B</b>	-	<b>0.58</b>	<b>11.7</b>	<b>B</b>	-	<b>0.48</b>	<b>9.8</b>	<b>A</b>	
<b>27 Church Street at Cortlandt Street</b>														
Church Street	NB	T	0.60	9.6	A	T	0.42	7.8	A	T	0.42	7.8	A	
Cortlandt Street	WB	R	1.05	86.2	F	R	1.20+	120.0+	F*	R	1.09	101.6	F	
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>29.7</b>	<b>C</b>	-	<b>0.87</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.69</b>	<b>38.5</b>	<b>D</b>	
<b>28 Church Street at Liberty Street</b>														
Church Street	NB	T	0.75	13.1	B	T	0.54	9.4	A	T	0.48	8.6	A	
	R		0.22	7.2	A	R	0.28	7.8	A	R	0.16	6.6	A	
Liberty Street	EB	LT	0.41	22.3	C	LT	0.40	22.1	C	LT	0.36	21.8	C	
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>15.3</b>	<b>B</b>	-	<b>0.49</b>	<b>13.5</b>	<b>B</b>	-	<b>0.44</b>	<b>12.7</b>	<b>B</b>	
<b>29 Trinity Street at Rector Street</b>														
Trinity Street	NB	TR	0.48	12.9	B	TR	0.55	14.1	B	TR	0.37	11.4	B	
Rector Street	EB	LT	0.88	44.0	D	LT	0.74	33.2	C	LT	0.88	44.2	D	
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>26.8</b>	<b>C</b>	-	<b>0.62</b>	<b>21.3</b>	<b>C</b>	-	<b>0.57</b>	<b>27.6</b>	<b>C</b>	

**TABLE E.2-4  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)					Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control		LOS
			Delay	LOS				Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.46	20.3	C	LTR	0.59	22.6	C	LTR	0.69	24.3	C	
Canal Street	EB	TR	0.52	20.2	C	TR	0.45	19.2	B	TR	0.96	44.7	D	
	WB	DefL	0.81	40.4	D	LT	0.69	13.7	B	DefL	1.10	101.4	F	
		T	0.35	9.1	A	-	-	-	-	T	0.71	17.5	B	
<b>Overall Intersection</b>	-		<b>0.72</b>	<b>22.1</b>	<b>C</b>	-	<b>0.69</b>	<b>18.5</b>	<b>B</b>	-	<b>0.90</b>	<b>40.7</b>	<b>D</b>	
<b>31 Broadway at Worth Street</b>														
Broadway	SB	LTR	0.79	70.2	E	LTR	0.58	64.1	E	LTR	0.77	67.1	E	
Worth Street	EB	TR	1.01	120.0+	F*	TR	0.93	120.0+	F*	TR	0.76	30.6	C	
	WB	LT	0.74	42.6	D	LT	0.84	103.2	F	LT	0.75	29.1	C	
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>85.7</b>	<b>F</b>	-	<b>0.74</b>	<b>99.3</b>	<b>F</b>	-	<b>0.77</b>	<b>51.8</b>	<b>D</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.59	13.0	B	LTR	0.44	11.2	B	LTR	0.56	12.5	B	
Chambers Street	EB	TR	0.97	53.7	D	TR	0.68	24.4	C	TR	0.92	42.3	D	
	WB	L	0.54	27.2	C	L	0.34	19.0	B	L	0.40	21.7	C	
		LT	0.74	26.3	C	LT	0.64	22.5	C	LT	0.64	22.3	C	
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>26.9</b>	<b>C</b>	-	<b>0.55</b>	<b>17.6</b>	<b>B</b>	-	<b>0.72</b>	<b>23.1</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.85	30.1	C	L	0.60	18.3	B	L	0.95	43.3	D	
		LT	0.48	14.4	B	LT	0.46	14.1	B	LT	0.41	13.5	B	
Vesey Street	EB	L	1.20+	120.0+	F*	L	1.09	120.0+	F*	L	1.20+	120.0+	F*	
		LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>98.3</b>	<b>F</b>	-	<b>0.54</b>	<b>116.2</b>	<b>F</b>	-	<b>0.66</b>	<b>87.7</b>	<b>F</b>	
<b>34 Broadway at Fulton Street<sup>(1)</sup></b>														
Broadway	SB	TR	0.52	9.9	A	TR	0.54	10.2	B	TR	0.38	8.4	A	
Fulton Street	WB	LT	0.64	32.2	C	LT	CLOSED			LT	0.45	27.6	C	
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>15.8</b>	<b>B</b>	-	<b>0.37</b>	<b>10.2</b>	<b>B</b>	-	<b>0.40</b>	<b>13.4</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.90	24.0	C	LTR	0.77	16.1	B	LTR	0.77	16.3	B	
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>24.0</b>	<b>C</b>	-	<b>0.51</b>	<b>16.1</b>	<b>B</b>	-	<b>0.51</b>	<b>16.3</b>	<b>B</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.76	15.6	B	TR	0.74	15.1	B	TR	0.65	12.8	B	
Maiden Lane	WB	LT	0.82	44.6	D	LT	1.11	107.0	F	LT	0.89	51.9	D	
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>23.3</b>	<b>C</b>	-	<b>0.86</b>	<b>45.6</b>	<b>D</b>	-	<b>0.73</b>	<b>25.3</b>	<b>C</b>	
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.70	13.8	B	LT	0.58	11.2	B	LT	0.54	10.6	B	
Liberty Street	EB	TR	0.42	26.7	C	TR	0.48	27.6	C	TR	0.36	25.8	C	
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>17.5</b>	<b>B</b>	-	<b>0.54</b>	<b>16.6</b>	<b>B</b>	-	<b>0.48</b>	<b>14.9</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.40	7.9	A	T	0.61	10.9	B	T	0.65	12.1	B	
Rector Street	EB	R	0.79	57.2	E	R	0.67	43.4	D	R	0.63	40.4	D	
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>21.2</b>	<b>C</b>	-	<b>0.63</b>	<b>17.2</b>	<b>B</b>	-	<b>0.65</b>	<b>17.5</b>	<b>B</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	T	0.40	7.7	A	T	0.45	8.0	A	T	0.55	9.5	A	
<b>Overall Intersection</b>	-		<b>0.28</b>	<b>7.7</b>	<b>A</b>	-	<b>0.31</b>	<b>8.0</b>	<b>A</b>	-	<b>0.38</b>	<b>9.5</b>	<b>A</b>	
<b>WATER STREET CORRIDOR</b>														
<b>40 Water Street at Fulton Street</b>														
Water Street	NB	L	1.08	119.5	F	L	0.54	23.7	C	L	0.44	18.4	B	
		T	1.15	102.3	F	T	0.92	36.4	D	T	1.09	77.8	E	
	SB	TR	0.68	18.4	B	TR	0.54	15.8	B	TR	0.41	13.9	B	
Fulton Street	EB	LR	0.45	29.3	C	LR	0.48	30.0	C	LR	0.34	26.7	C	
<b>Overall Intersection</b>	-		<b>0.79</b>	<b>61.9</b>	<b>E</b>	-	<b>0.66</b>	<b>26.6</b>	<b>C</b>	-	<b>0.72</b>	<b>49.7</b>	<b>D</b>	

**TABLE E.2-4**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UNIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Street	WB	R	0.58	38.7	E	R	0.50	26.1	D	R	0.51	26.7	D
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street	SB	LT	0.26	18.3	C	LT	0.14	13.4	B	LT	0.22	14.7	B
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street	SB	T	0.23	13.5	B	T	0.16	12.8	B	T	0.25	15.6	C
Greenwich Street		R	0.06	11.5	B	R	0.26	13.3	B	R	0.00	11.6	B
Barclay Street	WB	LT	0.00	7.2	A	LT	0.00	7.2	A	LT	0.00	7.2	A

**General Notes:**

**Eng-Wong, Taub & Associates Notes:**

(1): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.

**General Notes:**

(i): Control delay is measured in seconds per vehicle.

(ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.

(iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.

(iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.

(v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



**TABLE E.2-5  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 BUILD CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.30	15.5	B	LTR	0.26	15.1	B	LTR	0.22	14.6	B
Chambers Street	EB	TR	0.54	18.9	B	TR	0.40	16.8	B	TR	0.41	16.8	B
	WB	LT	0.78	28.4	C	LT	0.76	27.3	C	LT	0.87	33.8	C
<b>Overall Intersection</b>	-		<b>0.54</b>	<b>21.3</b>	<b>C</b>	-	<b>0.51</b>	<b>20.3</b>	<b>C</b>	-	<b>0.54</b>	<b>23.9</b>	<b>C</b>
<b>42 Greenwich Street at Fulton Street</b>													
Greenwich Street	SB	TR	0.39	12.2	B	TR	0.49	13.5	B	TR	0.51	13.9	B
Fulton Street	WB	LT	0.56	27.8	C	LT	0.56	27.9	C	LT	0.63	29.8	C
<b>Overall Intersection</b>	-		<b>0.45</b>	<b>18.7</b>	<b>B</b>	-	<b>0.51</b>	<b>19.0</b>	<b>B</b>	-	<b>0.56</b>	<b>20.6</b>	<b>C</b>
<b>14 Greenwich Street at Liberty Street</b>													
Greenwich Street	SB	L	0.73	32.0	C	L	0.78	37.1	D	L	0.86	47.7	D
		LT	0.50	14.6	B	LT	0.68	20.2	C	LT	0.55	15.9	B
Liberty Street	EB	TR	1.02	66.0	E	TR	0.90	41.7	D	TR	0.79	32.9	C
<b>Overall Intersection</b>	-		<b>0.84</b>	<b>47.5</b>	<b>D</b>	-	<b>0.83</b>	<b>34.5</b>	<b>C</b>	-	<b>0.83</b>	<b>30.4</b>	<b>C</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.02	17.6	B	R	0.08	18.5	B	R	0.09	18.6	B
	SB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	0.94	58.4	E
Rector Street	EB	TR	0.70	20.6	C	TR	1.20+	120.0+	F*	TR	0.66	18.9	B
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>102.3</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.77</b>	<b>37.1</b>	<b>D</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.86	43.0	D	LTR	0.65	34.3	C	LTR	0.91	46.9	D
	R		0.57	36.6	D	R	0.60	37.5	D	R	0.80	47.6	D
Canal Street	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	0.89	50.8	D
		LT	1.08	75.4	E	LT	0.97	49.6	D	T	0.94	42.5	D
	WB	T	1.13	115.0	F	T	1.15	119.6	F	T	0.53	29.0	C
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.18</b>	<b>96.5</b>	<b>F</b>	-	<b>1.16</b>	<b>103.7</b>	<b>F</b>	-	<b>1.20+</b>	<b>80.4</b>	<b>F</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.20	23.1	C	L	0.34	25.3	C	L	0.73	44.5	D
		T	0.66	29.6	C	T	0.57	27.6	C	T	0.49	26.2	C
	R		0.11	22.0	C	R	0.37	26.2	C	R	0.11	22.0	C
Canal Street	EB	TR	0.46	10.6	B	TR	0.32	9.0	A	TR	0.32	9.1	A
	WB	LT	1.16	119.8	F	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.53</b>	<b>56.0</b>	<b>E</b>	-	<b>1.05</b>	<b>82.3</b>	<b>F</b>	-	<b>0.46</b>	<b>120.0+</b>	<b>F*</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	1.02	46.4	D	LTR	0.63	15.1	B	LTR	0.68	16.2	B
Worth Street	EB	TR	0.22	21.0	C	TR	0.16	20.0	B	TR	0.28	23.1	C
	WB	LT	1.18	120.0+	F*	LT	0.70	34.6	C	LT	0.87	46.3	D
<b>Overall Intersection</b>	-		<b>1.08</b>	<b>62.1</b>	<b>E</b>	-	<b>0.66</b>	<b>19.4</b>	<b>B</b>	-	<b>0.76</b>	<b>24.8</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.39	17.6	B	L	0.32	16.6	B	L	0.27	15.7	B
		TR	0.69	22.1	C	TR	0.51	18.3	B	TR	0.48	17.8	B
Chambers Street	EB	L	0.43	23.5	C	LTR	1.20+	120.0+	F*	L	0.44	24.3	C
		TR	1.15	114.2	F	-	-	-	-	TR	0.82	38.0	D
	WB	LTR	1.20+	120.0+	F*	LTR	1.11	95.9	F	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>103.2</b>	<b>F</b>	-	<b>0.93</b>	<b>93.1</b>	<b>F</b>	-	<b>0.96</b>	<b>96.3</b>	<b>F</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.66	13.2	B	TR	0.64	12.9	B	TR	0.70	14.0	B
Barclay Street	WB	LT	0.81	33.0	C	LT	0.50	22.1	C	LT	0.92	42.2	D
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>19.5</b>	<b>B</b>	-	<b>0.58</b>	<b>15.1</b>	<b>B</b>	-	<b>0.80</b>	<b>23.8</b>	<b>C</b>
<b>13 West Broadway/Greenwich Street at Vesey Street</b>													
Greenwich Street	SB	L	0.50	39.9	D	L	0.48	39.3	D	L	0.51	40.2	D
		R	0.86	72.6	E	R	0.42	40.9	D	R	0.43	41.3	D
West Broadway	SB	L	0.59	15.6	B	L	0.37	12.5	B	L	0.62	16.3	B
		TR	0.45	3.4	A	TR	0.41	3.2	A	TR	0.41	3.2	A
Vesey Street	EB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	LT	0.69	39.0	D	LT	0.62	37.0	D	LT	0.64	37.5	D
<b>Overall Intersection</b>	-		<b>0.90</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.81</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.93</b>	<b>120.0+</b>	<b>F*</b>



**TABLE E.2-5  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 BUILD CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street</b>													
Church Street	NB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
Worth Street	EB	LT	0.96	60.9	E	LT	0.82	42.3	D	LT	0.59	30.9	C
	WB	TR	0.99	63.1	E	TR	0.91	56.4	E	TR	0.85	42.0	D
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.19</b>	<b>120.0+</b>	<b>F*</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	1.18	110.0	F	LTR	1.18	112.0	F	LTR	1.20+	120.0+	F*
Chambers Street	EB	LT	1.08	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
	WB	TR	0.93	43.1	D	TR	0.81	30.0	C	TR	0.71	24.7	C
<b>Overall Intersection</b>	-		<b>1.13</b>	<b>99.4</b>	<b>F</b>	-	<b>1.20+</b>	<b>106.4</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	LT	1.13	86.1	F	LT	0.92	26.8	C	LT	1.01	44.1	D
Barclay Street	WB	T	0.45	24.2	C	T	0.30	21.8	C	T	0.53	26.1	C
		R	0.83	46.6	D	R	0.90	56.5	E	R	0.81	43.6	D
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>75.9</b>	<b>E</b>	-	<b>0.91</b>	<b>30.6</b>	<b>C</b>	-	<b>0.93</b>	<b>41.9</b>	<b>D</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.17	103.4	F	LT	1.20+	120.0+	F*
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
Vesey Street	EB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	LT	0.98	34.4	C	LT	1.06	56.9	E	LT	0.87	22.1	C
Fulton Street	WB	TR	1.20+	120.0+	F*	TR	1.02	88.9	F	TR	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.19</b>	<b>84.2</b>	<b>F</b>	-	<b>1.04</b>	<b>60.9</b>	<b>E</b>	-	<b>1.14</b>	<b>86.8</b>	<b>F</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.83	14.9	B	T	0.86	16.2	B	T	0.76	12.3	B
Dey Street	WB	R	0.34	32.5	C	R	0.58	43.7	D	R	0.33	32.3	C
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>15.4</b>	<b>B</b>	-	<b>0.78</b>	<b>17.4</b>	<b>B</b>	-	<b>0.64</b>	<b>12.8</b>	<b>B</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.74	11.9	B	T	0.57	9.3	A	T	0.60	9.5	A
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.18</b>	<b>109.3</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.12</b>	<b>120.0+</b>	<b>F*</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.78	14.0	B	T	0.61	10.4	B	T	0.56	9.5	A
		R	0.27	8.1	A	R	0.35	9.2	A	R	0.20	7.2	A
Liberty Street	EB	LT	0.85	36.1	D	LT	0.83	34.5	C	LT	0.84	36.1	D
<b>Overall Intersection</b>	-		<b>0.80</b>	<b>22.2</b>	<b>C</b>	-	<b>0.70</b>	<b>20.7</b>	<b>C</b>	-	<b>0.67</b>	<b>20.8</b>	<b>C</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.49	13.1	B	TR	0.60	15.0	B	TR	0.43	12.1	B
Rector Street	EB	LT	1.00	67.1	E	LT	0.87	42.8	D	LT	1.02	70.8	E
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>38.9</b>	<b>D</b>	-	<b>0.70</b>	<b>26.2</b>	<b>C</b>	-	<b>0.66</b>	<b>41.2</b>	<b>D</b>

**TABLE E.2-5  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 BUILD CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.52	21.0	C	LTR	0.67	24.2	C	LTR	0.74	25.7	C
Canal Street	EB	TR	0.56	21.0	C	TR	0.51	20.1	C	TR	0.97	48.1	D
	WB	DefL	0.81	41.3	D	LT	0.75	15.5	B	DefL	1.10	101.3	F
		T	0.43	10.2	B	-	-	-	-	T	0.74	19.2	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.74</b>	<b>22.7</b>	<b>C</b>	<b>-</b>	<b>0.75</b>	<b>20.1</b>	<b>C</b>	<b>-</b>	<b>0.92</b>	<b>41.9</b>	<b>D</b>	
<b>31 Broadway at Worth Street</b>													
Broadway	SB	LTR	0.85	93.3	F	LTR	0.67	78.2	E	LTR	0.83	83.4	F
Worth Street	EB	TR	1.06	120.0+	F*	TR	1.02	120.0+	F*	TR	0.88	42.4	D
	WB	LT	0.84	58.5	E	LT	1.14	120.0+	F*	LT	0.90	43.5	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.94</b>	<b>103.8</b>	<b>F</b>	<b>-</b>	<b>0.88</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.86</b>	<b>66.4</b>	<b>E</b>	
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.64	13.8	B	LTR	0.49	11.7	B	LTR	0.60	13.2	B
Chambers Street	EB	TR	0.97	53.7	D	TR	0.69	24.9	C	TR	0.94	46.0	D
	WB	L	0.59	29.8	C	L	0.39	20.3	C	L	0.41	22.3	C
		LT	0.77	27.6	C	LT	0.66	23.1	C	LT	0.64	22.4	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.79</b>	<b>27.2</b>	<b>C</b>	<b>-</b>	<b>0.58</b>	<b>18.0</b>	<b>B</b>	<b>-</b>	<b>0.76</b>	<b>24.1</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.85	30.1	C	L	0.60	18.4	B	L	0.96	44.2	D
		LT	0.49	14.4	B	LT	0.48	14.3	B	LT	0.43	13.8	B
Vesey Street	EB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>0.68</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.55</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.76</b>	<b>120.0+</b>	<b>F*</b>	
<b>34 Broadway at Fulton Street<sup>(1)</sup></b>													
Broadway	SB	TR	0.55	10.3	B	TR	0.58	10.7	B	TR	0.38	8.5	A
Fulton Street	WB	LT	0.77	36.8	D	LT	CLOSED			LT	0.60	30.3	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.62</b>	<b>18.6</b>	<b>B</b>	<b>-</b>	<b>0.39</b>	<b>10.7</b>	<b>B</b>	<b>-</b>	<b>0.45</b>	<b>15.7</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	0.81	17.9	B	LTR	0.69	13.6	B	LTR	0.70	13.9	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.53</b>	<b>17.9</b>	<b>B</b>	<b>-</b>	<b>0.44</b>	<b>13.6</b>	<b>B</b>	<b>-</b>	<b>0.46</b>	<b>13.9</b>	<b>B</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.67	13.1	B	TR	0.66	12.9	B	TR	0.58	11.3	B
Maiden Lane	WB	LT	0.82	44.6	D	LT	1.20+	120.0+	F*	LT	0.89	51.9	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.72</b>	<b>22.3</b>	<b>C</b>	<b>-</b>	<b>0.88</b>	<b>88.2</b>	<b>F</b>	<b>-</b>	<b>0.68</b>	<b>25.6</b>	<b>C</b>	
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.58	11.4	B	LT	0.47	9.7	A	LT	0.45	9.4	A
Liberty Street	EB	TR	0.48	27.5	C	TR	0.55	28.9	C	TR	0.42	26.9	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.55</b>	<b>17.1</b>	<b>B</b>	<b>-</b>	<b>0.50</b>	<b>17.4</b>	<b>B</b>	<b>-</b>	<b>0.44</b>	<b>15.5</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.38	7.7	A	T	0.59	10.5	B	T	0.64	11.7	B
Rector Street	EB	R	1.08	120.0+	F*	R	0.90	69.7	E	R	0.85	59.1	E
<b>Overall Intersection</b>	<b>-</b>	<b>0.58</b>	<b>47.2</b>	<b>D</b>	<b>-</b>	<b>0.68</b>	<b>25.3</b>	<b>C</b>	<b>-</b>	<b>0.70</b>	<b>23.4</b>	<b>C</b>	
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	T	0.42	7.9	A	T	0.47	8.2	A	T	0.58	9.8	A
<b>Overall Intersection</b>	<b>-</b>	<b>0.29</b>	<b>7.9</b>	<b>A</b>	<b>-</b>	<b>0.33</b>	<b>8.2</b>	<b>A</b>	<b>-</b>	<b>0.40</b>	<b>9.8</b>	<b>A</b>	
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street</b>													
Water Street	NB	L	1.20+	120.0+	F*	L	0.61	28.7	C	L	0.48	20.2	C
		T	1.20+	120.0+	F*	T	1.06	69.6	E	T	1.20+	120.0+	F*
	SB	TR	0.73	19.9	B	TR	0.64	17.7	B	TR	0.49	15.2	B
Fulton Street	EB	LR	0.46	29.4	C	LR	0.51	30.7	C	LR	0.37	27.2	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.84</b>	<b>77.2</b>	<b>E</b>	<b>-</b>	<b>0.75</b>	<b>42.6</b>	<b>D</b>	<b>-</b>	<b>0.83</b>	<b>88.6</b>	<b>F</b>	

**TABLE E.2-5  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 BUILD CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)				
7 West Street (NYS Rt. 9A) at Barclay Barclay Street	WB	R	0.70	54.4	F	R	0.66	39.1	E	R	0.63	37.7	E
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street Washington Street	SB	LT	0.28	19.8	C	LT	0.15	14.3	B	LT	0.22	15.1	C
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street Greenwich Street	SB	T	0.27	13.6	B	T	0.20	13.1	B	T	0.24	14.9	B
		R	0.06	11.4	B	R	0.27	13.3	B	R	0.01	11.5	B
Barclay Street	WB	LT	0.00	7.2	A	LT	0.00	7.2	A	LT	0.00	7.2	A

**Eng-Wong, Taub & Associates Notes:**

(1): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-6  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A SHORT BYPASS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.00	37.9	D	TR	0.77	19.2	B	TR	0.81	20.5	C
	SB	L	0.94	49.2	D	L	0.84	22.8	C	L	0.69	12.1	B
		TR	0.71	17.8	B	TR	0.65	16.7	B	TR	0.93	26.8	C
Chambers Street	EB	LTR	0.48	42.0	D	LTR	0.27	37.4	D	LTR	0.33	39.5	D
	WB	LT	0.83	62.5	E	LT	0.66	49.2	D	LT	0.96	88.9	F
		R	0.44	26.2	C	R	0.52	28.3	C	R	0.74	36.1	D
<b>Overall Intersection</b>	-		<b>1.13</b>	<b>32.8</b>	<b>C</b>	-	<b>0.79</b>	<b>20.5</b>	<b>C</b>	-	<b>0.95</b>	<b>27.0</b>	<b>C</b>
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.83	52.5	D	L	0.54	28.4	C	L	0.58	35.9	D
		TR	0.54	43.7	D	TR	0.44	37.3	D	TR	0.47	37.2	D
	SB	L	0.28	19.9	B	L	0.48	23.1	C	L	0.28	19.0	B
		TR	0.86	52.9	D	TR	0.52	38.0	D	TR	0.82	50.4	D
Vesey Street	EB	L	0.37	29.0	C	L	0.21	24.3	C	L	0.17	24.1	C
		TR	0.78	55.1	E	TR	0.73	54.6	D	TR	0.91	69.8	E
	WB	L	0.66	42.5	D	L	0.54	33.3	C	L	0.73	49.4	D
		TR	0.73	52.4	D	TR	0.66	47.4	D	TR	0.66	46.7	D
<b>Overall Intersection</b>	-		<b>0.90</b>	<b>47.5</b>	<b>D</b>	-	<b>0.72</b>	<b>36.9</b>	<b>D</b>	-	<b>0.84</b>	<b>47.2</b>	<b>D</b>
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.47	14.3	B	L	0.36	10.8	B	L	0.51	17.2	B
		TR	0.35	18.1	B	TR	0.26	17.1	B	TR	0.25	16.8	B
	SB	L	0.38	11.0	B	L	0.32	9.2	A	L	0.42	10.8	B
		TR	0.47	19.8	B	TR	0.36	18.2	B	TR	0.53	22.4	C
Liberty Street	EB	LTR	0.38	31.1	C	LTR	0.27	29.3	C	LTR	0.33	30.2	C
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>19.9</b>	<b>B</b>	-	<b>0.39</b>	<b>17.7</b>	<b>B</b>	-	<b>0.61</b>	<b>20.5</b>	<b>C</b>
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.90	42.5	D	TR	0.89	58.0	E	TR	0.86	38.4	D
	SB	TR	0.86	29.6	C	TR	0.87	31.6	C	TR	0.92	32.8	C
Albany Street	EB	LTR	0.90	68.2	E	LTR	0.31	34.1	C	LTR	0.56	41.5	D
<b>Overall Intersection</b>	-		<b>0.90</b>	<b>39.2</b>	<b>D</b>	-	<b>0.71</b>	<b>45.7</b>	<b>D</b>	-	<b>0.80</b>	<b>35.6</b>	<b>D</b>
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.20	120.0+	F*	T	1.20+	120.0+	F*	TR	1.14	120.0+	F*
	R		1.10	113.3	F	R	1.04	71.2	E	R	1.06	101.8	F
	SB	TR	1.17	120.0+	F*	TR	1.10	120.0+	F*	TR	1.16	120.0+	F*
Brooklyn Battery Tunnel	EB	R	0.62	26.3	C	R	0.20	22.0	C	R	0.18	13.6	B
	WB	L	1.06	120.0+	F*	L	1.01	120.0+	F*	L	1.05	120.0+	F*
		R	1.19	120.0+	F*	R	1.06	120.0+	F*	R	1.04	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.19</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>
<b>UNSIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>5 West Street (NYS Rt.9A) at Rector Street</b> ANALYSIS NOT NEEDED. (FREE FLOW)													
<b>7 West Street (NYS Rt.9A) at Barclay</b>													
	WB	R	0.23	12.8	B	R	0.26	12.5	B	R	0.26	12.6	B

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-7  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 BUILD CONDITION : CURRENT CONDITIONS SCENARIO WITH ROUTE 9A SHORT BYPASS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.10	78.4	E	TR	0.90	24.3	C	TR	0.95	29.6	C
	SB	L	0.88	35.9	D	L	0.80	18.9	B	L	0.69	11.9	B
		TR	0.84	21.6	C	TR	0.81	20.6	C	TR	1.05	61.6	E
Chambers Street	EB	LTR	0.48	42.0	D	LTR	0.27	37.4	D	LTR	0.33	39.5	D
	WB	LT	0.83	62.5	E	LT	0.66	49.2	D	LT	0.96	88.9	F
		R	0.44	26.2	C	R	0.52	28.3	C	R	0.74	36.1	D
<b>Overall Intersection</b>	<b>-</b>	<b>1.13</b>	<b>51.6</b>	<b>D</b>	<b>-</b>	<b>0.84</b>	<b>23.7</b>	<b>C</b>	<b>-</b>	<b>0.99</b>	<b>45.5</b>	<b>D</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	L	1.07	98.7	F	L	0.88	60.6	E	L	0.83	55.5	E
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*
		TR	1.14	120.0+	F*	TR	0.77	48.6	D	TR	0.87	57.4	E
Vesey Street	EB	L	0.46	31.7	C	L	0.28	25.9	C	L	0.25	26.2	C
		TR	0.92	78.4	E	TR	1.11	120.0+	F*	TR	1.04	107.4	F
	WB	L	0.84	61.3	E	L	0.76	48.9	D	L	0.94	79.6	E
		TR	0.79	61.3	E	TR	0.81	65.3	E	TR	0.86	70.4	E
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>													
West Street (NYS Rt. 9A)	NB	T	0.29	11.9	B	T	0.25	16.4	B	T	0.26	16.5	B
Fulton Street	WB	R	0.74	46.8	D	R	0.63	32.1	C	R	0.69	36.1	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.46</b>	<b>21.5</b>	<b>C</b>	<b>-</b>	<b>0.42</b>	<b>22.4</b>	<b>C</b>	<b>-</b>	<b>0.46</b>	<b>24.7</b>	<b>C</b>	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.48	14.9	B	L	0.38	11.6	B	L	0.54	19.4	B
		TR	0.48	19.8	B	TR	0.45	19.5	B	TR	0.38	18.4	B
	SB	L	0.58	19.1	B	L	0.55	16.6	B	L	0.43	12.6	B
		TR	0.49	20.2	C	TR	0.40	18.7	B	TR	0.58	23.6	C
Liberty Street	EB	LTR	0.40	31.4	C	LTR	0.28	29.5	C	LTR	0.36	30.8	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.67</b>	<b>21.3</b>	<b>C</b>	<b>-</b>	<b>0.56</b>	<b>19.5</b>	<b>B</b>	<b>-</b>	<b>0.65</b>	<b>21.8</b>	<b>C</b>	
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	T	0.75	16.7	B	T	0.68	16.4	B	T	0.66	14.2	B
	SB	TR	0.88	32.6	C	TR	0.89	37.8	D	TR	0.94	42.4	D
Albany Street	EB	LR	1.00	95.6	F	LR	0.32	34.6	C	LR	0.55	41.9	D
	WB	L	0.18	31.4	C	L	0.15	30.8	C	L	0.23	32.2	C
		TR	0.08	30.0	C	TR	0.28	34.3	C	TR	0.21	32.4	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.92</b>	<b>26.8</b>	<b>C</b>	<b>-</b>	<b>0.71</b>	<b>26.4</b>	<b>C</b>	<b>-</b>	<b>0.82</b>	<b>29.4</b>	<b>C</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
		R	1.11	118.1	F	R	1.06	79.7	E	R	1.07	107.3	F
	SB	TR	1.20+	120.0+	F*	TR	1.18	120.0+	F*	TR	1.20+	120.0+	F*
Brooklyn Battery Tunnel	EB	R	0.62	26.3	C	R	0.20	22.0	C	R	0.18	13.6	B
	WB	L	1.06	120.0+	F*	L	1.01	120.0+	F*	L	1.05	120.0+	F*
		R	1.20+	120.0+	F*	R	1.13	120.0+	F*	R	1.07	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.14</b>	<b>120.0+</b>	<b>F*</b>	
<b>UNSIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>5 West Street (NYS Rt.9A) at Rector Street</b> ANALYSIS NOT NEEDED. (FREE FLOW)													
<b>7 West Street (NYS Rt.9A) at Barclay</b>													
Barclay Street	WB	R	0.22	13.3	B	R	0.28	13.2	B	R	0.25	13.0	B

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-8  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A SHORT BYPASS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.12	87.1	F	TR	0.91	25.0	C	TR	0.94	28.0	C
	SB	L	0.86	32.2	C	L	0.78	17.7	B	L	0.70	12.3	B
		TR	0.87	22.8	C	TR	0.79	19.8	B	TR	1.01	48.8	D
Chambers Street	EB	LTR	0.49	42.3	D	LTR	0.31	38.7	D	LTR	0.36	40.7	D
	WB	LT	0.99	91.7	F	LT	0.85	66.6	E	LT	1.08	120.0+	F*
		R	0.45	26.3	C	R	0.52	28.5	C	R	0.75	36.7	D
<b>Overall Intersection</b>	-		<b>1.18</b>	<b>57.0</b>	<b>E</b>	-	<b>0.91</b>	<b>24.6</b>	<b>C</b>	-	<b>1.02</b>	<b>40.9</b>	<b>D</b>
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.92	67.9	E	L	0.70	44.0	D	L	0.74	45.5	D
		TR	0.65	56.8	E	TR	0.53	39.1	D	TR	0.43	36.4	D
	SB	L	0.38	24.4	C	L	0.57	28.2	C	L	0.32	19.8	B
		TR	1.20+	120.0+	F*	TR	0.94	61.8	E	TR	0.88	83.3	F
Vesey Street	EB	L	0.41	35.0	D	L	0.23	29.4	C	L	0.19	28.4	C
		TR	0.79	56.0	E	TR	0.74	55.3	E	TR	0.92	72.4	E
	WB	L	0.68	43.7	D	L	0.57	34.5	C	L	0.76	52.5	D
		TR	1.12	120.0+	F*	TR	1.09	120.0+	F*	TR	1.02	100.4	F
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>119.8</b>	<b>F</b>	-	<b>0.84</b>	<b>57.8</b>	<b>E</b>	-	<b>0.91</b>	<b>65.9</b>	<b>E</b>
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.68	23.9	C	L	0.52	14.9	B	L	0.57	18.0	B
		TR	0.45	19.5	B	TR	0.34	18.0	B	TR	0.24	16.7	B
	SB	L	1.09	83.6	F	L	0.85	30.8	C	L	0.65	16.2	B
		TR	0.56	21.3	C	TR	0.43	19.2	B	TR	0.47	21.6	C
Liberty Street	EB	LTR	0.49	33.1	C	LTR	0.41	31.5	C	LTR	0.45	32.3	C
<b>Overall Intersection</b>	-		<b>0.87</b>	<b>35.9</b>	<b>D</b>	-	<b>0.75</b>	<b>23.3</b>	<b>C</b>	-	<b>0.68</b>	<b>21.6</b>	<b>C</b>
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.98	90.7	F	TR	0.97	111.8	F	TR	0.90	65.4	E
	SB	TR	0.88	37.9	D	TR	0.88	40.9	D	TR	0.94	44.8	D
Albany Street	EB	LTR	1.09	117.2	F	LTR	0.53	39.9	D	LTR	0.85	62.5	E
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>73.8</b>	<b>E</b>	-	<b>0.83</b>	<b>79.0</b>	<b>E</b>	-	<b>0.91</b>	<b>55.0</b>	<b>D</b>
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*
		R	1.19	120.0+	F*	R	1.11	100.6	F	R	1.10	120.0+	F*
	SB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
Brooklyn Battery Tunnel	EB	R	0.63	26.6	C	R	0.21	22.1	C	R	0.18	13.6	B
	WB	L	1.08	120.0+	F*	L	1.03	120.0+	F*	L	1.07	120.0+	F*
		R	1.20+	120.0+	F*	R	1.13	120.0+	F*	R	1.09	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.17</b>	<b>120.0+</b>	<b>F*</b>

**UNSIGNALIZED INTERSECTIONS**

**WEST STREET CORRIDOR**

<b>5 West Street (NYS Rt.9A) at Rector Street</b>	ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)				
<b>7 West Street (NYS Rt. 9A) at Barclay</b>													
Barclay Street	WB	R	0.25	13.6	B	R	0.28	13.3	B	R	0.27	12.9	B

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-9  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 BUILD CONDITION: CURRENT CONDITIONS SCENARIO WITH ROUTE 9A SHORT BYPASS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)					
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.20+	120.0+	F*	TR	1.14	97.2	F	TR	1.14	97.6	F	
	SB	L	0.84	30.6	C	L	0.67	11.1	B	L	0.62	9.3	A	
		TR	1.13	93.3	F	TR	1.07	69.2	E	TR	1.16	105.2	F	
Chambers Street	EB	LTR	0.49	42.3	D	LTR	0.31	38.7	D	LTR	0.36	40.7	D	
	WB	LT	0.99	91.7	F	LT	0.85	66.6	E	LT	1.08	120.0+	F*	
		R	0.45	26.3	C	R	0.52	28.5	C	R	0.75	36.7	D	
<b>Overall Intersection</b>	<b>-</b>	<b>1.18</b>	<b>118.4</b>	<b>F</b>	<b>-</b>	<b>1.04</b>	<b>76.6</b>	<b>E</b>	<b>-</b>	<b>1.10</b>	<b>93.5</b>	<b>F</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	L	1.02	89.4	F	L	0.87	63.4	E	L	1.01	81.8	F	
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.02	114.3	F	
Vesey Street	EB	L	0.48	37.8	D	L	0.32	34.1	C	L	0.29	37.1	D	
		TR	0.93	80.7	F	TR	1.12	120.0+	F*	TR	1.06	112.5	F	
	WB	L	0.98	89.5	F	L	1.00	110.9	F	L	1.20+	120.0+	F*	
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>		
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.37	12.7	B	T	0.30	16.9	B	T	0.26	16.5	B	
Fulton Street	WB	R	0.84	56.0	E	R	0.69	35.0	C	R	0.72	38.4	D	
<b>Overall Intersection</b>	<b>-</b>	<b>0.54</b>	<b>23.9</b>	<b>C</b>	<b>-</b>	<b>0.48</b>	<b>23.6</b>	<b>C</b>	<b>-</b>	<b>0.47</b>	<b>25.9</b>	<b>C</b>		
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.72	27.3	C	L	0.57	18.4	B	L	0.66	24.6	C	
		TR	0.64	22.9	C	TR	0.53	21.0	C	TR	0.39	18.5	B	
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	0.83	30.8	C	
		TR	0.61	22.4	C	TR	0.52	20.6	C	TR	0.59	24.3	C	
Liberty Street	EB	LTR	0.51	33.6	C	LTR	0.42	31.8	C	LTR	0.48	33.0	C	
<b>Overall Intersection</b>	<b>-</b>	<b>1.13</b>	<b>119.5</b>	<b>F</b>	<b>-</b>	<b>1.05</b>	<b>95.7</b>	<b>F</b>	<b>-</b>	<b>0.76</b>	<b>25.8</b>	<b>C</b>		
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.86	30.0	C	T	0.79	26.0	C	T	0.73	19.3	B	
	SB	TR	0.91	48.4	D	TR	0.94	68.3	E	TR	0.99	78.3	E	
Albany Street	EB	LR	1.20+	120.0+	F*	LR	0.59	43.6	D	LR	0.88	68.8	E	
	WB	L	0.47	37.4	D	L	0.46	36.7	D	L	0.61	41.9	D	
		TR	0.32	33.7	C	TR	0.56	40.8	D	TR	0.50	38.6	D	
<b>Overall Intersection</b>	<b>-</b>	<b>1.14</b>	<b>52.8</b>	<b>D</b>	<b>-</b>	<b>0.83</b>	<b>43.7</b>	<b>D</b>	<b>-</b>	<b>0.95</b>	<b>49.6</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	T	1.20+	120.0+	F*	
		R	1.20+	120.0+	F*	R	1.15	117.2	F	R	1.13	120.0+	F*	
	SB	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	
Brooklyn Battery Tunnel	EB	R	0.63	26.6	C	R	0.21	22.1	C	R	0.18	13.6	B	
	WB	L	1.08	120.0+	F*	L	1.03	120.0+	F*	L	1.07	120.0+	F*	
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.13	120.0+	F*	
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>		
<b>UN SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>5 West Street (NYS Rt.9A) at Rector Street</b>														
			ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)			
<b>7 West Street (NYS Rt. 9A) at Barclay Street</b>														
Barclay Street	WB	R	0.25	13.2	B	R	0.34	14.6	B	R	0.31	14.5	B	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).





**TABLE E.2-10  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
PRE SEPTEMBER 11<sup>TH</sup> EXISTING CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.52	24.1	C	LTR	0.52	24.2	C	LTR	0.52	24.0	C
Chambers Street	EB	TR	0.33	10.9	B	TR	0.23	10.0	B	TR	0.30	10.7	B
	WB	LT	0.61	15.8	B	LT	0.48	13.4	B	LT	0.65	17.3	B
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>17.0</b>	<b>B</b>	-	<b>0.50</b>	<b>16.9</b>	<b>B</b>	-	<b>0.60</b>	<b>17.7</b>	<b>B</b>
<b>14 Greenwich Street at Liberty Street</b>													
Liberty Street	EB	TR	0.46	10.5	B	TR	0.41	10.0	A	TR	0.43	10.1	B
<b>Overall Intersection</b>	-		<b>0.29</b>	<b>10.5</b>	<b>B</b>	-	<b>0.26</b>	<b>10.0</b>	<b>A</b>	-	<b>0.27</b>	<b>10.1</b>	<b>B</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.11	19.1	B	R	0.15	19.7	B	R	0.00	17.4	B
	SB	LT	0.78	39.7	D	LT	0.31	21.6	C	LT	0.32	21.6	C
Rector Street	EB	TR	0.10	9.8	A	TR	0.28	11.6	B	TR	0.25	11.3	B
<b>Overall Intersection</b>	-		<b>0.38</b>	<b>33.4</b>	<b>C</b>	-	<b>0.29</b>	<b>16.4</b>	<b>B</b>	-	<b>0.28</b>	<b>16.0</b>	<b>B</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.92	48.2	D	LTR	0.77	37.2	D	LTR	0.37	28.6	C
	R	R	0.83	50.6	D	R	0.64	38.4	D	R	0.96	114.6	F
Canal Street	EB	L	0.90	52.0	D	L	0.94	57.7	E	L	0.24	23.7	C
	T	T	0.94	40.5	D	T	0.88	33.7	C	T	0.84	28.1	C
	WB	T	0.92	54.7	D	T	0.88	51.2	D	T	0.20	23.1	C
	R	R	1.05	60.5	E	R	1.01	55.3	E	R	1.04	56.9	E
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>51.8</b>	<b>D</b>	-	<b>0.95</b>	<b>46.1</b>	<b>D</b>	-	<b>1.02</b>	<b>54.9</b>	<b>D</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.24	23.7	C	L	0.15	22.5	C	L	0.40	26.3	C
	T	T	0.92	43.6	D	T	1.04	78.8	E	T	1.05	91.8	F
	R	R	0.16	22.6	C	R	0.16	22.6	C	R	0.19	23.5	C
Canal Street	EB	TR	0.42	10.3	B	TR	0.42	10.3	B	TR	0.39	10.1	B
	WB	LT	0.97	60.3	E	LT	0.95	46.5	D	LT	0.97	73.5	E
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>43.8</b>	<b>D</b>	-	<b>0.63</b>	<b>52.7</b>	<b>D</b>	-	<b>0.62</b>	<b>68.4</b>	<b>E</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.93	30.0	C	LTR	0.65	15.6	B	LTR	0.76	18.1	B
Worth Street	EB	TR	0.18	20.3	C	TR	0.16	19.9	B	TR	0.21	20.7	C
	WB	LT	0.75	35.9	D	LT	0.56	28.0	C	LT	0.62	29.0	C
<b>Overall Intersection</b>	-		<b>0.86</b>	<b>30.7</b>	<b>C</b>	-	<b>0.62</b>	<b>18.2</b>	<b>B</b>	-	<b>0.70</b>	<b>20.3</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.34	16.9	B	L	0.37	17.2	B	L	0.36	17.1	B
	TR	TR	0.65	21.2	C	TR	0.50	18.2	B	TR	0.47	17.6	B
Chambers Street	EB	L	0.42	22.1	C	LTR	0.96	83.9	F	L	0.26	17.5	B
	TR	TR	0.89	39.7	D	-	-	-	-	TR	0.70	25.7	C
	WB	LTR	0.78	28.2	C	LTR	0.57	20.7	C	LTR	0.84	33.6	C
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>27.2</b>	<b>C</b>	-	<b>0.73</b>	<b>36.0</b>	<b>D</b>	-	<b>0.65</b>	<b>24.1</b>	<b>C</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.44	10.4	B	TR	0.31	9.4	A	TR	0.41	10.2	B
Barclay Street	WB	LT	0.78	30.6	C	LT	0.36	19.6	B	LT	0.84	33.6	C
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>18.7</b>	<b>B</b>	-	<b>0.33</b>	<b>12.7</b>	<b>B</b>	-	<b>0.60</b>	<b>20.9</b>	<b>C</b>
<b>13 West Broadway at Vesey Street</b>													
West Broadway	SB	L	0.97	68.7	E	L	0.36	16.9	B	L	0.89	38.8	D
	R	R	0.69	25.3	C	R	0.75	28.2	C	R	0.85	35.9	D
Vesey Street	EB	T	0.35	15.8	B	T	0.28	15.1	B	T	0.31	15.3	B
	WB	T	0.12	13.7	B	T	0.12	13.7	B	T	0.13	13.7	B
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>36.3</b>	<b>D</b>	-	<b>0.52</b>	<b>18.9</b>	<b>B</b>	-	<b>0.60</b>	<b>27.1</b>	<b>C</b>

**TABLE E.2-10  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
PRE SEPTEMBER 11<sup>TH</sup> EXISTING CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street<sup>(1)</sup></b>													
Church Street	NB	LTR	0.60	14.0	B	LTR	0.90	17.4	B	LTR	0.74	11.6	B
Worth Street	EB	LT	0.81	44.3	D	LT	0.50	25.9	C	LT	0.71	34.2	C
	WB	TR	0.74	33.5	C	TR	0.60	27.7	C	TR	0.63	28.7	C
<b>Overall Intersection</b>	-		<b>0.68</b>	<b>22.0</b>	<b>C</b>	-	<b>0.78</b>	<b>19.6</b>	<b>B</b>	-	<b>0.73</b>	<b>17.0</b>	<b>B</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	0.82	25.2	C	LTR	0.93	33.7	C	LTR	0.75	22.7	C
Chambers Street	EB	LT	0.97	73.0	E	LT	0.97	78.4	E	LT	0.97	71.5	E
	WB	TR	0.99	70.3	E	TR	0.74	26.3	C	TR	0.80	29.1	C
<b>Overall Intersection</b>	-		<b>0.91</b>	<b>46.7</b>	<b>D</b>	-	<b>0.95</b>	<b>40.3</b>	<b>D</b>	-	<b>0.86</b>	<b>36.2</b>	<b>D</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	LT	1.00	53.2	D	LT	0.72	16.8	B	LT	0.78	18.7	B
Barclay Street	WB	T	0.38	22.9	C	T	0.24	20.7	C	T	0.47	24.5	C
		R	0.97	90.9	F	R	0.99	74.7	E	R	1.00	77.0	E
<b>Overall Intersection</b>	-		<b>0.99</b>	<b>55.7</b>	<b>E</b>	-	<b>0.83</b>	<b>28.6</b>	<b>C</b>	-	<b>0.87</b>	<b>29.3</b>	<b>C</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LTR	0.93	20.1	C	LT	1.01	46.5	D	LT	1.02	48.2	D
		-	-	-	-	R	0.53	12.3	B	R	0.61	14.4	B
Vesey Street	EB	LT	0.91	39.6	D	LT	0.50	23.8	C	LT	0.73	29.1	C
<b>Overall Intersection</b>	-		<b>0.92</b>	<b>26.6</b>	<b>C</b>	-	<b>0.81</b>	<b>36.7</b>	<b>D</b>	-	<b>0.90</b>	<b>38.1</b>	<b>D</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	T	0.73	11.8	B	T	0.58	9.2	A	T	0.58	9.1	A
Fulton Street	WB	R	0.69	39.8	D	R	0.57	40.2	D	R	0.53	33.3	C
<b>Overall Intersection</b>	-		<b>0.72</b>	<b>15.4</b>	<b>B</b>	-	<b>0.58</b>	<b>11.4</b>	<b>B</b>	-	<b>0.56</b>	<b>12.1</b>	<b>B</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.77	6.5	A	T	0.63	10.1	B	T	0.58	9.2	A
Dey Street	WB	R	0.27	29.3	C	R	0.27	29.3	C	R	0.26	29.0	C
<b>Overall Intersection</b>	-		<b>0.63</b>	<b>7.2</b>	<b>A</b>	-	<b>0.53</b>	<b>10.8</b>	<b>B</b>	-	<b>0.49</b>	<b>9.9</b>	<b>A</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.69	11.0	B	T	0.54	8.9	A	T	0.52	8.7	A
Cortlandt Street	WB	R	0.93	57.5	E	R	0.77	38.4	D	R	0.73	35.8	D
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>20.9</b>	<b>C</b>	-	<b>0.63</b>	<b>15.5</b>	<b>B</b>	-	<b>0.60</b>	<b>14.5</b>	<b>B</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.88	19.3	B	T	0.67	11.5	B	T	0.59	10.0	A
		R	0.27	7.7	A	R	0.19	7.0	A	R	0.17	6.7	A
Liberty Street	EB	LT	0.29	20.9	C	LT	0.30	21.0	C	LT	0.34	21.5	C
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>18.6</b>	<b>B</b>	-	<b>0.53</b>	<b>13.5</b>	<b>B</b>	-	<b>0.49</b>	<b>12.8</b>	<b>B</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.93	30.8	C	TR	0.62	15.3	B	TR	0.57	14.1	B
Rector Street	EB	LT	0.36	22.6	C	LT	0.34	22.1	C	LT	0.33	22.1	C
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>29.6</b>	<b>C</b>	-	<b>0.51</b>	<b>16.7</b>	<b>B</b>	-	<b>0.47</b>	<b>15.7</b>	<b>B</b>

**TABLE E.2-10  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
PRE SEPTEMBER 11<sup>TH</sup> EXISTING CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.22	17.8	B	LTR	0.47	20.7	C	LTR	0.48	22.5	C
Canal Street	EB	TR	0.37	18.0	B	TR	0.38	18.1	B	TR	1.04	108.0	F
	WB	DefL	0.80	35.0	D	LT	0.63	11.8	B	DefL	1.03	103.5	F
		T	0.39	9.3	A	-	-	-	-	T	0.84	33.3	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.60</b>	<b>20.6</b>	<b>C</b>	<b>-</b>	<b>0.60</b>	<b>16.4</b>	<b>B</b>	<b>-</b>	<b>0.82</b>	<b>69.7</b>	<b>E</b>	
<b>31 Broadway at Worth Street<sup>(1)</sup></b>													
Broadway	SB	LTR	0.54	12.2	B	LTR	0.70	14.9	B	LTR	0.66	14.0	B
Worth Street	EB	TR	0.43	19.0	B	TR	0.75	28.3	C	TR	0.60	22.8	C
	WB	L	0.14	15.7	B	L	0.69	35.8	D	L	0.30	18.8	B
		T	0.53	20.8	C	T	0.45	19.1	B	T	0.54	21.0	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.54</b>	<b>15.9</b>	<b>B</b>	<b>-</b>	<b>0.72</b>	<b>20.6</b>	<b>C</b>	<b>-</b>	<b>0.64</b>	<b>17.6</b>	<b>B</b>	
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.36	10.4	B	LTR	0.55	12.4	B	LTR	0.51	11.9	B
Chambers Street	EB	TR	1.00	68.9	E	TR	0.69	24.6	C	TR	0.91	40.3	D
	WB	L	0.13	15.4	B	L	0.44	21.6	C	L	0.68	35.8	D
		LT	0.86	33.8	C	LT	0.60	21.2	C	LT	0.79	28.4	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.65</b>	<b>37.0</b>	<b>D</b>	<b>-</b>	<b>0.61</b>	<b>17.3</b>	<b>B</b>	<b>-</b>	<b>0.69</b>	<b>24.9</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.69	25.3	C	L	0.72	27.2	C	L	0.86	34.6	C
		LT	0.58	19.5	B	LT	0.52	18.7	B	LT	0.53	18.7	B
Vesey Street	EB	L	0.85	55.3	E	L	0.51	35.2	D	L	0.93	67.7	E
		LTR	0.93	53.3	D	LTR	0.69	36.8	D	LTR	0.72	37.3	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.55</b>	<b>33.9</b>	<b>C</b>	<b>-</b>	<b>0.50</b>	<b>26.1</b>	<b>C</b>	<b>-</b>	<b>0.62</b>	<b>32.8</b>	<b>C</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>													
Broadway	SB	TR	0.57	10.0	A	TR	0.50	9.7	A	TR	0.50	9.6	A
Fulton Street	WB	LT	0.41	26.2	C	LT	CLOSED			LT	0.30	25.2	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.52</b>	<b>13.1</b>	<b>B</b>	<b>-</b>	<b>0.34</b>	<b>9.7</b>	<b>A</b>	<b>-</b>	<b>0.43</b>	<b>12.2</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	0.94	28.8	C	LTR	0.69	13.4	B	LTR	0.81	17.8	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.61</b>	<b>28.8</b>	<b>C</b>	<b>-</b>	<b>0.44</b>	<b>13.4</b>	<b>B</b>	<b>-</b>	<b>0.53</b>	<b>17.8</b>	<b>B</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.81	17.4	B	TR	0.64	12.2	B	TR	0.63	12.1	B
Maiden Lane	WB	LT	0.89	51.9	D	LT	1.00	73.9	E	LT	0.81	43.8	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.84</b>	<b>26.1</b>	<b>C</b>	<b>-</b>	<b>0.75</b>	<b>30.7</b>	<b>C</b>	<b>-</b>	<b>0.69</b>	<b>20.6</b>	<b>C</b>	
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.69	7.9	A	LT	0.67	13.4	B	LT	0.64	12.8	B
Liberty Street	EB	TR	0.41	26.8	C	TR	0.60	36.0	D	TR	0.50	33.4	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.60</b>	<b>12.3</b>	<b>B</b>	<b>-</b>	<b>0.65</b>	<b>18.7</b>	<b>B</b>	<b>-</b>	<b>0.60</b>	<b>17.2</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.51	9.9	A	T	0.47	5.0	A	T	0.47	9.5	A
Rector Street	EB	R	0.70	46.0	D	R	0.51	32.1	C	R	0.63	40.9	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.57</b>	<b>14.6</b>	<b>B</b>	<b>-</b>	<b>0.48</b>	<b>9.0</b>	<b>A</b>	<b>-</b>	<b>0.52</b>	<b>13.6</b>	<b>B</b>	
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	LT	0.67	11.1	B	LT	0.56	9.1	A	LT	0.59	9.8	A
<b>Overall Intersection</b>	<b>-</b>	<b>0.46</b>	<b>11.1</b>	<b>B</b>	<b>-</b>	<b>0.38</b>	<b>9.1</b>	<b>A</b>	<b>-</b>	<b>0.41</b>	<b>9.8</b>	<b>A</b>	
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street<sup>(3)</sup></b>													
Water Street	NB	LT	0.65	17.6	B	LT	0.46	14.5	B	LT	0.46	14.4	B
	SB	TR	0.50	15.0	B	TR	0.25	12.2	B	TR	0.21	11.8	B
Fulton Street	EB	LR	0.45	29.3	C	LR	0.35	27.1	C	LR	0.68	35.8	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.51</b>	<b>17.6</b>	<b>B</b>	<b>-</b>	<b>0.36</b>	<b>15.1</b>	<b>B</b>	<b>-</b>	<b>0.47</b>	<b>18.4</b>	<b>B</b>	

**TABLE E.2-10  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
PRE SEPTEMBER 11<sup>TH</sup> EXISTING CONDITIONS**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt. 9A) at Barclay Street	WB	R	0.39	26.6	D	R	0.50	25.8	D	R	0.53	28.5	D
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street	EB	LTR	0.05	7.5	A	LTR	0.03	7.4	A	LTR	0.03	7.4	A
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street	SB	R	0.04	11.3	B	R	0.18	12.2	B	R	0.06	11.7	B

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-11**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2009 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	Mvt.	V/C	AM (8:15 - 9:15AM)		LOS	Midday (12:00PM - 1:00PM)		LOS	Mvt.	V/C	PM (5:00 - 6:00PM)		LOS
			Control Delay			Control Delay					Control Delay		
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	T	0.75	3.0	A	T	0.57	2.1	A	T	0.92	7.5	A
	SB	T	0.59	1.9	A	T	0.48	1.7	A	T	0.65	2.4	A
Canal Street	WB	L	0.32	45.6	D	L	0.57	52.2	D	L	0.16	38.5	D
	LR		0.50	52.5	D	LR	0.40	46.0	D	LR	0.19	39.7	D
	R		0.57	55.9	E	R	0.49	50.0	D	R	0.22	40.0	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.71</b>	<b>4.8</b>	<b>A</b>	<b>-</b>	<b>0.57</b>	<b>5.2</b>	<b>A</b>	<b>-</b>	<b>0.76</b>	<b>5.9</b>	<b>A</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.02	48.1	D	TR	0.74	14.2	B	TR	1.04	105.1	F
	R		0.51	12.9	B	R	0.51	13.0	B	R	0.26	9.5	A
	SB	L	0.98	61.7	E	L	0.93	53.9	D	L	0.79	40.0	D
	T		1.03	40.8	D	T	0.99	18.5	B	T	1.03	78.2	E
<b>Overall Intersection</b>	<b>-</b>	<b>1.00</b>	<b>44.3</b>	<b>D</b>	<b>-</b>	<b>0.82</b>	<b>19.2</b>	<b>B</b>	<b>-</b>	<b>0.93</b>	<b>87.7</b>	<b>F</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.02	56.3	E	TR	0.86	21.5	C	TR	1.05	67.4	E
	SB	L	0.89	28.6	C	L	0.75	25.7	C	L	0.38	11.3	B
	TR		0.92	33.7	C	TR	0.65	16.1	B	TR	1.01	55.4	E
Chambers Street	EB	LTR	0.74	62.1	E	LTR	0.29	36.5	D	LTR	0.60	43.0	D
	WB	LT	0.79	56.1	E	LT	0.69	49.9	D	LT	1.02	94.1	F
	R		0.68	29.3	C	R	0.81	44.0	D	R	0.66	25.8	C
<b>Overall Intersection</b>	<b>-</b>	<b>1.00</b>	<b>44.5</b>	<b>D</b>	<b>-</b>	<b>1.00</b>	<b>22.7</b>	<b>C</b>	<b>-</b>	<b>1.00</b>	<b>57.2</b>	<b>E</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.97	21.8	C	TR	0.69	12.0	B	TR	0.77	13.2	B
	SB	L	0.12	7.4	A	L	0.19	4.5	A	L	0.15	4.9	A
	TR		0.58	3.6	A	TR	0.48	3.1	A	TR	0.64	3.9	A
Vesey Street	EB	LTR	1.05	96.3	F	LTR	0.75	49.4	D	LTR	1.01	84.7	F
	WB	L	1.14	120.0+	F*	L	0.80	54.4	D	L	0.91	71.8	E
	LTR		0.96	80.8	F	LTR	1.01	95.3	F	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>1.04</b>	<b>29.0</b>	<b>C</b>	<b>-</b>	<b>0.91</b>	<b>17.6</b>	<b>B</b>	<b>-</b>	<b>1.01</b>	<b>28.8</b>	<b>C</b>	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.96	93.1	F	L	0.43	53.3	D	L	0.69	59.8	E
	TR		1.04	54.3	D	TR	0.75	16.5	B	TR	0.70	15.5	B
	SB	L	1.20+	120.0+	F*	L	0.79	68.2	E	L	0.81	66.9	E
	TR		0.74	16.4	B	TR	0.63	14.3	B	TR	0.89	21.0	C
Liberty Street	EB	DefL	1.15	120.0+	F*	DefL	0.69	58.0	E	LTR	0.90	62.0	E
	TR		0.42	41.0	D	TR	0.43	42.5	D	-	-	-	-
	WB	LTR	0.28	37.1	D	LTR	0.60	49.3	D	DefL	0.43	43.7	D
	-		-	-	-	-	-	-	-	TR	0.36	40.6	D
<b>Overall Intersection</b>	<b>-</b>	<b>1.09</b>	<b>54.4</b>	<b>D</b>	<b>-</b>	<b>0.74</b>	<b>22.2</b>	<b>C</b>	<b>-</b>	<b>0.88</b>	<b>27.2</b>	<b>C</b>	
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.03	110.0	F	TR	0.96	101.8	F	TR	0.96	103.1	F
	SB	TR	0.96	74.9	E	TR	0.94	64.8	E	TR	1.02	86.9	F
Albany Street	EB	LTR	1.07	106.0	F	LTR	0.94	74.0	E	LTR	1.00	87.2	F
<b>Overall Intersection</b>	<b>-</b>	<b>1.04</b>	<b>97.4</b>	<b>F</b>	<b>-</b>	<b>0.96</b>	<b>84.0</b>	<b>F</b>	<b>-</b>	<b>1.01</b>	<b>93.7</b>	<b>F</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.11	120.0+	F*	T	1.08	120.0+	F*	TR	1.08	120.0+	F*
	R		1.06	111.1	F	R	0.96	52.3	D	R	1.06	104.1	F
	SB	T	1.12	120.0+	F*	T	1.08	107.2	F	T	1.03	103.0	F
Brooklyn Battery Tunnel	EB	R	0.10	12.7	B	R	0.09	20.3	C	R	0.03	12.0	B
	WB	L	1.05	120.0+	F*	L	0.84	120.0+	F*	L	0.93	120.0+	F*
	R		1.07	120.0+	F*	R	1.01	120.0+	F*	R	0.86	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.05</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.99</b>	<b>120.0+</b>	<b>F*</b>	
<b>WASHINGTON STREET CORRIDOR</b>													
<b>8 Washington Street at Vesey Street</b>													
Vesey Street	EB	LT	0.50	10.7	B	LT	0.22	8.2	A	LT	0.49	11.1	B
	WB	TR	0.28	8.4	A	TR	0.28	8.6	A	TR	0.32	9.0	A
<b>Overall Intersection</b>	<b>-</b>	<b>0.31</b>	<b>9.7</b>	<b>A</b>	<b>-</b>	<b>0.18</b>	<b>8.4</b>	<b>A</b>	<b>-</b>	<b>0.31</b>	<b>10.0</b>	<b>B</b>	
<b>9 Washington Street at Liberty Street</b>													
Washington Street	NB	R	0.00	20.7	C	R	0.06	21.4	C	R	0.13	22.3	C
Liberty Street	EB	T	0.38	9.5	A	T	0.34	9.1	A	T	0.34	9.2	A
<b>Overall Intersection</b>	<b>-</b>	<b>0.25</b>	<b>9.5</b>	<b>A</b>	<b>-</b>	<b>0.24</b>	<b>9.6</b>	<b>A</b>	<b>-</b>	<b>0.27</b>	<b>10.1</b>	<b>B</b>	

**TABLE E.2-11  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
			Delay				Delay				Delay		
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.54	24.4	C	LTR	0.54	24.5	C	LTR	0.53	24.3	C
Chambers Street	EB	TR	0.39	11.6	B	TR	0.27	10.4	B	TR	0.34	11.1	B
	WB	LT	0.67	17.3	B	LT	0.54	14.4	B	LT	0.76	21.7	C
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>17.6</b>	<b>B</b>	-	<b>0.54</b>	<b>17.1</b>	<b>B</b>	-	<b>0.67</b>	<b>19.3</b>	<b>B</b>
<b>14 Greenwich Street at Liberty Street</b>													
Liberty Street	EB	TR	0.51	11.3	B	TR	0.44	10.2	B	TR	0.46	10.5	B
<b>Overall Intersection</b>	-		<b>0.32</b>	<b>11.3</b>	<b>B</b>	-	<b>0.28</b>	<b>10.2</b>	<b>B</b>	-	<b>0.29</b>	<b>10.5</b>	<b>B</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.11	19.1	B	R	0.16	19.8	B	R	0.00	17.4	B
	SB	LT	0.82	42.5	D	LT	0.33	21.9	C	LT	0.35	22.2	C
Rector Street	EB	TR	0.17	10.5	B	TR	0.30	11.9	B	TR	0.29	11.7	B
<b>Overall Intersection</b>	-		<b>0.43</b>	<b>33.3</b>	<b>C</b>	-	<b>0.31</b>	<b>16.6</b>	<b>B</b>	-	<b>0.32</b>	<b>16.4</b>	<b>B</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.94	50.6	D	LTR	0.82	39.8	D	LTR	0.38	28.6	C
	R		0.85	53.0	D	R	0.66	39.0	D	R	0.98	120.0+	F*
Canal Street	EB	L	0.97	64.2	E	L	0.97	64.1	E	L	0.27	24.2	C
	T		0.99	51.7	D	T	0.92	40.1	D	T	0.91	37.0	D
	WB	T	0.96	63.2	E	T	0.91	55.8	E	T	0.22	23.4	C
	R		1.12	83.6	F	R	1.09	77.5	E	R	1.13	88.2	F
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>62.9</b>	<b>E</b>	-	<b>1.01</b>	<b>54.3</b>	<b>D</b>	-	<b>1.09</b>	<b>70.1</b>	<b>E</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.25	23.8	C	L	0.16	22.5	C	L	0.41	26.5	C
	T		0.94	46.1	D	T	1.06	88.1	F	T	1.07	103.6	F
	R		0.16	22.7	C	R	0.16	22.7	C	R	0.19	23.5	C
Canal Street	EB	TR	0.44	10.6	B	TR	0.44	10.6	B	TR	0.42	10.4	B
	WB	LT	1.03	94.6	F	LT	1.01	59.4	E	LT	1.06	119.1	F
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>59.9</b>	<b>E</b>	-	<b>0.65</b>	<b>61.0</b>	<b>E</b>	-	<b>0.64</b>	<b>88.1</b>	<b>F</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.96	34.3	C	LTR	0.67	16.1	B	LTR	0.78	18.9	B
Worth Street	EB	TR	0.19	20.4	C	TR	0.16	19.9	B	TR	0.22	20.7	C
	WB	LT	0.78	38.4	D	LT	0.59	28.9	C	LT	0.64	29.8	C
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>34.4</b>	<b>C</b>	-	<b>0.64</b>	<b>18.7</b>	<b>B</b>	-	<b>0.72</b>	<b>21.0</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.35	17.0	B	L	0.37	17.3	B	L	0.37	17.2	B
	TR		0.68	22.0	C	TR	0.52	18.5	B	TR	0.49	17.9	B
Chambers Street	EB	L	0.46	24.1	C	LTR	1.14	120.0+	F*	L	0.29	18.7	B
	TR		1.07	83.5	F	-	-	-	-	TR	0.81	32.4	C
	WB	LTR	1.04	71.4	E	LTR	0.66	23.2	C	LTR	1.06	77.9	E
<b>Overall Intersection</b>	-		<b>0.88</b>	<b>51.0</b>	<b>D</b>	-	<b>0.83</b>	<b>60.4</b>	<b>E</b>	-	<b>0.77</b>	<b>39.9</b>	<b>D</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.54	11.6	B	TR	0.42	10.3	B	TR	0.52	11.3	B
Barclay Street	WB	LT	0.88	38.4	D	LT	0.46	21.2	C	LT	0.95	47.6	D
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>22.0</b>	<b>C</b>	-	<b>0.44</b>	<b>13.6</b>	<b>B</b>	-	<b>0.71</b>	<b>26.9</b>	<b>C</b>
<b>13 West Broadway at Vesey Street</b>													
West Broadway	SB	L	1.16	120.0+	F*	L	0.60	21.8	C	L	1.20+	120.0+	F*
	R		0.75	28.3	C	R	0.81	32.0	C	R	0.93	45.9	D
Vesey Street	EB	T	0.36	15.9	B	T	0.29	15.2	B	T	0.32	15.4	B
	WB	T	0.15	13.9	B	T	0.14	13.8	B	T	0.17	14.1	B
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>69.4</b>	<b>E</b>	-	<b>0.55</b>	<b>21.0</b>	<b>C</b>	-	<b>0.76</b>	<b>61.2</b>	<b>E</b>

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 2009 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
			Delay				Delay				Delay		
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street<sup>(1)</sup></b>													
Church Street	NB	LTR	0.65	14.9	B	LTR	0.94	21.7	C	LTR	0.80	13.0	B
Worth Street	EB	LT	0.84	48.7	D	LT	0.51	26.1	C	LT	0.72	35.0	D
	WB	TR	0.76	34.7	C	TR	0.62	28.2	C	TR	0.65	29.3	C
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>23.1</b>	<b>C</b>	-	<b>0.82</b>	<b>22.9</b>	<b>C</b>	-	<b>0.77</b>	<b>18.0</b>	<b>B</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	0.89	29.3	C	LTR	1.01	48.9	D	LTR	0.84	26.5	C
Chambers Street	EB	LT	1.04	111.2	F	LT	1.01	109.3	F	LT	1.02	104.4	F
	WB	TR	1.05	99.8	F	TR	0.79	28.8	C	TR	0.86	34.0	C
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>64.3</b>	<b>E</b>	-	<b>1.01</b>	<b>55.6</b>	<b>E</b>	-	<b>0.93</b>	<b>46.6</b>	<b>D</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	LT	1.09	84.6	F	LT	0.80	19.4	B	LT	0.89	24.1	C
Barclay Street	WB	T	0.43	23.7	C	T	0.27	21.2	C	T	0.50	25.1	C
		R	0.99	111.6	F	R	1.01	80.6	F	R	1.01	82.4	F
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>82.4</b>	<b>F</b>	-	<b>0.89</b>	<b>30.9</b>	<b>C</b>	-	<b>0.94</b>	<b>33.2</b>	<b>C</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LTR	0.99	30.3	C	LT	1.08	68.8	E	LT	1.12	84.8	F
			-	-	-	R	0.55	12.7	B	R	0.64	15.4	B
Vesey Street	EB	LT	1.01	58.8	E	LT	0.61	25.9	C	LT	0.87	36.0	D
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>40.0</b>	<b>D</b>	-	<b>0.89</b>	<b>50.5</b>	<b>D</b>	-	<b>1.02</b>	<b>60.7</b>	<b>E</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	T	0.78	12.9	B	T	0.62	9.8	A	T	0.63	9.8	A
Fulton Street	WB	R	0.78	45.7	D	R	0.58	40.7	D	R	0.59	35.1	D
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>17.4</b>	<b>B</b>	-	<b>0.61</b>	<b>11.9</b>	<b>B</b>	-	<b>0.62</b>	<b>13.0</b>	<b>B</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.82	7.6	A	T	0.68	10.9	B	T	0.63	9.9	A
Dey Street	WB	R	0.27	29.5	C	R	0.27	29.5	C	R	0.26	29.1	C
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>8.3</b>	<b>A</b>	-	<b>0.56</b>	<b>11.6</b>	<b>B</b>	-	<b>0.53</b>	<b>10.6</b>	<b>B</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.71	11.3	B	T	0.55	9.1	A	T	0.53	8.8	A
Cortlandt Street	WB	R	1.10	105.2	F	R	0.94	60.4	E	R	0.98	68.7	E
<b>Overall Intersection</b>	-		<b>0.86</b>	<b>33.7</b>	<b>C</b>	-	<b>0.70</b>	<b>22.2</b>	<b>C</b>	-	<b>0.71</b>	<b>24.6</b>	<b>C</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.91	21.3	C	T	0.69	11.8	B	T	0.61	10.2	B
		R	0.31	8.2	A	R	0.21	7.2	A	R	0.18	6.8	A
Liberty Street	EB	LT	0.35	21.6	C	LT	0.33	21.3	C	LT	0.37	21.8	C
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>20.2</b>	<b>C</b>	-	<b>0.55</b>	<b>13.9</b>	<b>B</b>	-	<b>0.52</b>	<b>13.1</b>	<b>B</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.95	33.5	C	TR	0.63	11.0	B	TR	0.58	14.3	B
Rector Street	EB	LT	0.45	24.3	C	LT	0.35	22.4	C	LT	0.38	23.0	C
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>31.9</b>	<b>C</b>	-	<b>0.52</b>	<b>13.4</b>	<b>B</b>	-	<b>0.50</b>	<b>16.2</b>	<b>B</b>

**TABLE E.2-11  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2009 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	Mvt.	V/C	Control	LOS	
			Delay				Delay				Delay		
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.26	18.2	B	LTR	0.50	21.2	C	LTR	0.53	23.2	C
Canal Street	EB	TR	0.41	18.6	B	TR	0.40	18.5	B	TR	1.10	120.0+	F*
	WB	DefL	0.86	42.3	D	LT	0.66	12.6	B	DefL	1.07	120.0+	F*
	T		0.44	10.0	B	-	-	-	-	T	0.93	47.2	D
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>22.6</b>	<b>C</b>	-	<b>0.64</b>	<b>17.0</b>	<b>B</b>	-	<b>0.87</b>	<b>84.7</b>	<b>F</b>
<b>31 Broadway at Worth Street<sup>(1)</sup></b>													
Broadway	SB	LTR	0.60	13.0	B	LTR	0.74	16.0	B	LTR	0.71	15.1	B
Worth Street	EB	TR	0.45	19.4	B	TR	0.77	29.6	C	TR	0.63	23.5	C
	L		0.15	15.9	B	L	0.73	39.5	D	L	0.33	19.6	B
	T		0.55	21.2	C	T	0.46	19.4	B	T	0.55	21.3	C
<b>Overall Intersection</b>	-		<b>0.58</b>	<b>16.4</b>	<b>B</b>	-	<b>0.75</b>	<b>21.7</b>	<b>C</b>	-	<b>0.67</b>	<b>18.4</b>	<b>B</b>
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.39	10.7	B	LTR	0.58	12.8	B	LTR	0.55	12.4	B
Chambers Street	EB	TR	1.06	85.9	F	TR	0.72	26.1	C	TR	0.95	48.1	D
	WB	L	0.14	15.6	B	L	0.46	22.7	C	L	0.72	40.3	D
	LT		0.90	38.2	D	LT	0.63	22.0	C	LT	0.82	30.7	C
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>43.5</b>	<b>D</b>	-	<b>0.65</b>	<b>18.1</b>	<b>B</b>	-	<b>0.73</b>	<b>27.8</b>	<b>C</b>
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.70	25.9	C	L	0.74	27.9	C	L	0.88	36.4	D
Vesey Street	LT		0.61	19.9	B	LT	0.54	18.9	B	LT	0.55	18.9	B
	EB	L	0.91	63.6	E	L	0.56	36.8	D	L	0.99	81.6	F
	LTR		0.97	60.9	E	LTR	0.72	38.2	D	LTR	0.77	39.2	D
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>37.4</b>	<b>D</b>	-	<b>0.51</b>	<b>27.0</b>	<b>C</b>	-	<b>0.64</b>	<b>35.7</b>	<b>D</b>
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>													
Broadway	SB	TR	0.59	10.3	B	TR	0.51	9.8	A	TR	0.52	9.8	A
Fulton Street	WB	LT	0.46	26.9	C	LT	CLOSED			LT	0.34	25.7	C
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>13.7</b>	<b>B</b>	-	<b>0.33</b>	<b>9.8</b>	<b>A</b>	-	<b>0.46</b>	<b>12.7</b>	<b>B</b>
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	0.98	35.4	D	LTR	0.71	14.0	B	LTR	0.85	19.6	B
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>35.4</b>	<b>D</b>	-	<b>0.47</b>	<b>14.0</b>	<b>B</b>	-	<b>0.56</b>	<b>19.6</b>	<b>B</b>
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.86	19.9	B	TR	0.66	12.7	B	TR	0.67	12.7	B
Maiden Lane	WB	LT	1.01	77.9	E	LT	1.15	120.0+	F*	LT	1.02	79.1	E
<b>Overall Intersection</b>	-		<b>0.91</b>	<b>35.5</b>	<b>D</b>	-	<b>0.82</b>	<b>48.8</b>	<b>D</b>	-	<b>0.78</b>	<b>33.3</b>	<b>C</b>
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.72	8.4	A	LT	0.69	13.8	B	LT	0.66	13.2	B
Liberty Street	EB	TR	0.51	28.2	C	TR	0.65	37.5	D	TR	0.55	34.4	C
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>13.8</b>	<b>B</b>	-	<b>0.68</b>	<b>19.7</b>	<b>B</b>	-	<b>0.63</b>	<b>18.1</b>	<b>B</b>
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.52	10.0	A	T	0.47	9.5	A	T	0.48	9.6	A
Rector Street	EB	R	0.73	48.4	D	R	0.81	57.2	E	R	0.65	42.5	D
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>15.1</b>	<b>B</b>	-	<b>0.58</b>	<b>16.5</b>	<b>B</b>	-	<b>0.53</b>	<b>13.9</b>	<b>B</b>
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	LT	0.68	11.4	B	LT	0.57	9.3	A	LT	0.61	10.1	B
<b>Overall Intersection</b>	-		<b>0.47</b>	<b>11.4</b>	<b>B</b>	-	<b>0.39</b>	<b>9.3</b>	<b>A</b>	-	<b>0.41</b>	<b>10.1</b>	<b>B</b>
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street<sup>(3)</sup></b>													
Water Street	NB	LT	0.69	18.4	B	LT	0.49	14.8	B	LT	0.51	15.1	B
Fulton Street	SB	TR	0.60	16.7	B	TR	0.30	12.7	B	TR	0.26	12.3	B
	EB	LR	0.46	29.5	C	LR	0.35	27.2	C	LR	0.69	36.4	D
<b>Overall Intersection</b>	-		<b>0.54</b>	<b>18.5</b>	<b>B</b>	-	<b>0.40</b>	<b>15.3</b>	<b>B</b>	-	<b>0.51</b>	<b>18.6</b>	<b>B</b>



TABLE E.2-11  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 2009 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt. 9A) at Barclay Barclay Street	WB	R	0.55	38.1	E	R	0.60	31.0	D	R	0.60	33.9	D
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street Rector Street	EB	LTR	0.05	7.5	A	LTR	0.03	7.4	A	LTR	0.03	7.4	A
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street Greenwich Street	SB	R	0.04	11.5	B	R	0.19	12.5	B	R	0.06	11.8	B

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbtran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

**TABLE E.2-12**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	T	0.80	3.6	A	T	0.63	2.4	A	T	0.93	7.7	A
	SB	T	0.64	2.1	A	T	0.53	1.9	A	T	0.69	2.6	A
Canal Street	WB	L	0.34	46.1	D	L	0.59	53.2	D	L	0.17	38.6	D
	LR		0.51	52.7	D	LR	0.40	46.1	D	LR	0.19	39.8	D
	R		0.58	56.4	E	R	0.50	50.3	D	R	0.22	40.0	D
<b>Overall Intersection</b>	-	-	<b>0.76</b>	<b>5.1</b>	<b>A</b>	-	<b>0.62</b>	<b>5.2</b>	<b>A</b>	-	<b>0.76</b>	<b>6.0</b>	<b>A</b>
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.09	73.1	E	TR	0.82	16.1	B	TR	1.04	114.3	F
	R		0.54	13.6	B	R	0.56	13.9	B	R	0.31	10.0	B
	SB	L	1.04	83.5	F	L	1.00	75.8	E	L	0.87	48.0	D
	T		1.13	78.8	E	T	1.09	62.7	E	T	1.07	101.7	F
<b>Overall Intersection</b>	-	-	<b>1.07</b>	<b>73.4</b>	<b>E</b>	-	<b>0.90</b>	<b>41.1</b>	<b>D</b>	-	<b>0.96</b>	<b>102.6</b>	<b>F</b>
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.11	89.4	F	TR	0.96	29.4	C	TR	1.15	107.2	F
	SB	L	0.85	24.9	C	L	0.69	24.5	C	L	0.39	12.8	B
	TR		1.04	64.7	E	TR	0.74	17.8	B	TR	1.07	75.1	E
Chambers Street	EB	LTR	0.87	85.3	F	LTR	0.32	37.6	D	LTR	0.61	43.5	D
	WB	LT	0.94	77.6	E	LT	0.83	61.6	E	LT	1.10	119.6	F
	R		0.70	30.0	C	R	0.82	45.2	D	R	0.67	26.2	C
<b>Overall Intersection</b>	-	-	<b>1.06</b>	<b>71.6</b>	<b>E</b>	-	<b>1.05</b>	<b>27.4</b>	<b>C</b>	-	<b>1.08</b>	<b>83.3</b>	<b>F</b>
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.02	42.2	D	TR	0.75	12.8	B	TR	0.82	14.3	B
	SB	L	0.14	8.7	A	L	0.21	5.0	A	L	0.16	5.4	A
	TR		0.66	4.0	A	TR	0.56	3.4	A	TR	0.68	4.1	A
Vesey Street	EB	LTR	1.06	97.6	F	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*
	-	-	-	-	-	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*
	WB	L	1.20	120.0+	F*	L	0.88	62.9	E	L	1.00	93.0	F
	LTR		1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	-	-	<b>1.19</b>	<b>47.7</b>	<b>D</b>	-	<b>1.11</b>	<b>42.4</b>	<b>D</b>	-	<b>1.20+</b>	<b>75.7</b>	<b>E</b>
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	1.20+	120.0+	F*	L	0.65	60.2	E	L	0.81	67.1	E
	TR		1.06	64.2	E	TR	0.77	17.0	B	TR	0.72	15.9	B
	SB	L	1.20+	120.0+	F*	L	1.14	120.0+	F*	L	0.98	91.8	F
	TR		0.81	18.1	B	TR	0.69	15.3	B	TR	0.93	23.6	C
Liberty Street	EB	DefL	1.20+	120.0+	F*	DefL	1.20+	120.0+	F*	DefL	1.04	105.8	F
	TR		0.43	41.3	D	TR	0.43	42.6	D	TR	1.15	120.0+	F*
	WB	LTR	0.29	37.2	D	LTR	0.60	49.3	D	DefL	0.44	43.9	D
	-	-	-	-	-	-	-	-	-	TR	0.37	40.8	D
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>90.8</b>	<b>F</b>	-	<b>0.97</b>	<b>38.7</b>	<b>D</b>	-	<b>1.00</b>	<b>37.6</b>	<b>D</b>
<b>4b West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.08	120.0+	F*	TR	1.01	120.0+	F*	TR	1.00	120.0+	F*
	SB	TR	0.98	96.6	F	TR	0.96	84.3	F	TR	1.04	99.9	F
Albany Street	EB	LTR	1.20	120.0+	F*	LTR	1.14	120.0+	F*	LTR	1.20+	120.0+	F*
<b>Overall Intersection</b>	-	-	<b>1.12</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.05</b>	<b>117.3</b>	<b>F</b>	-	<b>1.10</b>	<b>120.0+</b>	<b>F*</b>
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	T	1.19	120.0+	F*	T	1.15	120.0+	F*	TR	1.14	120.0+	F*
	R		1.16	120.0+	F*	R	1.03	76.5	E	R	1.10	120.0+	F*
	SB	T	1.17	120.0+	F*	T	1.15	120.0+	F*	T	1.10	120.0+	F*
Brooklyn Battery Tunnel	EB	R	0.10	12.7	B	R	0.09	20.3	C	R	0.03	12.0	B
	WB	L	1.07	120.0+	F*	L	0.85	120.0+	F*	L	0.94	120.0+	F*
	R		1.13	120.0+	F*	R	1.05	120.0+	F*	R	0.90	120.0+	F*
<b>Overall Intersection</b>	-	-	<b>1.15</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.11</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.02</b>	<b>120.0+</b>	<b>F*</b>
<b>WASHINGTON STREET CORRIDOR</b>													
<b>8 Washington Street at Vesey Street</b>													
Vesey Street	EB	LT	0.55	11.4	B	LT	0.24	8.3	A	LT	0.53	11.8	B
	WB	TR	0.34	8.9	A	TR	0.35	9.2	A	TR	0.39	9.5	A
<b>Overall Intersection</b>	-	-	<b>0.35</b>	<b>10.2</b>	<b>B</b>	-	<b>0.22</b>	<b>8.8</b>	<b>A</b>	-	<b>0.33</b>	<b>10.6</b>	<b>B</b>
<b>9 Washington Street at Liberty Street</b>													
Washington Street	NB	R	0.00	20.7	C	R	0.07	21.5	C	R	0.13	22.3	C
Liberty Street	EB	T	0.48	10.6	B	T	0.42	9.9	A	T	0.39	9.6	A
<b>Overall Intersection</b>	-	-	<b>0.32</b>	<b>10.6</b>	<b>B</b>	-	<b>0.30</b>	<b>10.3</b>	<b>B</b>	-	<b>0.30</b>	<b>10.4</b>	<b>B</b>

**TABLE E.2-12**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>GREENWICH STREET CORRIDOR</b>													
<b>11 Greenwich Street at Chambers Street</b>													
Greenwich Street	SB	LTR	0.55	24.6	C	LTR	0.56	24.8	C	LTR	0.54	24.5	C
Chambers Street	EB	TR	0.42	11.9	B	TR	0.30	10.7	B	TR	0.37	11.4	B
	WB	LT	0.73	19.6	B	LT	0.59	15.5	B	LT	0.84	26.3	C
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>18.4</b>	<b>B</b>	-	<b>0.58</b>	<b>17.4</b>	<b>B</b>	-	<b>0.72</b>	<b>20.9</b>	<b>C</b>
<b>14 Greenwich Street at Liberty Street</b>													
Liberty Street	EB	TR	0.63	13.1	B	TR	0.53	11.4	B	TR	0.51	11.2	B
<b>Overall Intersection</b>	-		<b>0.39</b>	<b>13.1</b>	<b>B</b>	-	<b>0.33</b>	<b>11.4</b>	<b>B</b>	-	<b>0.32</b>	<b>11.2</b>	<b>B</b>
<b>15 Greenwich Street at Rector Street</b>													
Greenwich Street	NB	R	0.11	19.1	B	R	0.16	19.8	B	R	0.00	17.4	B
	SB	LT	0.93	57.5	E	LT	0.42	23.7	C	LT	0.39	22.9	C
Rector Street	EB	TR	0.28	11.7	B	TR	0.40	13.3	B	TR	0.40	13.2	B
<b>Overall Intersection</b>	-		<b>0.54</b>	<b>41.2</b>	<b>D</b>	-	<b>0.41</b>	<b>17.8</b>	<b>B</b>	-	<b>0.40</b>	<b>17.1</b>	<b>B</b>
<b>CANAL STREET CORRIDOR</b>													
<b>16 Canal Street at Hudson Street</b>													
Hudson Street	NB	LTR	0.95	53.2	D	LTR	0.83	40.6	D	LTR	0.39	28.7	C
	R		0.87	56.1	E	R	0.68	39.9	D	R	1.01	120.0+	F*
Canal Street	EB	L	1.02	79.5	E	L	1.04	82.3	F	L	0.34	25.2	C
	T		1.06	72.6	E	T	0.99	55.8	E	T	0.98	52.6	D
	WB	T	0.99	69.2	E	T	0.94	59.9	E	T	0.23	23.4	C
	R		1.18	110.2	F	R	1.18	114.5	F	R	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.12</b>	<b>76.8</b>	<b>E</b>	-	<b>1.09</b>	<b>69.1</b>	<b>E</b>	-	<b>1.16</b>	<b>87.9</b>	<b>F</b>
<b>17 Canal Street at Varick Street</b>													
Varick Street	SB	L	0.25	23.8	C	L	0.16	22.6	C	L	0.42	26.6	C
	T		0.95	48.1	D	T	1.07	95.0	F	T	1.09	113.6	F
	R		0.16	22.7	C	R	0.16	22.7	C	R	0.20	23.6	C
Canal Street	EB	TR	0.47	11.0	B	TR	0.47	11.0	B	TR	0.45	10.8	B
	WB	LT	1.08	116.7	F	LT	1.08	80.5	F	LT	1.13	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>70.4</b>	<b>E</b>	-	<b>0.68</b>	<b>71.1</b>	<b>E</b>	-	<b>0.67</b>	<b>103.6</b>	<b>F</b>
<b>WEST BROADWAY CORRIDOR</b>													
<b>18 West Broadway at Worth Street</b>													
West Broadway	SB	LTR	0.98	38.9	D	LTR	0.69	16.5	B	LTR	0.79	19.4	B
Worth Street	EB	TR	0.19	20.4	C	TR	0.17	20.0	C	TR	0.22	20.8	C
	WB	LT	0.79	39.4	D	LT	0.60	29.3	C	LT	0.65	30.1	C
<b>Overall Intersection</b>	-		<b>0.91</b>	<b>38.2</b>	<b>D</b>	-	<b>0.65</b>	<b>19.1</b>	<b>B</b>	-	<b>0.74</b>	<b>21.5</b>	<b>C</b>
<b>19 West Broadway at Chambers Street</b>													
West Broadway	SB	L	0.36	17.2	B	L	0.38	17.5	B	L	0.38	17.3	B
	TR		0.70	22.5	C	TR	0.53	18.8	B	TR	0.50	18.1	B
Chambers Street	EB	L	0.51	27.0	C	LTR	1.20+	120.0+	F*	L	0.31	19.5	B
	TR		1.15	109.8	F	-	-	-	-	TR	0.90	41.6	D
	WB	LTR	1.18	120.0+	F*	LTR	0.72	25.4	C	LTR	1.18	120.0+	F*
<b>Overall Intersection</b>	-		<b>0.94</b>	<b>72.6</b>	<b>E</b>	-	<b>0.89</b>	<b>76.6</b>	<b>E</b>	-	<b>0.84</b>	<b>56.3</b>	<b>E</b>
<b>20 West Broadway at Barclay Street</b>													
West Broadway	SB	TR	0.57	11.9	B	TR	0.43	10.4	B	TR	0.54	11.5	B
Barclay Street	WB	LT	0.90	41.2	D	LT	0.46	21.3	C	LT	0.97	51.7	D
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>23.1</b>	<b>C</b>	-	<b>0.45</b>	<b>13.7</b>	<b>B</b>	-	<b>0.73</b>	<b>28.7</b>	<b>C</b>
<b>13 West Broadway at Vesey Street</b>													
West Broadway	SB	L	1.20+	120.0+	F*	L	0.63	22.7	C	L	1.20+	120.0+	F*
	R		0.77	29.4	C	R	0.83	33.3	C	R	0.95	49.2	D
Vesey Street	EB	T	0.39	16.2	B	T	0.32	15.4	B	T	0.33	15.5	B
	WB	T	0.23	14.6	B	T	0.23	14.6	B	T	0.25	14.7	B
<b>Overall Intersection</b>	-		<b>0.80</b>	<b>77.1</b>	<b>E</b>	-	<b>0.57</b>	<b>21.0</b>	<b>C</b>	-	<b>0.79</b>	<b>64.7</b>	<b>E</b>

**TABLE E.2-12**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>th</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>CHURCH STREET CORRIDOR</b>													
<b>21 Church Street at Worth Street<sup>(1)</sup></b>													
Church Street	NB	LTR	0.70	16.0	B	LTR	1.01	40.1	D	LTR	0.85	14.9	B
Worth Street	EB	LT	0.87	52.4	D	LT	0.51	26.3	C	LT	0.73	35.8	D
	WB	TR	0.78	35.5	D	TR	0.63	28.5	C	TR	0.66	29.6	C
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>24.1</b>	<b>C</b>	-	<b>0.86</b>	<b>37.4</b>	<b>D</b>	-	<b>0.81</b>	<b>19.3</b>	<b>B</b>
<b>22 Church Street at Chambers Street</b>													
Church Street	NB	LTR	0.95	35.6	D	LTR	1.08	69.9	E	LTR	0.91	31.3	C
Chambers Street	EB	LT	1.10	120.0+	F*	LT	1.12	120.0+	F*	LT	1.11	120.0+	F*
	WB	TR	1.15	120.0+	F*	TR	0.86	34.0	C	TR	0.91	39.2	D
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>83.3</b>	<b>F</b>	-	<b>1.10</b>	<b>76.8</b>	<b>E</b>	-	<b>1.01</b>	<b>58.3</b>	<b>E</b>
<b>23 Church Street at Barclay Street</b>													
Church Street	NB	LT	1.15	111.6	F	LT	0.86	22.4	C	LT	0.95	31.1	C
Barclay Street	WB	T	0.44	23.9	C	T	0.28	21.3	C	T	0.52	25.4	C
		R	1.01	120.0+	F*	R	1.03	85.1	F	R	1.03	87.3	F
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>105.2</b>	<b>F</b>	-	<b>0.93</b>	<b>33.4</b>	<b>C</b>	-	<b>0.98</b>	<b>38.7</b>	<b>D</b>
<b>24 Church Street at Vesey Street</b>													
Church Street	NB	LTR	1.10	74.4	E	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*
	-	-	-	-	-	R	0.65	15.8	B	R	0.74	19.7	B
Vesey Street	EB	LT	1.08	78.8	E	LT	0.65	26.8	C	LT	0.90	38.9	D
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>75.8</b>	<b>E</b>	-	<b>1.03</b>	<b>99.8</b>	<b>F</b>	-	<b>1.13</b>	<b>101.2</b>	<b>F</b>
<b>25 Church Street at Fulton Street</b>													
Church Street	NB	T	0.88	16.9	B	T	0.73	11.8	B	T	0.73	11.7	B
Fulton Street	WB	R	0.80	46.8	D	R	0.59	41.3	D	R	0.61	35.7	D
<b>Overall Intersection</b>	-		<b>0.85</b>	<b>20.6</b>	<b>C</b>	-	<b>0.69</b>	<b>13.5</b>	<b>B</b>	-	<b>0.70</b>	<b>14.4</b>	<b>B</b>
<b>26 Church Street at Dey Street</b>													
Church Street	NB	T	0.92	12.9	B	T	0.80	14.0	B	T	0.74	11.9	B
Dey Street	WB	R	0.28	29.7	C	R	0.28	29.7	C	R	0.27	29.3	C
<b>Overall Intersection</b>	-		<b>0.74</b>	<b>13.4</b>	<b>B</b>	-	<b>0.65</b>	<b>14.5</b>	<b>B</b>	-	<b>0.61</b>	<b>12.5</b>	<b>B</b>
<b>27 Church Street at Cortlandt Street</b>													
Church Street	NB	T	0.73	11.8	B	T	0.57	9.4	A	T	0.55	9.0	A
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>100.0</b>	<b>F</b>	-	<b>0.93</b>	<b>95.9</b>	<b>F</b>	-	<b>0.92</b>	<b>97.8</b>	<b>F</b>
<b>28 Church Street at Liberty Street</b>													
Church Street	NB	T	0.93	23.6	C	T	0.72	12.4	B	T	0.63	10.5	B
		R	0.38	9.1	A	R	0.27	7.8	A	R	0.22	7.2	A
Liberty Street	EB	LT	0.47	23.1	C	LT	0.42	22.4	C	LT	0.43	22.6	C
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>22.1</b>	<b>C</b>	-	<b>0.60</b>	<b>15.0</b>	<b>B</b>	-	<b>0.55</b>	<b>13.9</b>	<b>B</b>
<b>29 Trinity Street at Rector Street</b>													
Trinity Street	NB	TR	0.96	36.0	D	TR	0.66	11.6	B	TR	0.58	14.5	B
Rector Street	EB	LT	0.59	27.6	C	LT	0.47	24.7	C	LT	0.53	25.9	C
<b>Overall Intersection</b>	-		<b>0.82</b>	<b>34.3</b>	<b>C</b>	-	<b>0.59</b>	<b>14.8</b>	<b>B</b>	-	<b>0.56</b>	<b>17.5</b>	<b>B</b>

**TABLE E.2-12  
WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
2015 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>th</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>BROADWAY CORRIDOR</b>													
<b>30 Broadway at Canal Street</b>													
Broadway	SB	LTR	0.32	18.8	B	LTR	0.56	22.0	C	LTR	0.57	23.9	C
Canal Street	EB	TR	0.48	19.5	B	TR	0.46	19.2	B	TR	1.15	120.0+	F*
	WB	DefL	0.94	57.6	E	LT	0.71	13.8	B	DefL	1.10	120.0+	F*
		T	0.47	10.5	B	-	-	-	-	T	1.00	62.5	E
<b>Overall Intersection</b>	<b>-</b>	<b>0.70</b>	<b>26.5</b>	<b>C</b>	<b>-</b>	<b>0.68</b>	<b>18.1</b>	<b>B</b>	<b>-</b>	<b>0.92</b>	<b>100.1</b>	<b>F</b>	
<b>31 Broadway at Worth Street<sup>(1)</sup></b>													
Broadway	SB	LTR	0.66	14.3	B	LTR	0.80	18.0	B	LTR	0.75	16.3	B
Worth Street	EB	TR	0.47	19.7	B	TR	0.79	30.8	C	TR	0.65	24.1	C
	WB	L	0.18	16.3	B	L	0.78	44.7	D	L	0.36	20.4	C
		T	0.56	21.4	C	T	0.47	19.5	B	T	0.56	21.5	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.62</b>	<b>17.0</b>	<b>B</b>	<b>-</b>	<b>0.80</b>	<b>23.4</b>	<b>C</b>	<b>-</b>	<b>0.71</b>	<b>19.2</b>	<b>B</b>	
<b>32 Broadway at Chambers Street</b>													
Broadway	SB	LTR	0.45	11.3	B	LTR	0.63	13.6	B	LTR	0.58	12.8	B
Chambers Street	EB	TR	1.11	103.7	F	TR	0.77	28.6	C	TR	1.02	66.9	E
	WB	L	0.15	16.0	B	L	0.50	24.1	C	L	0.79	49.0	D
		LT	0.94	44.0	D	LT	0.66	23.0	C	LT	0.85	32.7	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.75</b>	<b>50.2</b>	<b>D</b>	<b>-</b>	<b>0.70</b>	<b>19.2</b>	<b>B</b>	<b>-</b>	<b>0.78</b>	<b>33.9</b>	<b>C</b>	
<b>33 Broadway at Vesey Street / Ann Street</b>													
Broadway	SB	L	0.71	26.2	C	L	0.75	28.5	C	L	0.89	37.9	D
		LT	0.65	20.7	C	LT	0.58	19.5	B	LT	0.58	19.3	B
Vesey Street	EB	L	0.95	72.2	E	L	0.61	39.0	D	L	1.06	99.7	F
		LTR	1.08	93.6	F	LTR	0.84	45.1	D	LTR	0.83	43.3	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.59</b>	<b>48.4</b>	<b>D</b>	<b>-</b>	<b>0.56</b>	<b>29.5</b>	<b>C</b>	<b>-</b>	<b>0.68</b>	<b>39.6</b>	<b>D</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>													
Broadway	SB	TR	0.65	11.2	B	TR	0.56	10.5	B	TR	0.55	10.2	B
Fulton Street	WB	LT	0.52	28.1	C	LT	CLOSED			LT	0.37	26.2	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.61</b>	<b>14.7</b>	<b>B</b>	<b>-</b>	<b>0.38</b>	<b>10.5</b>	<b>B</b>	<b>-</b>	<b>0.49</b>	<b>13.1</b>	<b>B</b>	
<b>35 Broadway at Dey Street</b>													
Broadway	SB	LTR	1.09	71.4	E	LTR	0.79	16.6	B	LTR	0.91	24.5	C
<b>Overall Intersection</b>	<b>-</b>	<b>0.71</b>	<b>71.4</b>	<b>E</b>	<b>-</b>	<b>0.52</b>	<b>16.6</b>	<b>B</b>	<b>-</b>	<b>0.59</b>	<b>24.5</b>	<b>C</b>	
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>													
Broadway	SB	TR	0.96	32.0	C	TR	0.76	15.2	B	TR	0.77	15.7	B
Maiden Lane	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.20	120.0+	F*
<b>Overall Intersection</b>	<b>-</b>	<b>1.07</b>	<b>77.3</b>	<b>E</b>	<b>-</b>	<b>1.01</b>	<b>114.8</b>	<b>F</b>	<b>-</b>	<b>0.94</b>	<b>74.2</b>	<b>E</b>	
<b>37 Broadway at Liberty Street</b>													
Broadway	SB	LT	0.76	9.3	A	LT	0.73	14.7	B	LT	0.70	13.9	B
Liberty Street	EB	TR	0.66	31.4	C	TR	0.83	46.6	D	TR	0.65	36.9	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.73</b>	<b>16.5</b>	<b>B</b>	<b>-</b>	<b>0.76</b>	<b>24.4</b>	<b>C</b>	<b>-</b>	<b>0.68</b>	<b>20.0</b>	<b>B</b>	
<b>38 Broadway at Rector Street</b>													
Broadway	SB	T	0.53	10.1	B	T	0.48	9.6	A	T	0.49	9.7	A
Rector Street	EB	R	0.75	50.3	D	R	0.84	61.3	E	R	0.68	44.6	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.60</b>	<b>15.5</b>	<b>B</b>	<b>-</b>	<b>0.60</b>	<b>17.3</b>	<b>B</b>	<b>-</b>	<b>0.55</b>	<b>14.4</b>	<b>B</b>	
<b>39 Broadway at Exchange Place</b>													
Broadway	SB	LT	0.70	11.7	B	LT	0.58	9.5	A	LT	0.62	10.3	B
<b>Overall Intersection</b>	<b>-</b>	<b>0.48</b>	<b>11.7</b>	<b>B</b>	<b>-</b>	<b>0.40</b>	<b>9.5</b>	<b>A</b>	<b>-</b>	<b>0.43</b>	<b>10.3</b>	<b>B</b>	
<b>WATER STREET CORRIDOR</b>													
<b>40 Water Street at Fulton Street<sup>(3)</sup></b>													
Water Street	NB	LT	0.75	20.2	C	LT	0.55	15.8	B	LT	0.58	16.2	B
	SB	TR	0.73	19.6	B	TR	0.41	13.9	B	TR	0.33	13.0	B
Fulton Street	EB	LR	0.47	29.7	C	LR	0.36	27.3	C	LR	0.70	36.8	D
<b>Overall Intersection</b>	<b>-</b>	<b>0.57</b>	<b>20.6</b>	<b>C</b>	<b>-</b>	<b>0.43</b>	<b>16.0</b>	<b>B</b>	<b>-</b>	<b>0.55</b>	<b>18.9</b>	<b>B</b>	

**TABLE E.2-12**  
**WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN**  
**2015 NO ACTION CONDITION : PRE SEPTEMBER 11<sup>TH</sup> CONDITIONS SCENARIO WITH ROUTE 9A AT-GRADE**

INTERSECTION & APPROACH	AM (8:15 - 9:15AM)				Midday (12:00PM - 1:00PM)				PM (5:00 - 6:00PM)				
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED (FREE FLOW)												
7 West Street (NYS 9A) at Barclay													
Barclay Street	WB	R	0.60	44.9	E	R	0.67	38.4	E	R	0.67	41.7	E
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street													
Rector Street	EB	LTR	0.05	7.5	A	LTR	0.03	7.4	A	LTR	0.03	7.4	A
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street													
Greenwich Street	SB	R	0.05	11.5	B	R	0.19	12.5	B	R	0.06	11.9	B

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-13  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>															
West Street (NYS Rt. 9A)	NB	T	0.75	3.0	A	T	0.74	3.0	A	T	0.89	11.3	B	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]	
	SB	T	0.59	1.9	A	T	0.65	2.2	A	T	0.66	2.4	A		
Canal Street	WB	L	0.32	45.6	D	L	0.28	45.1	D	L	0.13	39.1	D		
	LR	L	0.50	52.5	D	LR	0.45	50.0	D	-	-	-	-		
	R	L	0.57	55.9	E	R	0.52	53.1	D	R	0.70	46.9	D		
<b>Overall Intersection</b>	-	-	<b>0.71</b>	<b>4.8</b>	<b>A</b>	-	<b>0.70</b>	<b>4.6</b>	<b>A</b>	-	<b>0.82</b>	<b>8.2</b>	<b>A</b>		
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.02	48.1	D	TR	1.02	46.7	D	TR	0.96	21.9	C		- Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street South further north to the intersection of Rt. 9A and Canal Street North. - Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street North
	R	L	0.51	12.9	B	R	0.44	11.8	B	R	0.41	9.1	A		
	SB	L	0.98	61.7	E	L	0.99	100.1	F	L	0.90	55.7	E		
	T	L	1.03	40.8	D	T	1.17	96.0	F	T	0.78	1.7	A		
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>44.3</b>	<b>D</b>	-	<b>1.01</b>	<b>72.2</b>	<b>E</b>	-	<b>0.94</b>	<b>16.9</b>	<b>B</b>		
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.02	56.3	E	TR	1.09	77.0	E	TR	1.02	50.3	D	- Partially mitigated. - Modify signal timing (increase cycle length from 120 s to 135 s).	
	SB	L	0.89	28.6	C	L	0.88	36.5	D	L	0.97	68.0	E		
	TR	L	0.92	33.7	C	TR	0.83	21.5	C	TR	0.77	17.7	B		
Chambers Street	EB	LTR	0.74	62.1	E	LTR	0.48	42.0	D	LTR	0.44	42.1	D		
	WB	LT	0.79	56.1	E	LT	0.83	62.5	E	LT	0.75	55.9	E		
	R	L	0.68	29.3	C	R	0.44	26.2	C	R	0.48	33.0	C		
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>44.5</b>	<b>D</b>	-	<b>1.13</b>	<b>50.9</b>	<b>D</b>	-	<b>1.12</b>	<b>39.5</b>	<b>D</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street<sup>(4)</sup></b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.03	117.3	F	-	-	-	-	- Meaningful TSM mitigation measures are not available.	
	TR	L	0.97	21.8	C	TR	1.20+	120.0+	F*	-	-	-	-		
	SB	L	0.12	7.4	A	L	1.20+	120.0+	F*	-	-	-	-		
	TR	L	0.58	3.6	A	TR	0.98	40.9	D	-	-	-	-		
Vesey Street	EB	LTR	1.05	96.3	F	L	0.66	43.2	D	-	-	-	-		
	-	-	-	-	-	TR	1.06	120.0+	F*	-	-	-	-		
	WB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*	-	-	-	-		
	LTR	L	0.96	80.8	F	TR	1.20+	120.0+	F*	-	-	-	-		
<b>Overall Intersection</b>	-	-	<b>1.04</b>	<b>29.0</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	-	-	-		
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.90	25.3	C	T	0.91	26.8	C	- Modify signal timing (shift 1 s of green time from the NB phase to the WB phase).	
Fulton Street	WB	-	-	-	-	R	0.74	46.8	D	R	0.72	44.6	D		
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.84</b>	<b>27.1</b>	<b>C</b>	-	<b>0.84</b>	<b>28.3</b>	<b>C</b>		
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.96	93.1	F	L	0.56	55.1	E	-	-	-	-	- Mitigation not required.	
	TR	L	1.04	54.3	D	TR	0.88	20.7	C	-	-	-	-		
	SB	L	1.20+	120.0+	F*	L	0.72	63.5	E	-	-	-	-		
	TR	L	0.74	16.4	B	TR	0.73	16.1	B	-	-	-	-		
Liberty Street	EB	DefL	1.15	120.0+	F*	LTR	0.53	41.2	D	-	-	-	-		
	TR	L	0.42	41.0	D	-	-	-	-	-	-	-	-		
	WB	LTR	0.28	37.1	D	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	-	-	<b>1.09</b>	<b>54.4</b>	<b>D</b>	-	<b>0.76</b>	<b>23.2</b>	<b>C</b>	-	-	-	-		

TABLE E.2-13  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.03	110.0	F	T	0.91	44.5	D	NB	T	0.87	28.1	C	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane. - Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane. - Modify signal timing (shift 4 s of green time from the EB/WB phase to the NB/SB phase).
	SB	TR	0.96	74.9	E	TR	1.00	103.1	F	SB	TR	0.95	66.9	E	
Albany Street	EB	LTR	1.07	106.0	F	LR	1.01	97.6	F	EB	L	0.30	36.5	D	
	WB	-	-	-	-	L	0.18	31.3	C	R	R	0.59	46.9	D	
	-	-	-	-	-	TR	0.09	30.1	C	WB	L	0.20	34.7	C	
	-	-	-	-	-	-	-	-	-	R	R	0.10	33.2	C	
<b>Overall Intersection</b>	-	-	<b>1.04</b>	<b>97.4</b>	<b>F</b>	-	<b>1.00</b>	<b>67.9</b>	<b>E</b>	-	<b>0.85</b>	<b>42.8</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.11	120.0+	F*	T	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	R	1.06	111.1	F	R	1.11	118.1	F							
	SB	T	1.12	120.0+	F*	TR	1.20	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.10	12.7	B	R	0.62	26.3	C						
	WB	L	1.05	120.0+	F*	L	1.06	120.0+	F*						
	R	1.07	120.0+	F*	R	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.50	10.7	B	LT	0.50	10.6	B						- Mitigation not required.
	WB	TR	0.28	8.4	A	TR	0.32	8.8	A						
<b>Overall Intersection</b>	-	-	<b>0.31</b>	<b>9.7</b>	<b>A</b>	-	<b>0.32</b>	<b>9.9</b>	<b>A</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.00	20.7	C	ANALYSIS NOT NEEDED. (FREE FLOW)								- Mitigation not required.	
Liberty Street	EB	T	0.38	9.5	A	-	-	-	-						
	-	-	<b>0.25</b>	<b>9.5</b>	<b>A</b>	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.54	24.4	C	LTR	0.27	15.2	B						- Mitigation not required.
Chambers Street	EB	TR	0.39	11.6	B	TR	0.51	18.3	B						
	WB	LT	0.67	17.3	B	LT	0.71	24.8	C						
<b>Overall Intersection</b>	-	-	<b>0.62</b>	<b>17.6</b>	<b>B</b>	-	<b>0.49</b>	<b>19.7</b>	<b>B</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.36	11.9	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.40	24.8	C						
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.38</b>	<b>16.6</b>	<b>B</b>						
<b>14 Greenwich Street at Liberty Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.61	24.2	C						- Mitigation not required.
	-	-	-	-	-	LT	0.42	13.2	B						
Liberty Street	EB	TR	0.51	11.3	B	TR	0.47	24.3	C						
<b>Overall Intersection</b>	-	-	<b>0.32</b>	<b>11.3</b>	<b>B</b>	-	<b>0.55</b>	<b>20.0</b>	<b>B</b>						
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.11	19.1	B	R	0.02	17.6	B	NB	R	0.01	17.6	B	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking. - Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane. [Measures reflect geometric improvements needed for the MD peak period, otherwise mitigation not needed.]
	SB	LT	0.82	42.5	D	LT	0.69	32.2	C	SB	L	0.31	21.4	C	
Rector Street	EB	TR	0.17	10.5	B	TR	0.38	13.0	B	T	T	0.30	21.0	C	
	-	-	-	-	-	-	-	-	-	EB	TR	0.38	13.0	B	
<b>Overall Intersection</b>	-	-	<b>0.43</b>	<b>33.3</b>	<b>C</b>	-	<b>0.51</b>	<b>23.7</b>	<b>C</b>	-	<b>0.35</b>	<b>17.6</b>	<b>B</b>		



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INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.94	50.6	D	LTR	0.85	42.2	D	LTR	0.64	33.8	C	- Restripe EB left-turn lane from 11 ft. to 12 ft. by reducing the median width. - Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane. - Modify signal timing (add 4 s to green time of EB/WB phase and 3 s to green time of EB/WB lead phase)
		R	0.85	53.0	D	R	0.55	35.9	D	R	0.66	42.2	D	
Canal Street	EB	L	0.97	64.2	E	L	1.10	88.8	F	L	1.03	63.7	E	
		T	0.99	51.7	D	LT	1.02	55.9	E	LT	0.98	45.3	D	
	WB	T	0.96	63.2	E	T	1.03	82.1	F	T	0.91	49.6	D	
		R	1.12	83.6	F	R	1.10	95.3	F	R	1.07	82.2	F	
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>62.9</b>	<b>E</b>	-	<b>1.04</b>	<b>66.6</b>	<b>E</b>	-	<b>0.97</b>	<b>51.1</b>	<b>D</b>	
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.25	23.8	C	L	0.20	23.1	C					- Mitigation not required.
		T	0.94	46.1	D	T	0.65	29.4	C					
		R	0.16	22.7	C	R	0.11	22.0	C					
Canal Street	EB	TR	0.44	10.6	B	TR	0.44	10.3	B					
	WB	LT	1.03	94.6	F	LT	1.03	71.5	E					
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>59.9</b>	<b>E</b>	-	<b>0.51</b>	<b>37.8</b>	<b>D</b>					
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.96	34.3	C	LTR	0.98	37.2	D	LTR	0.78	22.5	C	- Provide strict enforcement of "No Standing Anytime" regulation along the west side of West Broadway during the AM peak period to gain an additional SB through lane. - Modify signal timing (shift 8 s of green time from SB phase to EB/WB phase).
Worth Street	EB	TR	0.19	20.4	C	TR	0.22	21.0	C	TR	0.17	15.3	B	
	WB	LT	0.78	38.4	D	LT	1.01	81.1	F	LT	0.81	35.9	D	
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>34.4</b>	<b>C</b>	-	<b>0.99</b>	<b>44.2</b>	<b>D</b>	-	<b>0.79</b>	<b>24.5</b>	<b>C</b>	
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.35	17.0	B	L	0.38	17.4	B	L	0.39	18.2	B	- Modify signal timing (shift 1 s of green time from SB phase to EB/WB phase).
		TR	0.68	22.0	C	TR	0.62	20.5	C	TR	0.64	21.5	C	
Chambers Street	EB	L	0.46	24.1	C	L	0.39	21.6	C	L	0.38	20.4	C	
		TR	1.07	83.5	F	TR	1.08	87.3	F	TR	1.05	77.7	E	
	WB	LTR	1.04	71.4	E	LTR	1.07	84.0	F	LTR	1.02	66.5	E	
<b>Overall Intersection</b>	-		<b>0.88</b>	<b>51.0</b>	<b>D</b>	-	<b>0.85</b>	<b>53.8</b>	<b>D</b>	-	<b>0.85</b>	<b>47.2</b>	<b>D</b>	
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.54	11.6	B	TR	0.60	12.3	B					- Mitigation not required.
Barclay Street	WB	LT	0.88	38.4	D	LT	0.73	28.8	C					
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>22.0</b>	<b>C</b>	-	<b>0.66</b>	<b>17.4</b>	<b>B</b>					
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.52	40.5	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway). - SB Greenwich Street is STOP sign controlled. - Provide revised signal timing and phasing plan.
		-	-	-	-	R	0.63	49.7	D	-	-	-	-	
West Broadway	SB	L	1.16	120.0+	F*	L	0.57	15.3	B	L	0.78	25.4	C	
		R	0.75	28.3	C	TR	0.39	3.0	A	TR	0.46	7.8	A	
Vesey Street	EB	T	0.36	15.9	B	TR	1.20+	120.0+	F*	TR	0.65	20.3	C	
	WB	T	0.15	13.9	B	LT	0.36	32.6	C	LT	0.13	13.8	B	
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>69.4</b>	<b>E</b>	-	<b>0.80</b>	<b>115.1</b>	<b>F</b>	-	<b>0.71</b>	<b>18.4</b>	<b>B</b>	

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INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>CHURCH STREET CORRIDOR</b>														
<b>21 Church Street at Worth Street<sup>(1)</sup></b>														
Church Street	NB	LTR	0.65	14.9	B	LTR	1.20+	120.0+	F*	LTR	0.98	31.7	C	- Prohibit parking along the west side of NB Church Street to provide one additional through lane.
Worth Street	EB	LT	0.84	48.7	D	LT	0.94	57.8	E	LT	0.86	42.8	D	
	WB	TR	0.76	34.7	C	TR	0.92	48.9	D	TR	0.84	37.2	D	- Modify signal timing (shift 3 s of green time from NB phase to EB/WB phase).
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>23.1</b>	<b>C</b>	-	<b>1.14</b>	<b>111.4</b>	<b>F</b>	-	<b>0.93</b>	<b>34.5</b>	<b>C</b>	
<b>22 Church Street at Chambers Street</b>														
Church Street	NB	LTR	0.89	29.3	C	LTR	1.05	61.3	E	LTR	0.77	22.7	C	- Eliminate the truck loading/unloading zone along the west side of Church Street during the AM and PM peak periods to gain an additional NB through lane.
Chambers Street	EB	LT	1.04	111.2	F	LT	1.00	100.3	F	LT	1.00	100.3	F	
	WB	TR	1.05	99.8	F	TR	0.82	31.1	C	TR	0.82	31.1	C	
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>64.3</b>	<b>E</b>	-	<b>1.02</b>	<b>62.2</b>	<b>E</b>	-	<b>0.88</b>	<b>38.8</b>	<b>D</b>	
<b>23 Church Street at Barclay Street</b>														
Church Street	NB	LT	1.09	84.6	F	LT	0.99	38.4	D					- Mitigation not required.
Barclay Street	WB	T	0.43	23.7	C	T	0.43	24.0	C					
		R	0.99	111.6	F	R	0.82	45.3	D					
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>82.4</b>	<b>F</b>	-	<b>0.92</b>	<b>37.7</b>	<b>D</b>					
<i>General measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase;                  Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane;                  Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>														
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LTR	0.99	30.3	C	LT	1.20+	120.0+	F*	LTR	0.84	31.3	C	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition.
		-	-	-	-	R	1.04	97.7	F	-	-	-	-	
Vesey Street	EB	LT	1.01	58.8	E	LT	1.20+	120.0+	F*	LT	0.94	53.3	D	- Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>40.0</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.74</b>	<b>39.5</b>	<b>D</b>	
<b>25 Church Street at Fulton Street</b>														
Church Street	NB	T	0.78	12.9	B	LT	0.74	16.9	B	LT	0.80	19.7	B	- Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.
Fulton Street	WB	R	0.78	45.7	D	TR	1.20+	120.0+	F*	TR	0.68	44.8	D	
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>17.4</b>	<b>B</b>	-	<b>1.00</b>	<b>66.2</b>	<b>E</b>	-	<b>0.63</b>	<b>25.6</b>	<b>C</b>	
<b>26 Church Street at Dey Street</b>														
Church Street	NB	T	0.82	7.6	A	T	0.63	9.9	A	T	0.76	18.5	B	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]
Dey Street	WB	R	0.27	29.5	C	R	0.34	32.5	C	R	0.16	34.7	C	
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>8.3</b>	<b>A</b>	-	<b>0.55</b>	<b>10.7</b>	<b>B</b>	-	<b>0.46</b>	<b>19.1</b>	<b>B</b>	
<b>27 Church Street at Cortlandt Street</b>														
Church Street	NB	T	0.71	11.3	B	T	0.61	9.7	A	T	0.64	15.9	B	- Prohibit parking along the south side of Cortlandt Street.
Cortlandt Street	WB	R	1.10	105.2	F	R	0.96	74.8	E	R	0.35	37.0	D	- Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes. - [Measures reflect geometric improvements needed for MD and PM peak periods, otherwise not needed.]
<b>Overall Intersection</b>	-		<b>0.86</b>	<b>33.7</b>	<b>C</b>	-	<b>0.74</b>	<b>20.1</b>	<b>C</b>	-	<b>0.45</b>	<b>19.2</b>	<b>B</b>	
<b>28 Church Street at Liberty Street</b>														
Church Street	NB	T	0.91	21.3	C	T	0.70	12.1	B	T	0.81	26.0	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]
		R	0.31	8.2	A	R	0.19	7.2	A	R	0.13	13.3	B	
Liberty Street	EB	LT	0.35	21.6	C	LT	0.50	24.1	C	LT	0.43	35.8	D	
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>20.2</b>	<b>C</b>	-	<b>0.62</b>	<b>15.3</b>	<b>B</b>	-	<b>0.56</b>	<b>28.2</b>	<b>C</b>	
<b>29 Trinity Street at Rector Street</b>														
Trinity Street	NB	TR	0.95	33.5	C	TR	0.48	12.9	B					- Mitigation not required.
Rector Street	EB	LT	0.45	24.3	C	LT	0.58	26.9	C					
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>31.9</b>	<b>C</b>	-	<b>0.52</b>	<b>18.0</b>	<b>B</b>					

TABLE E.2-13  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.26	18.2	B	LTR	0.44	20.0	C					- Mitigation not required.
Canal Street	EB	TR	0.41	18.6	B	TR	0.47	19.5	B					
	WB	DefL	0.86	42.3	D	DefL	0.71	30.8	C					
		T	0.44	10.0	B	T	0.36	9.1	A					
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>22.6</b>	<b>C</b>	-	<b>0.67</b>	<b>20.2</b>	<b>C</b>					
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.60	13.0	B	LTR	0.74	48.0	D	LTR	0.62	33.6	C	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
Worth Street	EB	TR	0.45	19.4	B	TR	0.99	120.0+	F*	TR	0.84	43.3	D	- Modify signal timing (shift 7 s of green time from SB phase to EB/WB phase).
	WB	L	0.15	15.9	B	LT	0.76	40.7	D	LT	0.64	24.0	C	
		T	0.55	21.2	C	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-		<b>0.58</b>	<b>16.4</b>	<b>B</b>	-	<b>0.85</b>	<b>69.0</b>	<b>E</b>	-	<b>0.73</b>	<b>34.1</b>	<b>C</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.39	10.7	B	LTR	0.55	12.4	B					- Mitigation not required.
Chambers Street	EB	TR	1.06	85.9	F	TR	0.94	45.9	D					
	WB	L	0.14	15.6	B	L	0.52	26.0	C					
		LT	0.90	38.2	D	LT	0.71	25.0	C					
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>43.5</b>	<b>D</b>	-	<b>0.72</b>	<b>24.5</b>	<b>C</b>					
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.70	25.9	C	L	0.84	28.8	C	L	0.49	18.7	B	- Prohibit parking along the north side of EB Vesey Street.
		LT	0.61	19.9	B	LT	0.40	13.5	B	T	0.67	22.2	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
Vesey Street	EB	L	0.91	63.6	E	L	1.20+	120.0+	F*	L	0.83	60.2	E	
		LTR	0.97	60.9	E	LTR	1.20	120.0+	F*	LTR	0.85	51.3	D	- Modify signal timing (shift 5 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>37.4</b>	<b>D</b>	-	<b>0.61</b>	<b>74.0</b>	<b>E</b>	-	<b>0.47</b>	<b>31.9</b>	<b>C</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.59	10.3	B	TR	0.43	9.0	A					- Mitigation not required.
Fulton Street	WB	LT	0.46	26.9	C	LT	0.63	31.4	C					
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>13.7</b>	<b>B</b>	-	<b>0.49</b>	<b>16.4</b>	<b>B</b>					
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.98	35.4	D	LTR	0.65	12.8	B					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>35.4</b>	<b>D</b>	-	<b>0.42</b>	<b>12.8</b>	<b>B</b>					
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.86	19.9	B	TR	0.50	10.1	B					- Mitigation not required.
Maiden Lane	WB	LT	1.01	77.9	E	LT	0.55	31.3	C					
<b>Overall Intersection</b>	-		<b>0.91</b>	<b>35.5</b>	<b>D</b>	-	<b>0.52</b>	<b>15.6</b>	<b>B</b>					
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.72	8.4	A	LT	0.49	10.1	B					- Mitigation not required.
Liberty Street	EB	TR	0.51	28.2	C	TR	0.29	25.0	C					
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>13.8</b>	<b>B</b>	-	<b>0.43</b>	<b>14.3</b>	<b>B</b>					
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.52	10.0	A	T	0.36	7.5	A	T	0.40	10.7	B	- Modify signal timing (shift 6 s of green time from SB phase to EB phase).
Rector Street	EB	R	0.73	48.4	D	R	1.01	101.8	F	R	0.75	43.7	D	
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>15.1</b>	<b>B</b>	-	<b>0.55</b>	<b>39.9</b>	<b>D</b>	-	<b>0.52</b>	<b>22.0</b>	<b>C</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.68	11.4	B	T	0.40	7.7	A					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.47</b>	<b>11.4</b>	<b>B</b>	-	<b>0.28</b>	<b>7.7</b>	<b>A</b>					

TABLE E.2-13  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>WATER STREET CORRIDOR</b>															
<b>40 Water Street at Fulton Street<sup>(1)</sup></b>															
Water Street	NB	-	-	-	-	L	0.83	48.7	D	L	0.69	28.6	C	- Modify signal timing (shift 5 s of green time from EB phase to NB/SB phase).	
	LT	0.69	18.4	B	T	1.07	73.8	E	T	0.97	40.8	D			
	SB	TR	0.60	16.7	B	TR	0.58	16.5	B	TR	0.53	12.7	B		
Fulton Street	EB	LR	0.46	29.5	C	LR	0.45	29.3	C	LR	0.55	36.5	D		
<b>Overall Intersection</b>			<b>0.54</b>	<b>18.5</b>	<b>B</b>		<b>0.75</b>	<b>45.0</b>	<b>D</b>		<b>0.75</b>	<b>28.1</b>	<b>C</b>		
<b>UNIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>5 West Street (NYS Rt.9A) at Rector Street</b>	ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)										
<b>7 West Street (NYS Rt. 9A) at Barclay<sup>(4)</sup></b>	WB	R	0.55	38.1	E	R	0.51	33.4	D					- Mitigation not required.	
<b>WASHINGTON STREET CORRIDOR</b>															
<b>10 Washington Street at Rector Street</b>															
Washington Street	SB	-	-	-	-	LT	0.23	16.6	C					- Mitigation not required.	
Rector Street	EB	LTR	0.05	7.5	A	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>12 Greenwich Street at Barclay Street</b>															
Greenwich Street	SB	R	0.04	11.5	B	T	0.22	12.7	B					- Mitigation not required.	
						R	0.06	11.2	B						
Barclay Street	WB	-	-	-	-	LT	0.00	7.2	A						

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitrans Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-14  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.57	2.1	A	T	0.57	2.1	A	T	0.79	18.3	B	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]
	SB	T	0.48	1.7	A	T	0.48	1.7	A	T	0.52	3.5	A	
Canal Street	WB	L	0.57	52.2	D	L	0.44	47.2	D	L	0.17	34.3	C	
	LR		0.40	46.0	D	LR	0.81	67.0	E	-	-	-	-	
	R		0.49	50.0	D	R	0.61	54.9	D	R	0.84	44.7	D	
<b>Overall Intersection</b>	-	-	<b>0.57</b>	<b>5.2</b>	<b>A</b>	-	<b>0.62</b>	<b>7.2</b>	<b>A</b>	-	<b>0.81</b>	<b>13.6</b>	<b>B</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.74	14.2	B	TR	0.74	14.3	B	TR	0.86	24.6	C	- Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street South further north to the intersection of Rt. 9A and Canal Street North. - Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street North
	R		0.51	13.0	B	R	0.44	11.8	B	R	0.50	19.1	B	
	SB	L	0.93	53.9	D	L	0.98	60.9	E	L	0.50	20.3	C	
	T		0.99	18.5	B	T	1.20+	120.0+	F*	T	0.58	0.7	A	
<b>Overall Intersection</b>	-	-	<b>0.82</b>	<b>19.2</b>	<b>B</b>	-	<b>0.84</b>	<b>73.9</b>	<b>E</b>	-	<b>0.68</b>	<b>14.0</b>	<b>B</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.86	21.5	C	TR	0.90	24.4	C					- Mitigation not required.
	SB	L	0.75	25.7	C	L	0.80	19.2	B					
		TR	0.65	16.1	B	TR	0.80	20.2	C					
Chambers Street	EB	LTR	0.29	36.5	D	LTR	0.27	37.4	D					
	WB	LT	0.69	49.9	D	LT	0.66	49.2	D					
	R		0.81	44.0	D	R	0.52	28.3	C					
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>22.7</b>	<b>C</b>	-	<b>0.84</b>	<b>23.7</b>	<b>C</b>					
<b>3 West Street (NYS Rt. 9A) at Vesey Street<sup>(6)</sup></b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.79	72.1	E					- Meaningful TSM mitigation measures are not available.
	TR		0.69	12.0	B	TR	0.98	60.2	E					
	SB	L	0.19	4.5	A	L	1.20+	120.0+	F*					
		TR	0.48	3.1	A	TR	0.86	29.2	C					
Vesey Street	EB	LTR	0.75	49.4	D	L	0.40	31.9	C					
		-	-	-	-	TR	1.20+	120.0+	F*					
	WB	L	0.80	54.4	D	L	1.04	120.0+	F*					
	LTR		1.01	95.3	F	TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	-	<b>0.91</b>	<b>17.6</b>	<b>B</b>	-	<b>1.10</b>	<b>103.2</b>	<b>F</b>					
<b>4 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.78	25.7	C					- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.63	32.1	C					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.71</b>	<b>26.5</b>	<b>C</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.43	53.3	D	L	0.49	52.5	D					- Mitigation not required.
	TR		0.75	16.5	B	TR	0.75	16.5	B					
	SB	L	0.79	68.2	E	L	0.72	63.6	E					
		TR	0.63	14.3	B	TR	0.66	14.8	B					
Liberty Street	EB	Defl.	0.69	58.0	E	LTR	0.37	38.0	D					
		TR	0.43	42.5	D	-	-	-	-					
	WB	LTR	0.60	49.3	D	-	-	-	-					
<b>Overall Intersection</b>	-	-	<b>0.74</b>	<b>22.2</b>	<b>C</b>	-	<b>0.64</b>	<b>20.5</b>	<b>C</b>					

TABLE E.2-14  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.96	101.8	F	T	0.83	32.5	C	NB	T	0.77	20.1	C	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane. - Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane. - Modify signal timing (shift 6 s of green time from the EB/WB phase to the NB/SB phase).
	SB	TR	0.94	64.8	E	TR	1.02	110.1	F	SB	TR	0.94	62.3	E	
Albany Street	EB	LTR	0.94	74.0	E	LR	0.33	34.6	C	EB	L	0.10	34.4	C	
	WB	-	-	-	-	L	0.15	30.9	C	R	R	0.22	36.7	D	
	-	-	-	-	-	TR	0.38	37.2	D	WB	L	0.18	35.7	D	
	-	-	-	-	-	-	-	-	-	R	R	0.44	44.1	D	
<b>Overall Intersection</b>	-	-	<b>0.96</b>	<b>84.0</b>	<b>F</b>	-	<b>0.81</b>	<b>65.2</b>	<b>E</b>	-	-	<b>0.81</b>	<b>38.9</b>	<b>D</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.08	120.0+	F*	T	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	R		0.96	52.3	D	R	1.06	79.7	E						
	SB	T	1.08	107.2	F	TR	1.15	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.20	22.0	C						
	WB	L	0.84	120.0+	F*	L	1.01	120.0+	F*						
	R		1.01	120.0+	F*	R	1.10	120.0+	F*						
<b>Overall Intersection</b>	-	-	<b>1.05</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.22	8.2	A	LT	0.57	11.5	B						- Mitigation not required.
	WB	TR	0.28	8.6	A	TR	0.32	8.9	A						
<b>Overall Intersection</b>	-	-	<b>0.18</b>	<b>8.4</b>	<b>A</b>	-	<b>0.36</b>	<b>10.5</b>	<b>B</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.06	21.4	C	ANALYSIS NOT NEEDED. (FREE FLOW)								- Mitigation not required.	
Liberty Street	EB	T	0.34	9.1	A	-	-	-	-						
<b>Overall Intersection</b>	-	-	<b>0.24</b>	<b>9.6</b>	<b>A</b>	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.54	24.5	C	LTR	0.24	14.9	B						- Mitigation not required.
Chambers Street	EB	TR	0.27	10.4	B	TR	0.37	16.3	B						
	WB	LT	0.54	14.4	B	LT	0.68	24.2	C						
<b>Overall Intersection</b>	-	-	<b>0.54</b>	<b>17.1</b>	<b>B</b>	-	<b>0.46</b>	<b>18.9</b>	<b>B</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.48	13.5	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.42	25.3	C						
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.46</b>	<b>17.3</b>	<b>B</b>						
<b>14 Greenwich Street at Liberty Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.66	27.5	C						- Mitigation not required.
	-	-	-	-	-	LT	0.53	15.5	B						
Liberty Street	EB	TR	0.44	10.2	B	TR	0.44	23.7	C						
<b>Overall Intersection</b>	-	-	<b>0.28</b>	<b>10.2</b>	<b>B</b>	-	<b>0.57</b>	<b>21.0</b>	<b>C</b>						
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.16	19.8	B	R	0.08	18.5	B	NB	R	0.07	17.7	B	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking. - Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane. - Modify signal timing (shift 1 s of green time from EB phase to NB/SB phase).
	SB	LT	0.33	21.9	C	LT	1.20+	120.0+	F*	SB	L	0.33	21.8	C	
Rector Street	EB	TR	0.30	11.9	B	TR	0.80	44.1	D	T	T	0.80	44.6	D	
	-	-	-	-	-	-	-	-	-	EB	TR	0.65	27.7	C	
<b>Overall Intersection</b>	-	-	<b>0.31</b>	<b>16.6</b>	<b>B</b>	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	-	<b>0.71</b>	<b>33.4</b>	<b>C</b>	

TABLE E.2-14  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.82	39.8	D	LTR	0.64	34.0	C	LTR	0.51	32.3	C	- Partially mitigated.
		R	0.66	39.0	D	R	0.56	36.1	D	R	0.62	40.2	D	- Restripe EB left-turn lane from 11 ft. to 12 ft. by reducing the median width.
Canal Street	EB	L	0.97	64.1	E	L	1.09	80.9	F	L	1.00	52.2	D	- Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane.
		T	0.92	40.1	D	LT	0.90	34.9	C	T	0.85	26.8	C	
	WB	T	0.91	55.8	E	T	1.05	85.3	F	T	0.93	49.9	D	- Modify signal timing (add 4 s to green time of EB/WB phase and 4 s to green time of EB/WB lead phase).
		R	1.09	77.5	E	R	1.12	97.3	F	R	1.07	77.8	E	
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>54.3</b>	<b>D</b>	-	<b>0.99</b>	<b>64.3</b>	<b>E</b>	-	<b>0.96</b>	<b>46.8</b>	<b>D</b>	
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.16	22.5	C	L	0.33	25.2	C	L	0.40	30.4	C	- Modify signal timing (shift 5 s of green time from SB phase to EB/WB phase).
		T	1.06	88.1	F	T	0.56	27.5	C	T	0.68	34.0	C	
		R	0.16	22.7	C	R	0.37	26.1	C	R	0.44	31.8	C	
Canal Street	EB	TR	0.44	10.6	B	TR	0.30	8.8	A	TR	0.28	6.5	A	
	WB	LT	1.01	59.4	E	LT	1.14	94.6	F	LT	1.04	57.2	E	
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>61.0</b>	<b>E</b>	-	<b>0.94</b>	<b>50.0</b>	<b>D</b>		<b>0.94</b>	<b>36.8</b>	<b>D</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.67	16.1	B	LTR	0.60	14.5	B					- Mitigation not required.
Worth Street	EB	TR	0.16	19.9	B	TR	0.15	19.9	B					
	WB	LT	0.59	28.9	C	LT	0.61	30.0	C					
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>18.7</b>	<b>B</b>	-	<b>0.60</b>	<b>17.8</b>	<b>B</b>					
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.37	17.3	B	L	0.31	16.5	B	L	0.32	17.2	B	- Modify signal timing (shift 1 s of green time from SB phase to EB/WB phase).
		TR	0.52	18.5	B	TR	0.46	17.5	B	TR	0.47	18.2	B	
Chambers Street	EB	LTR	1.14	120.0+	F*	LTR	1.20+	120.0+	F*	L	1.19	120.0+	F*	
	WB	LTR	0.66	23.2	C	LTR	0.94	46.6	D	LTR	0.91	41.1	D	
<b>Overall Intersection</b>	-		<b>0.83</b>	<b>60.4</b>	<b>E</b>	-	<b>0.93</b>	<b>62.9</b>	<b>E</b>	-	<b>0.84</b>	<b>57.3</b>	<b>E</b>	
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.42	10.3	B	TR	0.58	12.1	B					- Mitigation not required.
Barclay Street	WB	LT	0.46	21.2	C	LT	0.44	21.0	C					
<b>Overall Intersection</b>	-		<b>0.44</b>	<b>13.6</b>	<b>B</b>	-	<b>0.52</b>	<b>14.1</b>	<b>B</b>					
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.49	39.8	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).
		-	-	-	-	R	0.28	37.1	D	-	-	-	-	
West Broadway	SB	L	0.60	21.8	C	L	0.36	12.3	B	L	0.52	18.6	B	- SB Greenwich Street is STOP sign controlled.
		R	0.81	32.0	C	TR	0.37	3.0	A	TR	0.45	7.7	A	- Provide revised signal timing and phasing plan.
Vesey Street	EB	T	0.29	15.2	B	TR	1.20+	120.0+	F*	TR	0.80	24.7	C	
	WB	T	0.14	13.8	B	LT	0.28	31.6	C	LT	0.10	13.6	B	
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>21.0</b>	<b>C</b>	-	<b>0.74</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.66</b>	<b>18.4</b>	<b>B</b>	

TABLE E.2-14  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)					Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control			LOS
			Delay	LOS				Delay	LOS			Delay	LOS		
<b>CHURCH STREET CORRIDOR</b>															
<b>21 Church Street at Worth Street<sup>(1)</sup></b>															
Church Street	NB	LTR	0.94	21.7	C	LTR	1.20+	120.0+	F*	LT	0.91	25.9	C	- Prohibit parking along the west side of NB Church Street to provide one additional through lane.	
Worth Street	EB	LT	0.51	26.1	C	LT	0.80	41.0	D	LT	0.78	38.2	D		
	WB	TR	0.62	28.2	C	TR	0.84	45.9	D	TR	0.81	42.2	D	- Modify signal timing (shift 1 s of green time from NB phase to EB/WB phase).	
<b>Overall Intersection</b>	-		<b>0.82</b>	<b>22.9</b>	<b>C</b>	-	<b>1.07</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.87</b>	<b>29.9</b>	<b>C</b>		
<b>22 Church Street at Chambers Street</b>															
Church Street	NB	LTR	1.01	48.9	D	LTR	1.02	52.1	D					- Mitigation not required.	
Chambers Street	EB	LT	1.01	109.3	F	LT	0.99	67.9	E						
	WB	TR	0.79	28.8	C	TR	0.73	25.7	C						
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>55.6</b>	<b>E</b>	-	<b>1.01</b>	<b>49.0</b>	<b>D</b>						
<b>23 Church Street at Barclay Street</b>															
Church Street	NB	LT	0.80	19.4	B	LT	0.76	18.0	B					- Mitigation not required.	
Barclay Street	WB	T	0.27	21.2	C	T	0.30	21.7	C						
		R	1.01	80.6	F	R	0.89	54.6	D						
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>30.9</b>	<b>C</b>	-	<b>0.81</b>	<b>24.2</b>	<b>C</b>						
														<i>General measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase;                  Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane;                  Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>	
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LT	1.08	68.8	E	LT	0.83	16.0	B	LTR	0.66	24.6	C	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition.	
		R	0.55	12.7	B	R	1.20+	120.0+	F*	-	-	-	-		
Vesey Street	EB	LT	0.61	25.9	C	LT	1.20+	120.0+	F*	LT	0.75	39.2	D	- Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.	
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>50.5</b>	<b>D</b>	-	<b>1.20+</b>	<b>116.6</b>	<b>F</b>	-	<b>0.57</b>	<b>29.9</b>	<b>C</b>		
<b>25 Church Street at Fulton Street</b>															
Church Street	NB	T	0.62	9.8	A	LT	0.79	18.7	B	LT	0.79	19.5	B	- Prohibit parking along the north and south sides of WB Fulton Street during the MD peak period.	
Fulton Street	WB	R	0.58	40.7	D	TR	0.90	61.8	E	TR	0.35	37.0	D	- Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>11.9</b>	<b>B</b>	-	<b>0.83</b>	<b>24.6</b>	<b>C</b>	-	<b>0.54</b>	<b>21.9</b>	<b>C</b>		
<b>26 Church Street at Dey Street</b>															
Church Street	NB	T	0.68	10.9	B	T	0.63	10.0	A	T	0.73	17.7	B	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
Dey Street	WB	R	0.27	29.5	C	R	0.57	42.8	D	R	0.26	36.6	D		
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>11.6</b>	<b>B</b>	-	<b>0.61</b>	<b>12.0</b>	<b>B</b>	-	<b>0.48</b>	<b>18.8</b>	<b>B</b>		
<b>27 Church Street at Cortlandt Street</b>															
Church Street	NB	T	0.55	9.1	A	T	0.44	8.0	A	T	0.47	13.2	B	- Prohibit parking along the south side of Cortlandt Street.	
Cortlandt Street	WB	R	0.94	60.4	E	R	1.20+	120.0+	F*	R	0.80	51.0	D	- Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes.	
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>22.2</b>	<b>C</b>	-	<b>1.13</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.48</b>	<b>27.4</b>	<b>C</b>		
<b>28 Church Street at Liberty Street</b>															
Church Street	NB	T	0.69	11.8	B	T	0.51	9.0	A	T	0.58	19.0	B	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
		R	0.21	7.2	A	R	0.27	8.1	A	R	0.18	13.9	B		
Liberty Street	EB	LT	0.33	21.3	C	LT	0.52	24.5	C	LT	0.47	36.4	D		
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>13.9</b>	<b>B</b>	-	<b>0.51</b>	<b>14.6</b>	<b>B</b>	-	<b>0.45</b>	<b>25.0</b>	<b>C</b>		
<b>29 Trinity Street at Rector Street</b>															
Trinity Street	NB	TR	0.63	11.0	B	TR	0.55	14.0	B					- Mitigation not required.	
Rector Street	EB	LT	0.35	22.4	C	LT	0.41	23.3	C						
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>13.4</b>	<b>B</b>	-	<b>0.49</b>	<b>16.6</b>	<b>B</b>						



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 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.50	21.2	C	LTR	0.57	22.4	C					- Mitigation not required.
Canal Street	EB	TR	0.40	18.5	B	TR	0.42	18.8	B					
	WB	LT	0.66	12.6	B	LT	0.66	12.9	B					
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>17.0</b>	<b>B</b>	-	<b>0.67</b>	<b>18.0</b>	<b>B</b>					
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.74	16.0	B	LTR	0.54	49.0	D	LTR	0.47	40.9	D	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
Worth Street	EB	TR	0.77	29.6	C	TR	0.92	118.3	F	TR	0.76	44.6	D	
	WB	L	0.73	39.5	D	LT	0.86	96.6	F	LT	0.58	29.4	C	- Modify signal timing (shift 8 s of green time from SB phase to EB/WB phase).
	T		0.46	19.4	B	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>21.7</b>	<b>C</b>	-	<b>0.71</b>	<b>84.1</b>	<b>F</b>	-	<b>0.62</b>	<b>39.5</b>	<b>D</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.58	12.8	B	LTR	0.41	10.9	B					- Mitigation not required.
Chambers Street	EB	TR	0.72	26.1	C	TR	0.64	23.0	C					
	WB	L	0.46	22.7	C	L	0.34	18.9	B					
	LT		0.63	22.0	C	LT	0.62	21.8	C					
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>18.1</b>	<b>B</b>	-	<b>0.51</b>	<b>17.0</b>	<b>B</b>					
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.74	27.9	C	L	0.59	18.1	B	L	0.41	22.6	C	- Prohibit parking along the north side of EB Vesey Street.
	LT		0.54	18.9	B	LT	0.40	13.5	B	T	0.79	31.5	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
Vesey Street	EB	L	0.56	36.8	D	L	1.20+	120.0+	F*	L	0.59	36.1	D	
	LTR		0.72	38.2	D	LTR	1.20+	120.0+	F*	LTR	0.73	37.4	D	- Modify signal timing (shift 11 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>27.0</b>	<b>C</b>	-	<b>0.49</b>	<b>95.4</b>	<b>F</b>	-	<b>0.49</b>	<b>31.8</b>	<b>C</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.51	9.8	A	TR	0.47	9.4	A					- Mitigation not required.
Fulton Street	WB	LT	CLOSED			LT	CLOSED							
<b>Overall Intersection</b>	-		<b>0.33</b>	<b>9.8</b>	<b>A</b>	-	<b>0.32</b>	<b>9.4</b>	<b>A</b>					
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.71	14.0	B	LTR	0.58	11.4	B					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.47</b>	<b>14.0</b>	<b>B</b>	-	<b>0.38</b>	<b>11.4</b>	<b>B</b>					
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.66	12.7	B	TR	0.53	10.5	B					- Mitigation not required.
Maiden Lane	WB	LT	1.15	120.0+	F*	LT	0.89	51.6	D					
<b>Overall Intersection</b>	-		<b>0.82</b>	<b>48.8</b>	<b>D</b>	-	<b>0.64</b>	<b>25.5</b>	<b>C</b>					
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.69	13.8	B	LT	0.40	9.0	A					- Mitigation not required.
Liberty Street	EB	TR	0.65	37.5	D	TR	0.38	26.3	C					
<b>Overall Intersection</b>	-		<b>0.68</b>	<b>19.7</b>	<b>B</b>	-	<b>0.40</b>	<b>14.9</b>	<b>B</b>					
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.47	9.5	A	T	0.56	10.1	B					- Mitigation not required.
Rector Street	EB	R	0.81	57.2	E	R	0.83	58.0	E					
<b>Overall Intersection</b>	-		<b>0.58</b>	<b>16.5</b>	<b>B</b>	-	<b>0.64</b>	<b>21.7</b>	<b>C</b>					
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.57	9.3	A	T	0.45	8.0	A					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.39</b>	<b>9.3</b>	<b>A</b>	-	<b>0.31</b>	<b>8.0</b>	<b>A</b>					

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INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>WATER STREET CORRIDOR</b>													
40 Water Street at Fulton Street <sup>(3)</sup>													
Water Street	NB	LT	0.49	14.8	B	L	0.49	20.7	C				- Mitigation not required.
			-	-	-	T	0.88	31.4	C				
	SB	TR	0.30	12.7	B	TR	0.51	15.4	B				
Fulton Street	EB	LR	0.35	27.2	C	LR	0.48	30.1	C				
<b>Overall Intersection</b>	-		<b>0.40</b>	<b>15.3</b>	<b>B</b>	-	<b>0.65</b>	<b>24.4</b>	<b>C</b>				
<b>UNSIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)				ANALYSIS NOT NEEDED. (FREE FLOW)								
7 West Street (NYS Rt. 9A) at Barclay <sup>(4)</sup>	WB	R	0.60	31.0	D	R	0.49	25.4	D				- Mitigation not required.
<b>WASHINGTON STREET CORRIDOR</b>													
10 Washington Street at Rector Street													
Washington Street	SB	-	-	-	-	LT	0.13	13.1	B				- Mitigation not required.
Rector Street	EB	LTR	0.03	7.4	A	-	-	-	-				
<b>GREENWICH STREET CORRIDOR</b>													
12 Greenwich Street at Barclay Street													
Greenwich Street	SB	R	0.19	12.5	B	T	0.17	12.4	B				- Mitigation not required.
			-	-	-	R	0.25	13.0	B				
Barclay Street	WB	-	-	-	-	LT	0.00	7.2	A				

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.92	7.5	A	T	0.75	3.4	A	T	0.90	15.4	B	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]
	SB	T	0.65	2.4	A	T	0.74	3.1	A	T	0.75	3.2	A	
Canal Street	WB	L	0.16	38.5	D	L	0.23	40.5	D	L	0.11	36.5	D	
	LR		0.19	39.7	D	LR	0.36	43.2	D	-	-	-	-	
	R		0.22	40.0	D	R	0.41	45.3	D	R	0.61	38.7	D	
<b>Overall Intersection</b>	-	-	<b>0.76</b>	<b>5.9</b>	<b>A</b>	-	<b>0.67</b>	<b>4.8</b>	<b>A</b>	-	<b>0.79</b>	<b>9.9</b>	<b>A</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.04	105.1	F	TR	0.96	25.5	C	TR	0.96	25.5	C	- Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street South further north to the intersection of Rt. 9A and Canal Street North. - Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street North
	R		0.26	9.5	A	R	0.26	9.5	A	R	0.26	9.5	A	
	SB	L	0.79	40.0	D	L	1.00	70.3	E	L	0.62	30.2	C	
	T		1.03	78.2	E	T	1.12	75.7	E	TR	0.85	2.6	A	
<b>Overall Intersection</b>	-	-	<b>0.93</b>	<b>87.7</b>	<b>F</b>	-	<b>0.98</b>	<b>52.9</b>	<b>D</b>	-	<b>0.85</b>	<b>14.6</b>	<b>B</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.05	67.4	E	TR	0.95	29.2	C					- Mitigation not required.
	SB	L	0.38	11.3	B	L	0.69	11.9	B					
		TR	1.01	55.4	E	TR	1.04	56.5	E					
Chambers Street	EB	LTR	0.60	43.0	D	LTR	0.33	39.5	D					
	WB	LT	1.02	94.1	F	LT	0.96	88.9	F					
	R		0.66	25.8	C	R	0.74	36.1	D					
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>57.2</b>	<b>E</b>	-	<b>0.99</b>	<b>43.0</b>	<b>D</b>					
<b>3 West Street (NYS Rt. 9A) at Vesey Street<sup>(4)</sup></b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.80	73.8	E					- Meaningful TSM mitigation measures are not available.
	TR		0.77	13.2	B	TR	1.09	85.8	F					
	SB	L	0.15	4.9	A	L	1.20+	120.0+	F*					
		TR	0.64	3.9	A	TR	1.14	120.0+	F*					
Vesey Street	EB	LTR	1.01	84.7	F	L	0.35	30.4	C					
		-	-	-	-	TR	1.20+	120.0+	F*					
	WB	L	0.91	71.8	E	L	1.20+	120.0+	F*					
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-	-	<b>1.01</b>	<b>28.8</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.84	27.9	C					- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.69	36.1	D					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.77</b>	<b>29.0</b>	<b>C</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.69	59.8	E	L	0.64	59.0	E					- Mitigation not required.
	TR		0.70	15.5	B	TR	0.72	15.8	B					
	SB	L	0.81	66.9	E	L	0.66	61.5	E					
		TR	0.89	21.0	C	TR	0.96	31.7	C					
Liberty Street	EB	LTR	0.90	62.0	E	LTR	0.48	40.1	D					
	WB	DeFL	0.43	43.7	D	-	-	-	-					
		TR	0.36	40.6	D	-	-	-	-					
<b>Overall Intersection</b>	-	-	<b>0.88</b>	<b>27.2</b>	<b>C</b>	-	<b>0.78</b>	<b>28.0</b>	<b>C</b>					

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			LOS	
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.96	103.1	F	T	0.81	26.1	C	NB	T	0.76	17.6	B	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane.
	SB	TR	1.02	86.9	F	TR	1.08	111.1	F	SB	TR	1.01	82.9	F	
Albany Street	EB	LTR	1.00	87.2	F	LR	0.55	41.9	D	EB	L	0.08	33.4	C	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	WB	-	-	-	-	L	0.24	32.4	C	R	R	0.49	43.2	D	- Modify signal timing (shift 5 s of green time from the EB/WB phase to the NB/SB phase).
						TR	0.21	32.6	C	WB	L	0.28	36.9	D	
										R	R	0.24	36.9	D	
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>93.7</b>	<b>F</b>	-	<b>0.91</b>	<b>68.4</b>	<b>E</b>	-	<b>0.86</b>	<b>50.8</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	TR	1.08	120.0+	F*	TR	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
		R	1.06	104.1	F	R	1.07	107.3	F						
	SB	T	1.03	103.0	F	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B						
	WB	L	0.93	120.0+	F*	L	1.05	120.0+	F*						
		R	0.86	120.0+	F*	R	1.07	120.0+	F*						
<b>Overall Intersection</b>	-		<b>0.99</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.14</b>	<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.49	11.1	B	LT	0.54	11.0	B						- Mitigation not required.
	WB	TR	0.32	9.0	A	TR	0.37	9.2	A						
<b>Overall Intersection</b>	-		<b>0.31</b>	<b>10.0</b>	<b>B</b>	-	<b>0.34</b>	<b>10.2</b>	<b>B</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.13	22.3	C	ANALYSIS NOT NEEDED. (FREE FLOW)									- Mitigation not required.
Liberty Street	EB	T	0.34	9.2	A	-	-	-	-						
<b>Overall Intersection</b>	-		<b>0.27</b>	<b>10.1</b>	<b>B</b>	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.53	24.3	C	LTR	0.21	14.5	B						- Mitigation not required.
Chambers Street	EB	TR	0.34	11.1	B	TR	0.38	16.3	B						
	WB	LT	0.76	21.7	C	LT	0.82	30.0	C						
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>19.3</b>	<b>B</b>	-	<b>0.52</b>	<b>22.1</b>	<b>C</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.55	14.7	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.53	27.2	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.54</b>	<b>19.2</b>	<b>B</b>						
<b>14 Greenwich Street at Liberty Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.80	38.9	D						- Mitigation not required.
		-	-	-	-	LT	0.50	14.8	B						
Liberty Street	EB	TR	0.46	10.5	B	TR	0.44	23.6	C						
<b>Overall Intersection</b>	-		<b>0.29</b>	<b>10.5</b>	<b>B</b>	-	<b>0.66</b>	<b>23.3</b>	<b>C</b>						
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.00	17.4	B	R	0.08	18.5	B	NB	R	0.08	18.4	B	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking.
	SB	LT	0.35	22.2	C	LT	0.69	32.6	C	SB	L	0.39	23.6	C	- Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane.
Rector Street	EB	TR	0.29	11.7	B	TR	0.32	12.1	B	T	T	0.24	20.1	C	
										EB	TR	0.32	12.1	B	
<b>Overall Intersection</b>	-		<b>0.32</b>	<b>16.4</b>	<b>B</b>	-	<b>0.47</b>	<b>23.5</b>	<b>C</b>	-	<b>0.35</b>	<b>17.7</b>	<b>B</b>		[Measures reflect geometric improvements needed for the MD peak period, otherwise mitigation not needed.]

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.38	28.6	C	LTR	0.89	45.2	D	LTR	0.71	35.9	D	- Restripe EB left-turn lane from 11 ft. to 12 ft. by reducing the median width. - Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane. - Modify signal timing (add 4 s to green time of EB/WB phase and 4 s to green time of EB/WB lead phase).
		R	0.98	120.0+	F*	R	0.75	44.3	D	R	0.95	74.2	E	
Canal Street	EB	L	0.27	24.2	C	L	0.70	35.3	D	L	0.60	27.9	C	
		T	0.91	37.0	D	T	0.86	30.9	C	T	0.82	24.4	C	
	WB	T	0.22	23.4	C	T	0.51	28.4	C	T	0.45	24.2	C	
		R	1.13	88.2	F	R	1.18	110.5	F	R	1.12	87.1	F	
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>70.1</b>	<b>E</b>	-	<b>1.10</b>	<b>57.3</b>	<b>E</b>	-	<b>1.08</b>	<b>49.5</b>	<b>D</b>	
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.41	26.5	C	L	0.72	43.6	D	L	0.72	43.6	D	- Modify signal timing (shift 3 s of green time from EB/WB lead phase to EB/WB phase).
		T	1.07	103.6	F	T	0.48	26.2	C	T	0.48	26.2	C	
		R	0.19	23.5	C	R	0.11	22.0	C	R	0.11	22.0	C	
Canal Street	EB	TR	0.42	10.4	B	TR	0.30	8.9	A	TR	0.30	8.9	A	
	WB	LT	1.06	119.1	F	LT	1.16	120.0+	F*	LT	1.05	115.0	F	
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>88.1</b>	<b>F</b>	-	<b>0.44</b>	<b>88.8</b>	<b>F</b>	-	<b>0.44</b>	<b>65.5</b>	<b>E</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.78	18.9	B	LTR	0.65	15.7	B					- Mitigation not required.
Worth Street	EB	TR	0.22	20.7	C	TR	0.28	23.1	C					
	WB	LT	0.64	29.8	C	LT	0.85	43.2	D					
<b>Overall Intersection</b>	-		<b>0.72</b>	<b>21.0</b>	<b>C</b>	-	<b>0.73</b>	<b>23.6</b>	<b>C</b>					
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.37	17.2	B	L	0.26	15.6	B	L	0.30	19.2	B	- Modify signal timing (shift 5 s of green time from SB phase to EB/WB phase).
		TR	0.49	17.9	B	TR	0.45	17.4	B	TR	0.52	21.5	C	
Chambers Street	EB	L	0.29	18.7	B	L	0.41	22.7	C	L	0.33	16.4	B	
		TR	0.81	32.4	C	TR	0.74	30.5	C	TR	0.66	22.7	C	
	WB	LTR	1.06	77.9	E	LTR	1.20+	120.0+	F*	LTR	1.04	68.5	E	
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>39.9</b>	<b>D</b>	-	<b>0.86</b>	<b>70.5</b>	<b>E</b>	-	<b>0.81</b>	<b>37.6</b>	<b>D</b>	
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.52	11.3	B	TR	0.67	13.5	B					- Mitigation not required.
Barclay Street	WB	LT	0.95	47.6	D	LT	0.89	39.5	D					
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>26.9</b>	<b>C</b>	-	<b>0.77</b>	<b>22.5</b>	<b>C</b>					
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.52	40.4	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway). - SB Greenwich Street is STOP sign controlled. - Provide revised signal timing and phasing plan.
		-	-	-	-	R	0.42	40.9	D	-	-	-	-	
West Broadway	SB	L	1.20+	120.0+	F*	L	0.61	16.0	B	L	0.83	27.8	C	
		R	0.93	45.9	D	TR	0.40	3.1	A	TR	0.48	8.0	A	
Vesey Street	EB	T	0.32	15.4	B	TR	1.20+	120.0+	F*	TR	0.85	27.2	C	
	WB	T	0.17	14.1	B	LT	0.35	32.3	C	LT	0.13	13.7	B	
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>61.2</b>	<b>E</b>	-	<b>0.92</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.84</b>	<b>22.2</b>	<b>C</b>	

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CHURCH STREET CORRIDOR</b>														
<b>21 Church Street at Worth Street<sup>(1)</sup></b>														
Church Street	NB	LTR	0.80	13.0	B	LTR	1.20+	120.0+	F*	LT	0.89	22.5	C	- Prohibit parking along the west side of NB Church Street to provide one additional through lane.
Worth Street	EB	LT	0.72	35.0	D	LT	0.59	30.6	C	LT	0.59	30.6	C	
	WB	TR	0.65	29.3	C	TR	0.83	40.0	D	TR	0.83	40.0	D	
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>18.0</b>	<b>B</b>	-	<b>1.07</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.87</b>	<b>26.6</b>	<b>C</b>	
<b>22 Church Street at Chambers Street</b>														
Church Street	NB	LTR	0.84	26.5	C	LTR	1.14	96.5	F	LTR	0.84	25.1	C	- Eliminate the truck loading/unloading zone along the west side of Church Street during the AM and PM peak periods to gain an additional NB through lane.
Chambers Street	EB	LT	1.02	104.4	F	LT	1.07	87.5	F	LT	1.07	87.5	F	
	WB	TR	0.86	34.0	C	TR	0.67	23.1	C	TR	0.67	23.1	C	
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>46.6</b>	<b>D</b>	-	<b>1.11</b>	<b>81.5</b>	<b>F</b>	-	<b>0.96</b>	<b>35.7</b>	<b>D</b>	
<b>23 Church Street at Barclay Street</b>														
Church Street	NB	LT	0.89	24.1	C	LT	0.86	21.9	C					- Mitigation not required.
Barclay Street	WB	T	0.50	25.1	C	T	0.53	26.0	C					
		R	1.01	82.4	F	R	0.79	42.5	D					
<b>Overall Intersection</b>	-		<b>0.94</b>	<b>33.2</b>	<b>C</b>	-	<b>0.83</b>	<b>25.1</b>	<b>C</b>					
<i>General measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase;                  Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane;                  Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>														
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LT	1.12	84.8	F	LT	0.95	27.4	C	LTR	0.84	38.8	D	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition. - Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.
		R	0.64	15.4	B	R	1.20+	120.0+	F*	-	-	-	-	
Vesey Street	EB	LT	0.87	36.0	D	LT	1.20+	120.0+	F*	LT	0.81	34.8	C	
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>60.7</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.67</b>	<b>37.1</b>	<b>D</b>	
<b>25 Church Street at Fulton Street</b>														
Church Street	NB	T	0.63	9.8	A	LT	0.63	14.6	B	LT	0.78	26.3	C	- Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.
Fulton Street	WB	R	0.59	35.1	D	TR	1.20+	120.0+	F*	TR	0.58	35.1	D	
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>13.0</b>	<b>B</b>	-	<b>0.96</b>	<b>83.7</b>	<b>F</b>	-	<b>0.59</b>	<b>28.8</b>	<b>C</b>	
<b>26 Church Street at Dey Street</b>														
Church Street	NB	T	0.63	9.9	A	T	0.54	8.7	A	T	0.65	15.9	B	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]
Dey Street	WB	R	0.26	29.1	C	R	0.33	32.3	C	R	0.15	34.6	C	
<b>Overall Intersection</b>	-		<b>0.53</b>	<b>10.6</b>	<b>B</b>	-	<b>0.48</b>	<b>9.5</b>	<b>A</b>	-	<b>0.41</b>	<b>16.6</b>	<b>B</b>	
<b>27 Church Street at Cortlandt Street</b>														
Church Street	NB	T	0.53	8.8	A	T	0.47	8.2	A	T	0.50	13.6	B	- Prohibit parking along the south side of Cortlandt Street. - Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes.
Cortlandt Street	WB	R	0.98	68.7	E	R	0.99	84.0	F	R	0.36	37.3	D	
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>24.6</b>	<b>C</b>	-	<b>0.68</b>	<b>22.6</b>	<b>C</b>	-	<b>0.39</b>	<b>18.1</b>	<b>B</b>	
<b>28 Church Street at Liberty Street</b>														
Church Street	NB	T	0.61	10.2	B	T	0.47	8.5	A	T	0.54	18.0	B	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]
		R	0.18	6.8	A	R	0.15	6.7	A	R	0.10	13.0	B	
Liberty Street	EB	LT	0.37	21.8	C	LT	0.59	26.1	C	LT	0.50	37.0	D	
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>13.1</b>	<b>B</b>	-	<b>0.52</b>	<b>15.3</b>	<b>B</b>	-	<b>0.43</b>	<b>25.1</b>	<b>C</b>	
<b>29 Trinity Street at Rector Street</b>														
Trinity Street	NB	TR	0.58	14.3	B	TR	0.40	11.8	B					- Mitigation not required.
Rector Street	EB	LT	0.38	23.0	C	LT	0.53	25.7	C					
<b>Overall Intersection</b>	-		<b>0.50</b>	<b>16.2</b>	<b>B</b>	-	<b>0.45</b>	<b>16.9</b>	<b>B</b>					

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			LOS
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.53	23.2	C	LTR	0.68	24.1	C					- Mitigation not required.
Canal Street	EB	TR	1.10	120.0+	F*	TR	0.92	39.5	D					
	WB	DeFL	1.07	120.0+	F*	DeFL	1.04	79.0	E					
		T	0.93	47.2	D	T	0.69	16.6	B					
<b>Overall Intersection</b>	-		<b>0.87</b>	<b>84.7</b>	<b>F</b>	-	<b>0.88</b>	<b>35.4</b>	<b>D</b>					
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.71	15.1	B	LTR	0.77	53.9	D	LTR	0.55	22.6	C	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
Worth Street	EB	TR	0.63	23.5	C	TR	0.77	31.5	C	TR	0.77	31.5	C	
	WB	L	0.33	19.6	B	LT	0.76	29.4	C	LT	0.76	29.4	C	
		T	0.55	21.3	C	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>18.4</b>	<b>B</b>	-	<b>0.77</b>	<b>44.2</b>	<b>D</b>	-	<b>0.65</b>	<b>25.8</b>	<b>C</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.55	12.4	B	LTR	0.55	12.4	B					- Mitigation not required.
Chambers Street	EB	TR	0.95	48.1	D	TR	0.87	36.0	D					
	WB	L	0.72	40.3	D	L	0.38	20.8	C					
		LT	0.82	30.7	C	LT	0.62	21.8	C					
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>27.8</b>	<b>C</b>	-	<b>0.70</b>	<b>20.9</b>	<b>C</b>					
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.88	36.4	D	L	0.94	41.2	D	L	0.62	24.4	C	- Prohibit parking along the north side of EB Vesey Street.
		LT	0.55	18.9	B	LT	0.37	13.2	B	T	0.69	26.3	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
Vesey Street	EB	L	0.99	81.6	F	L	1.20+	120.0+	F*	L	0.77	46.8	D	
		LTR	0.77	39.2	D	LTR	1.20+	120.0+	F*	LTR	0.69	37.1	D	- Modify signal timing (shift 9 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>	-		<b>0.64</b>	<b>35.7</b>	<b>D</b>	-	<b>0.70</b>	<b>94.5</b>	<b>F</b>	-	<b>0.46</b>	<b>31.0</b>	<b>C</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.52	9.8	A	TR	0.32	8.0	A					- Mitigation not required.
Fulton Street	WB	LT	0.34	25.7	C	LT	0.55	29.1	C					
<b>Overall Intersection</b>	-		<b>0.46</b>	<b>12.7</b>	<b>B</b>	-	<b>0.40</b>	<b>15.5</b>	<b>B</b>					
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.85	19.6	B	LTR	0.60	11.9	B					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>19.6</b>	<b>B</b>	-	<b>0.39</b>	<b>11.9</b>	<b>B</b>					
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.67	12.7	B	TR	0.42	9.2	A					- Mitigation not required.
Maiden Lane	WB	LT	1.02	79.1	E	LT	0.61	32.9	C					
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>33.3</b>	<b>C</b>	-	<b>0.48</b>	<b>16.8</b>	<b>B</b>					
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.66	13.2	B	LT	0.39	8.9	A					- Mitigation not required.
Liberty Street	EB	TR	0.55	34.4	C	TR	0.32	25.5	C					
<b>Overall Intersection</b>	-		<b>0.63</b>	<b>18.1</b>	<b>B</b>	-	<b>0.37</b>	<b>14.0</b>	<b>B</b>					
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.48	9.6	A	T	0.61	11.1	B	T	0.63	12.6	B	- Modify signal timing (shift 2 s of green time from SB phase to EB phase).
Rector Street	EB	R	0.65	42.5	D	R	0.77	50.9	D	R	0.70	42.0	D	
<b>Overall Intersection</b>	-		<b>0.53</b>	<b>13.9</b>	<b>B</b>	-	<b>0.66</b>	<b>20.6</b>	<b>C</b>		<b>0.65</b>	<b>19.6</b>	<b>B</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.61	10.1	B	T	0.55	9.4	A					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.41</b>	<b>10.1</b>	<b>B</b>	-	<b>0.38</b>	<b>9.4</b>	<b>A</b>					

TABLE E.2-15  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>WATER STREET CORRIDOR</b>														
<b>40 Water Street at Fulton Street<sup>(3)</sup></b>														
Water Street	NB	LT	0.51	15.1	B	L	0.44	18.3	B	L	0.38	14.3	B	- Modify signal timing (shift 4 s of green time from EB phase to NB/SB phase).
		-	-	-	-	T	1.06	69.8	E	T	0.98	43.2	D	
	SB	TR	0.26	12.3	B	TR	0.43	14.4	B	TR	0.39	11.7	B	
Fulton Street	EB	LR	0.69	36.4	D	LR	0.35	26.9	C	LR	0.42	31.2	C	
<b>Overall Intersection</b>	-		<b>0.51</b>	<b>18.6</b>	<b>B</b>	-	<b>0.72</b>	<b>45.4</b>	<b>D</b>	-	<b>0.72</b>	<b>30.5</b>	<b>C</b>	
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>5 West Street (NYS Rt.9A) at Rector Street</b>	ANALYSIS NOT NEEDED. (FREE FLOW)						ANALYSIS NOT NEEDED. (FREE FLOW)							
<b>7 West Street (NYS Rt. 9A) at Barclay<sup>(4)</sup></b>	WB	R	0.60	33.9	D	R	0.47	25.9	D					- Mitigation not required.
<b>WASHINGTON STREET CORRIDOR</b>														
<b>10 Washington Street at Rector Street</b>														
Washington Street	SB	-	-	-	-	LT	0.21	14.1	B					- Mitigation not required.
Rector Street	EB	LTR	0.03	7.4	A	-	-	-	-					
<b>GREENWICH STREET CORRIDOR</b>														
<b>12 Greenwich Street at Barclay Street</b>														
Greenwich Street	SB	R	0.06	11.8	B	T	0.23	14.3	B					- Mitigation not required.
		-	-	-	-	R	0.01	11.3	B					
Barclay Street	WB	-	-	-	-	LT	0.00	7.2	A					

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



TABLE E.2-16  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street (North)</b>														
West Street (NYS Rt. 9A)	NB	T	0.80	3.6	A	T	0.87	5.1	A	T	1.01	37.4	D	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]
	SB	T	0.64	2.1	A	T	0.78	3.1	A	T	0.78	3.1	A	
Canal Street (North)	WB	L	0.34	46.1	D	L	0.44	50.0	D	L	0.22	42.1	D	
	LR		0.51	52.7	D	LR	0.45	50.2	D	-	-	-	-	
	R		0.58	56.4	E	R	0.53	53.5	D	R	0.76	54.6	D	
<b>Overall Intersection</b>	-	-	<b>0.76</b>	<b>5.1</b>	<b>A</b>	-	<b>0.80</b>	<b>5.9</b>	<b>A</b>	-	<b>0.93</b>	<b>20.4</b>	<b>C</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street (South)</b>														
West Street (NYS Rt. 9A)	NB	TR	1.09	73.1	E	TR	1.19	114.1	F	TR	1.09	69.8	E	- Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street South further north to the intersection of Rt. 9A and Canal Street North. - Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street North
	R		0.54	13.6	B	R	0.51	13.1	B	R	0.47	8.8	A	
	SB	L	1.04	83.5	F	L	1.04	120.0+	F*	L	0.94	71.6	E	
	T		1.13	78.8	E	T	1.20+	120.0+	F*	T	0.92	4.6	A	
<b>Overall Intersection</b>	-	-	<b>1.07</b>	<b>73.4</b>	<b>E</b>	-	<b>1.13</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.04</b>	<b>38.9</b>	<b>D</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.11	89.4	F	TR	1.20+	120.0+	F*	TR	1.19	116.5	F	- Partially mitigated. - Modify signal timing (increase cycle length from 120 s to 135 s).
	SB	L	0.85	24.9	C	L	0.84	30.6	C	L	0.85	34.5	C	
	TR		1.04	64.7	E	TR	1.12	88.7	F	TR	1.03	53.6	D	
Chambers Street	EB	LTR	0.87	85.3	F	LTR	0.49	42.3	D	LTR	0.46	43.4	D	
	WB	LT	0.94	77.6	E	LT	0.99	91.7	F	LT	0.91	75.8	E	
	R		0.70	30.0	C	R	0.45	26.3	C	R	0.50	34.2	C	
<b>Overall Intersection</b>	-	-	<b>1.06</b>	<b>71.6</b>	<b>E</b>	-	<b>1.18</b>	<b>115.9</b>	<b>F</b>	-	<b>1.17</b>	<b>81.0</b>	<b>F</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street <sup>(4)</sup></b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.14	120.0+	F*					- Meaningful TSM mitigation measures are not available.
	TR		1.02	42.2	D	TR	1.20+	120.0+	F*					
	SB	L	0.14	8.7	A	L	1.20+	120.0+	F*					
	TR		0.66	4.0	A	TR	1.20+	120.0+	F*					
Vesey Street	EB	LTR	1.06	97.6	F	L	0.76	54.9	D					
	-		-	-	-	TR	1.08	120.0+	F*					
	WB	L	1.20	120.0+	F*	L	1.20+	120.0+	F*					
	LTR		1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	-	<b>1.19</b>	<b>47.7</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>4 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	1.03	48.0	D					- Meaningful TSM mitigation measures are not available.
Fulton Street	WB	-	-	-	-	R	0.84	56.0	E					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.96</b>	<b>48.7</b>	<b>D</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	1.20+	120.0+	F*	L	0.77	65.3	E	L	0.59	50.9	D	- Modify signal timing (shift 4 s of green time from NB/SB through-right phase to NB/SB exclusive left-turn phase; shift 1 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR		1.06	64.2	E	TR	0.99	32.8	C	TR	1.06	63.0	E	
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
	TR		0.81	18.1	B	TR	0.81	18.1	B	TR	0.86	23.3	C	
Liberty Street	EB	DeL	1.20+	120.0+	F*	LTR	0.67	45.2	D	LTR	0.70	46.9	D	
	TR		0.43	41.3	D	-	-	-	-	-	-	-	-	
	WB	LTR	0.29	37.2	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>90.8</b>	<b>F</b>	-	<b>1.06</b>	<b>78.5</b>	<b>E</b>	-	<b>1.06</b>	<b>72.6</b>	<b>E</b>	

TABLE E.2-16  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.08	120.0+	F*	T	1.16	120.0+	F*	NB	T	1.09	120.0+	F*	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane.
	SB	TR	0.98	96.6	F	TR	1.04	120.0+	F*	SB	TR	0.97	89.1	F	
Albany Street	EB	LTR	1.20	120.0+	F*	LR	1.20+	120.0+	F*	EB	L	0.32	37.4	D	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	WB	-	-	-	-	L	0.47	37.4	D	R	R	0.81	64.2	E	- Modify signal timing (shift 5 s of green time from the EB/WB phase to the NB/SB phase).
		-	-	-	-	TR	0.32	33.7	C	WB	L	0.56	44.7	D	
										R	R	0.37	38.5	D	
<b>Overall Intersection</b>			<b>1.12</b>	<b>120.0+</b>	<b>F*</b>			<b>120.0+</b>	<b>F*</b>			<b>1.02</b>	<b>113.0</b>	<b>F</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.19	120.0+	F*	T	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
		R	1.16	120.0+	F*	R	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	SB	T	1.17	120.0+	F*	TR	1.20+	120.0+	F*						
	EB	R	0.10	12.7	B	R	0.63	26.6	C						
	WB	L	1.07	120.0+	F*	L	1.08	120.0+	F*						
		R	1.13	120.0+	F*	R	1.20+	120.0+	F*						
<b>Overall Intersection</b>			<b>1.15</b>	<b>120.0+</b>	<b>F*</b>			<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.55	11.4	B	LT	0.69	13.5	B						- Mitigation not required.
	WB	TR	0.34	8.9	A	TR	0.50	10.6	B						
<b>Overall Intersection</b>			<b>0.35</b>	<b>10.2</b>	<b>B</b>			<b>12.3</b>	<b>B</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.00	20.7	C	ANALYSIS NOT NEEDED. (FREE FLOW)									- Mitigation not required.
Liberty Street	EB	T	0.48	10.6	B	-	-	-	-						
<b>Overall Intersection</b>			<b>0.32</b>	<b>10.6</b>	<b>B</b>										
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.55	24.6	C	LTR	0.30	15.5	B						- Mitigation not required.
Chambers Street	EB	TR	0.42	11.9	B	TR	0.54	18.9	B						
	WB	LT	0.73	19.6	B	LT	0.78	28.4	C						
<b>Overall Intersection</b>			<b>0.66</b>	<b>18.4</b>	<b>B</b>			<b>21.3</b>	<b>C</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.39	12.2	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.56	27.8	C						
<b>Overall Intersection</b>								<b>18.7</b>	<b>B</b>						
<b>14 Greenwich Street at Liberty Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.73	32.0	C	L	0.80	43.5	D		- Modify signal timing (shift 2.5 s of green time from SB phase to EB phase).
		-	-	-	-	LT	0.50	14.6	B	LT	0.53	16.6	B		
Liberty Street	EB	TR	0.63	13.1	B	TR	1.02	66.0	E	TR	0.94	44.9	D		
<b>Overall Intersection</b>			<b>0.39</b>	<b>13.1</b>	<b>B</b>			<b>47.5</b>	<b>D</b>			<b>36.8</b>	<b>D</b>		
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.11	19.1	B	R	0.02	17.6	B	NB	R	0.01	17.6	B	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking.
	SB	LT	0.93	57.5	E	LT	1.20+	120.0+	F*	SB	L	0.36	22.3	C	
Rector Street	EB	TR	0.28	11.7	B	TR	0.70	20.6	C	T	T	0.72	31.9	C	- Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane.
										EB	TR	0.70	20.6	C	
<b>Overall Intersection</b>			<b>0.54</b>	<b>41.2</b>	<b>D</b>			<b>102.3</b>	<b>F</b>			<b>25.3</b>	<b>C</b>		

TABLE E.2-16  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.95	53.2	D	LTR	0.86	43.0	D	LTR	0.68	35.5	D	- Restripe EB left-turn lane from 11 ft. to 14 ft. by reducing the median width.
		R	0.87	56.1	E	R	0.57	36.6	D	R	0.72	47.5	D	- Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane.
Canal Street	EB	L	1.02	79.5	E	L	1.20+	120.0+	F*	L	1.05	69.4	E	
		T	1.06	72.6	E	LT	1.08	75.4	E	LT	1.03	57.6	E	- Modify signal timing (add 4 s to green time of EB/WB phase and 4 s to green time of EB/WB lead phase).
	WB	T	0.99	69.2	E	T	1.13	115.0	F	T	0.99	67.4	E	
		R	1.18	110.2	F	R	1.20+	120.0+	F*	R	1.15	107.0	F	
<b>Overall Intersection</b>	<b>-</b>	<b>1.12</b>	<b>76.8</b>	<b>E</b>	<b>-</b>	<b>1.18</b>	<b>96.5</b>	<b>F</b>	<b>-</b>	<b>1.05</b>	<b>62.3</b>	<b>E</b>		
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.25	23.8	C	L	0.20	23.1	C	L	0.20	23.1	C	- Modify signal timing (shift 1 s of green time from EB lead phase to EB/WB phase).
		T	0.95	48.1	D	T	0.66	29.6	C	T	0.66	29.6	C	
		R	0.16	22.7	C	R	0.11	22.0	C	R	0.11	22.0	C	
Canal Street	EB	TR	0.47	11.0	B	TR	0.46	10.6	B	TR	0.46	10.6	B	
	WB	LT	1.08	116.7	F	LT	1.16	119.8	F	LT	1.13	103.6	F	
<b>Overall Intersection</b>	<b>-</b>	<b>0.64</b>	<b>70.4</b>	<b>E</b>	<b>-</b>	<b>0.53</b>	<b>56.0</b>	<b>E</b>	<b>-</b>	<b>0.53</b>	<b>50.2</b>	<b>D</b>		
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.98	38.9	D	LTR	1.02	46.4	D	LTR	0.87	28.2	C	- Provide strict enforcement of "No Standing /Anytime" regulation along the west side of West Broadway during the AM and PM peak periods to gain an additional SB through lane.
Worth Street	EB	TR	0.19	20.4	C	TR	0.22	21.0	C	TR	0.16	13.4	B	
	WB	LT	0.79	39.4	D	LT	1.18	120.0+	F*	LT	0.87	40.6	D	- Modify signal timing (shift 11 s of green time from SB phase to EB/WB phase).
<b>Overall Intersection</b>	<b>-</b>	<b>0.91</b>	<b>38.2</b>	<b>D</b>	<b>-</b>	<b>1.08</b>	<b>62.1</b>	<b>E</b>	<b>-</b>	<b>0.87</b>	<b>29.9</b>	<b>C</b>		
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.36	17.2	B	L	0.39	17.6	B	L	0.43	20.9	C	- Modify signal timing (shift 4 s of green time from SB phase to EB/WB phase).
		TR	0.70	22.5	C	TR	0.69	22.1	C	TR	0.77	27.3	C	
Chambers Street	EB	L	0.51	27.0	C	L	0.43	23.5	C	L	0.37	18.3	B	
		TR	1.15	109.8	F	TR	1.15	114.2	F	TR	1.05	74.1	E	
	WB	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.18	119.7	F	
<b>Overall Intersection</b>	<b>-</b>	<b>0.94</b>	<b>72.6</b>	<b>E</b>	<b>-</b>	<b>1.07</b>	<b>103.2</b>	<b>F</b>	<b>-</b>	<b>0.99</b>	<b>63.1</b>	<b>E</b>		
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.57	11.9	B	TR	0.66	13.2	B					- Mitigation not required.
Barclay Street	WB	LT	0.90	41.2	D	LT	0.81	33.0	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.71</b>	<b>23.1</b>	<b>C</b>	<b>-</b>	<b>0.73</b>	<b>19.5</b>	<b>B</b>						
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.50	39.9	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).
		-	-	-	-	R	0.86	72.6	E	-	-	-	-	
West Broadway	SB	L	1.20+	120.0+	F*	L	0.59	15.6	B	L	0.80	26.5	C	- SB Greenwich Street is STOP sign controlled.
		R	0.77	29.4	C	TR	0.45	3.4	A	TR	0.54	8.6	A	- Provide revised signal timing and phasing plan.
Vesey Street	EB	T	0.39	16.2	B	TR	1.20+	120.0+	F*	TR	0.74	22.5	C	
	WB	T	0.23	14.6	B	LT	0.69	39.0	D	LT	0.25	14.8	B	
<b>Overall Intersection</b>	<b>-</b>	<b>0.80</b>	<b>77.1</b>	<b>E</b>	<b>-</b>	<b>0.90</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.77</b>	<b>19.3</b>	<b>B</b>		

TABLE E.2-16  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>CHURCH STREET CORRIDOR</b>															
<b>21 Church Street at Worth Street <sup>(1)</sup></b>															
Church Street	NB	LTR	0.70	16.0	B	LTR	1.20+	120.0+	F*	NB	LT	0.94	22.9	C	- Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane. - Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane. - Modify signal timing (shift 2 s of green time from NB phase to EB/WB phase).
Worth Street	EB	LT	0.87	52.4	D	LT	0.96	60.9	E	R	0.34	8.9	A		
	WB	TR	0.78	35.5	D	TR	0.99	63.1	E	EB	LT	0.90	48.9	D	
										WB	T	0.61	27.5	C	
											R	0.63	30.5	C	
<b>Overall Intersection</b>	-		<b>0.77</b>	<b>24.1</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.92</b>	<b>26.8</b>	<b>C</b>		
<b>22 Church Street at Chambers Street</b>															
Church Street	NB	LTR	0.95	35.6	D	LTR	1.18	110.0	F	LTR	0.86	26.2	C	- Eliminate the truck loading/unloading zone along the west side of Church Street during the peak periods to gain an additional NB through lane. - Provide strict enforcement of "No Standing Anytime" regulation along the north and south sides of EB Chambers Street during the peak periods.	
Chambers Street	EB	LT	1.10	120.0+	F*	LT	1.08	120.0+	F*	LT	0.94	63.9	E		
	WB	TR	1.15	120.0+	F*	TR	0.93	43.1	D	TR	0.93	43.1	D		
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>83.3</b>	<b>F</b>	-	<b>1.13</b>	<b>99.4</b>	<b>F</b>	-	<b>0.90</b>	<b>36.6</b>	<b>D</b>		
<b>23 Church Street at Barclay Street</b>															
Church Street	NB	LT	1.15	111.6	F	LT	1.13	86.1	F					- Mitigation not required.	
Barclay Street	WB	T	0.44	23.9	C	T	0.45	24.2	C						
	R		1.01	120.0+	F*	R	0.83	46.6	D						
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>105.2</b>	<b>F</b>	-	<b>1.01</b>	<b>75.9</b>	<b>E</b>						
<i>General measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase; Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane; Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>															
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LTR	1.10	74.4	E	LT	1.20+	120.0+	F*	LTR	1.01	57.0	E	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition. - Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.	
	-	-	-	-	-	R	1.20+	120.0+	F*	-	-	-	-		
Vesey Street	EB	LT	1.08	78.8	E	LT	1.20+	120.0+	F*	LT	1.03	73.2	E		
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>75.8</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.84</b>	<b>62.7</b>	<b>E</b>		
<b>25 Church Street at Fulton Street</b>															
Church Street	NB	T	0.88	16.9	B	LT	0.98	34.4	C	LT	0.98	36.2	D	- Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
Fulton Street	WB	R	0.80	46.8	D	TR	1.20+	120.0+	F*	TR	0.73	46.0	D		
<b>Overall Intersection</b>	-		<b>0.85</b>	<b>20.6</b>	<b>C</b>	-	<b>1.19</b>	<b>84.2</b>	<b>F</b>	-	<b>0.77</b>	<b>38.2</b>	<b>D</b>		
<b>26 Church Street at Dey Street</b>															
Church Street	NB	T	0.92	12.9	B	T	0.83	14.9	B	T	0.94	29.1	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
Dey Street	WB	R	0.28	29.7	C	R	0.34	32.5	C	R	0.15	33.8	C		
<b>Overall Intersection</b>	-		<b>0.74</b>	<b>13.4</b>	<b>B</b>	-	<b>0.69</b>	<b>15.4</b>	<b>B</b>	-	<b>0.57</b>	<b>29.2</b>	<b>C</b>		
<b>27 Church Street at Cortlandt Street</b>															
Church Street	NB	T	0.73	11.8	B	T	0.74	11.9	B	T	0.84	27.9	C	- Prohibit parking along the south side of Cortlandt Street. - Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes.	
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	0.53	34.1	C		
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>100.0</b>	<b>F</b>	-	<b>1.18</b>	<b>109.3</b>	<b>F</b>	-	<b>0.60</b>	<b>29.4</b>	<b>C</b>		
<b>28 Church Street at Liberty Street</b>															
Church Street	NB	T	0.93	23.6	C	T	0.78	14.0	B	T	0.89	31.7	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
	R		0.38	9.1	A	R	0.27	8.1	A	R	0.18	13.9	B		
Liberty Street	EB	LT	0.47	23.1	C	LT	0.85	36.1	D	LT	0.74	43.4	D		
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>22.1</b>	<b>C</b>	-	<b>0.80</b>	<b>22.2</b>	<b>C</b>	-	<b>0.69</b>	<b>35.2</b>	<b>D</b>		
<b>29 Trinity Street at Rector Street</b>															
Trinity Street	NB	TR	0.96	36.0	D	TR	0.49	13.1	B	TR	0.52	15.2	B	- Modify signal timing (shift 3 s of green time from NB phase to EB phase).	
Rector Street	EB	LT	0.59	27.6	C	LT	1.00	67.1	E	LT	0.90	44.0	D		
<b>Overall Intersection</b>	-		<b>0.82</b>	<b>34.3</b>	<b>C</b>	-	<b>0.69</b>	<b>38.9</b>	<b>D</b>	-	<b>0.69</b>	<b>29.0</b>	<b>C</b>		

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 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.32	18.8	B	LTR	0.52	21.0	C					- Mitigation not required.
Canal Street	EB	TR	0.48	19.5	B	TR	0.56	21.0	C					
	WB	DefL	0.94	57.6	E	DefL	0.81	41.3	D					
	T		0.47	10.5	B	T	0.43	10.2	B					
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>26.5</b>	<b>C</b>	-	<b>0.74</b>	<b>22.7</b>	<b>C</b>					
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.66	14.3	B	LTR	0.85	93.3	F	LTR	0.69	43.0	D	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.
Worth Street	EB	TR	0.47	19.7	B	TR	1.06	120.0+	F*	TR	0.82	42.3	D	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
	WB	L	0.18	16.3	B	LT	0.84	58.5	E	L	0.34	15.7	B	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane.
	T		0.56	21.4	C	-	-	-	-	T	0.61	25.7	C	- Modify signal timing (shift 6 s of green time from SB phase to EB/WB phase).
<b>Overall Intersection</b>	-		<b>0.62</b>	<b>17.0</b>	<b>B</b>	-	<b>0.94</b>	<b>103.8</b>	<b>F</b>	-	<b>0.76</b>	<b>38.7</b>	<b>D</b>	
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.45	11.3	B	LTR	0.64	13.8	B					- Mitigation not required.
Chambers Street	EB	TR	1.11	103.7	F	TR	0.97	53.7	D					
	WB	L	0.15	16.0	B	L	0.59	29.8	C					
	LT		0.94	44.0	D	LT	0.77	27.6	C					
<b>Overall Intersection</b>	-		<b>0.75</b>	<b>50.2</b>	<b>D</b>	-	<b>0.79</b>	<b>27.2</b>	<b>C</b>					
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.71	26.2	C	L	0.85	30.1	C	L	0.53	21.0	C	- Prohibit parking along the north side of EB Vesey Street.
Vesey Street	LT		0.65	20.7	C	LT	0.49	14.4	B	T	0.86	31.7	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
	EB	L	0.95	72.2	E	L	1.20+	120.0+	F*	L	0.93	72.1	E	
	LTR		1.08	93.6	F	LTR	1.20+	120.0+	F*	LTR	0.99	70.3	E	- Modify signal timing (shift 7 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>48.4</b>	<b>D</b>	-	<b>0.68</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.58</b>	<b>43.2</b>	<b>D</b>	
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.65	11.2	B	TR	0.55	10.3	B					- Mitigation not required.
Fulton Street	WB	LT	0.52	28.1	C	LT	0.77	36.8	D					
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>14.7</b>	<b>B</b>	-	<b>0.62</b>	<b>18.6</b>	<b>B</b>					
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	1.09	71.4	E	LTR	0.81	17.9	B					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.71</b>	<b>71.4</b>	<b>E</b>	-	<b>0.53</b>	<b>17.9</b>	<b>B</b>					
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.96	32.0	C	TR	0.67	13.1	B					- Mitigation not required.
Maiden Lane	WB	LT	1.20+	120.0+	F*	LT	0.82	44.6	D					
<b>Overall Intersection</b>	-		<b>1.07</b>	<b>77.3</b>	<b>E</b>	-	<b>0.72</b>	<b>22.3</b>	<b>C</b>					
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.76	9.3	A	LT	0.58	11.4	B					- Mitigation not required.
Liberty Street	EB	TR	0.66	31.4	C	TR	0.48	27.5	C					
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>16.5</b>	<b>B</b>	-	<b>0.55</b>	<b>17.1</b>	<b>B</b>					
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.53	10.1	B	T	0.38	7.7	A	T	0.44	12.2	B	- Modify signal timing (shift 8 s of green time from SB phase to EB phase).
Rector Street	EB	R	0.75	50.3	D	R	1.08	120.0+	F*	R	0.73	40.0	D	
<b>Overall Intersection</b>	-		<b>0.60</b>	<b>15.5</b>	<b>B</b>	-	<b>0.58</b>	<b>47.2</b>	<b>D</b>	-	<b>0.55</b>	<b>21.8</b>	<b>C</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.70	11.7	B	T	0.42	7.9	A					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.48</b>	<b>11.7</b>	<b>B</b>	-	<b>0.29</b>	<b>7.9</b>	<b>A</b>					

TABLE E.2-16  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>WATER STREET CORRIDOR</b>														
40 Water Street at Fulton Street <sup>(3)</sup>														
Water Street	NB	LT	0.75	20.2	C	L	1.20+	120.0+	F*	LT	0.74	19.9	B	- Restripe the NB approach of Water Street to provide one through lane and one through-left lane.
			-	-	-	T	1.20+	120.0+	F*	-	-	-	-	
	SB	TR	0.73	19.6	B	TR	0.73	19.9	B	TR	0.73	19.9	B	
Fulton Street	EB	LR	0.47	29.7	C	LR	0.46	29.4	C	LR	0.46	29.4	C	
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>20.6</b>	<b>C</b>	-	<b>0.84</b>	<b>77.2</b>	<b>E</b>	-	<b>0.57</b>	<b>20.6</b>	<b>C</b>	
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED (FREE FLOW)					ANALYSIS NOT NEEDED (FREE FLOW)					- Mitigation not required.			
7 West Street (NYS Rt. 9A) at Barclay <sup>(4)</sup>	WB	R	0.60	44.9	E	R	0.70	54.4	F		- Mitigation not required. (For Barclay, a minor street, volume increment from Pre-9/11 No Build condition to Post-9/11 Build condition is less than 90 vehicles per hour and hence not impacted according to CEQR requirements).			
<b>WASHINGTON STREET CORRIDOR</b>														
10 Washington Street at Rector Street														
Washington Street	SB	-	-	-	-	LT	0.28	19.8	C		- Mitigation not required.			
Rector Street	EB	LTR	0.05	7.5	A	-	-	-	-					
<b>GREENWICH STREET CORRIDOR</b>														
12 Greenwich Street at Barclay Street														
Greenwich Street	SB	R	0.05	11.5	B	T	0.27	13.6	B		- Mitigation not required.			
			-	-	-	R	0.06	11.4	B					
	WB	-	-	-	-	LT	0.00	7.2	A					

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.63	2.4	A	T	0.71	3.0	A	T	0.97	30.1	C	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]
	SB	T	0.53	1.9	A	T	0.59	2.1	A	T	0.68	6.6	A	
Canal Street	WB	L	0.59	53.2	D	L	0.60	53.9	D	L	0.20	31.5	C	
	LR		0.40	46.1	D	LR	0.82	68.6	E	-	-	-	-	
	R		0.50	50.3	D	R	0.61	55.3	E	R	0.86	47.6	D	
<b>Overall Intersection</b>	-	-	<b>0.62</b>	<b>5.2</b>	<b>A</b>	-	<b>0.73</b>	<b>7.3</b>	<b>A</b>	-	<b>0.92</b>	<b>20.1</b>	<b>C</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.82	16.1	B	TR	0.93	22.0	C	TR	0.97	30.1	C	- Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street South further north to the intersection of Rt. 9A and Canal Street North. - Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street North
	R		0.56	13.9	B	R	0.55	13.9	B	R	0.57	16.5	B	
	SB	L	1.00	75.8	E	L	1.04	81.5	F	L	0.57	24.8	C	
	T		1.09	62.7	E	T	1.20+	120.0+	F*	T	0.70	1.1	A	
<b>Overall Intersection</b>	-	-	<b>0.90</b>	<b>41.1</b>	<b>D</b>	-	<b>0.98</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.80</b>	<b>16.5</b>	<b>B</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.96	29.4	C	TR	1.13	94.2	F	TR	1.04	57.5	E	- Partially mitigated. - Modify signal timing (increase cycle length from 120 s to 135 s).
	SB	L	0.69	24.5	C	L	0.67	11.2	B	L	0.74	20.8	C	
	TR		0.74	17.8	B	TR	1.06	64.3	E	TR	0.97	29.8	C	
Chambers Street	EB	LTR	0.32	37.6	D	LTR	0.31	38.7	D	LTR	0.27	39.5	D	
	WB	LT	0.83	61.6	E	LT	0.85	66.6	E	LT	0.78	61.0	E	
	R		0.82	45.2	D	R	0.52	28.5	C	R	0.57	36.7	D	
<b>Overall Intersection</b>	-	-	<b>1.05</b>	<b>27.4</b>	<b>C</b>	-	<b>1.03</b>	<b>73.2</b>	<b>E</b>	-	<b>0.96</b>	<b>43.2</b>	<b>D</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street<sup>(6)</sup></b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.92	89.6	F					- Meaningful TSM mitigation measures are not available.
	TR		0.75	12.8	B	TR	1.13	120.0+	F*					
	SB	L	0.21	5.0	A	L	1.20+	120.0+	F*					
	TR		0.56	3.4	A	TR	1.15	108.1	F					
Vesey Street	EB	Defl.	1.20+	120.0+	F*	L	0.47	37.1	D					
	TR		1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
	WB	L	0.88	62.9	E	L	1.20+	120.0+	F*					
	LTR		1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	-	<b>1.11</b>	<b>42.4</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.92	33.4	C					- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.69	35.0	C					
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.82</b>	<b>33.6</b>	<b>C</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.65	60.2	E	L	0.66	58.0	E	L	0.35	38.4	D	- Modify signal timing (shift 9 s of green time from NB/SB through-right phase to NB/SB exclusive left-turn phase; shift 5 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR		0.77	17.0	B	TR	0.85	19.6	B	TR	0.99	41.0	D	
	SB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*	L	1.09	109.9	F	
	TR		0.69	15.3	B	TR	0.74	16.5	B	TR	0.86	27.5	C	
Liberty Street	EB	Defl.	1.20+	120.0+	F*	LTR	0.55	41.8	D	LTR	0.66	48.9	D	
	TR		0.43	42.6	D	-	-	-	-	-	-	-	-	
	WB	LTR	0.60	49.3	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-	-	<b>0.97</b>	<b>38.7</b>	<b>D</b>	-	<b>0.94</b>	<b>74.4</b>	<b>E</b>	-	<b>0.94</b>	<b>43.4</b>	<b>D</b>	

TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.01	120.0+	F*	T	0.96	91.9	F	NB	T	0.93	75.4	E	- Partially mitigated.
	SB	TR	0.96	84.3	F	TR	1.07	120.0+	F*	SB	TR	1.04	120.0+	F*	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane.
Albany Street	EB	LTR	1.14	120.0+	F*	LR	0.59	43.7	D	EB	L	0.09	31.3	C	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	WB	-	-	-	-	L	0.46	36.7	D	WB	R	0.39	37.3	D	- Modify signal timing (shift 2 s of green time from the EB/WB phase to the NB/SB phase).
						TR	0.57	41.0	D		L	0.49	39.0	D	
											R	0.60	44.0	D	
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>117.3</b>	<b>F</b>	-	<b>0.92</b>	<b>103.9</b>	<b>F</b>			<b>0.91</b>	<b>90.6</b>	<b>F</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.15	120.0+	F*	T	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	R		1.03	76.5	E	R	1.15	117.2	F						
	SB	T	1.15	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.21	22.1	C						
	WB	L	0.85	120.0+	F*	L	1.03	120.0+	F*						
	R		1.05	120.0+	F*	R	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.11</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.24	8.2	A	LT	0.65	12.7	B						- Mitigation not required.
	WB	TR	0.35	9.2	A	TR	0.55	11.3	B						
<b>Overall Intersection</b>	-		<b>0.22</b>	<b>8.8</b>	<b>A</b>	-	<b>0.41</b>	<b>12.1</b>	<b>B</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.07	21.5	C	ANALYSIS NOT NEEDED. (FREE FLOW)									- Mitigation not required.
Liberty Street	EB	T	0.42	9.9	A	-	-	-	-						
<b>Overall Intersection</b>	-		<b>0.30</b>	<b>10.3</b>	<b>B</b>	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.56	24.8	C	LTR	0.26	15.1	B						- Mitigation not required.
Chambers Street	EB	TR	0.30	10.7	B	TR	0.40	16.8	B						
	WB	LT	0.59	15.5	B	LT	0.76	27.3	C						
<b>Overall Intersection</b>	-		<b>0.58</b>	<b>17.4</b>	<b>B</b>	-	<b>0.51</b>	<b>20.3</b>	<b>C</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.49	13.5	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.56	27.9	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.51</b>	<b>19.0</b>	<b>B</b>						
<b>14 Greenwich Street at Liberty Street</b>															
	SB	-	-	-	-	L	0.78	37.1	D						- Mitigation not required.
	-	-	-	-	-	LT	0.68	20.2	C						
Liberty Street	EB	TR	0.53	11.4	B	TR	0.90	41.7	D						
<b>Overall Intersection</b>	-		<b>0.33</b>	<b>11.4</b>	<b>B</b>	-	<b>0.83</b>	<b>34.5</b>	<b>C</b>						
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.16	19.8	B	R	0.08	18.5	B	NB	R	0.09	20.6	C	- Prohibit parking along the south side of EB Rector Street through daylighting for the MD peak period.
	SB	LT	0.42	23.7	C	LT	1.20+	120.0+	F*	SB	L	0.48	28.6	C	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking.
Rector Street	EB	TR	0.40	13.3	B	TR	1.20+	120.0+	F*		T	0.86	44.9	D	- Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane.
										EB	TR	0.90	39.9	D	
<b>Overall Intersection</b>	-		<b>0.41</b>	<b>17.8</b>	<b>B</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-		<b>0.88</b>	<b>40.1</b>	<b>D</b>	- Modify signal timing (shift 3 s of green time from NB/SB phase to EB phase).



TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.83	40.6	D	LTR	0.65	34.3	C	LTR	0.47	30.3	C	- Partially mitigated.
		R	0.68	39.9	D	R	0.60	37.5	D	R	0.68	42.0	D	- Restripe EB left-turn lane from 11 ft. to 14 ft. by reducing the median width.
Canal Street	EB	L	1.04	82.3	F	L	1.20+	120.0+	F*	L	1.12	90.4	F	- Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane.
		T	0.99	55.8	E	LT	0.97	49.6	D	LT	0.96	45.0	D	
	WB	T	0.94	59.9	E	T	1.15	119.6	F	T	1.04	79.1	E	- Modify signal timing (add 3 s to green time of EB/WB phase and 3 s to green time of EB/WB lead phase).
		R	1.18	114.5	F	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>69.1</b>	<b>E</b>	-	<b>1.16</b>	<b>103.7</b>	<b>F</b>	-	<b>1.09</b>	<b>75.0</b>	<b>E</b>	
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.16	22.6	C	L	0.34	25.3	C	L	0.51	37.9	D	- Modify signal timing (shift 10 s of green time from SB phase to EB/WB phase).
		T	1.07	95.0	F	T	0.57	27.6	C	T	0.86	48.6	D	
		R	0.16	22.7	C	R	0.37	26.2	C	R	0.56	40.6	D	
Canal Street	EB	TR	0.47	11.0	B	TR	0.32	9.0	A	TR	0.27	4.7	A	
	WB	LT	1.08	80.5	F	LT	1.20+	120.0+	F*	LT	1.11	77.4	E	
<b>Overall Intersection</b>	-		<b>0.68</b>	<b>71.1</b>	<b>E</b>	-	<b>1.05</b>	<b>82.3</b>	<b>F</b>	-	<b>1.05</b>	<b>49.9</b>	<b>D</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.69	16.5	B	LTR	0.63	15.1	B					- Mitigation not required.
Worth Street	EB	TR	0.17	20.0	C	TR	0.16	20.0	B					
	WB	LT	0.60	29.3	C	LT	0.70	34.6	C					
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>19.1</b>	<b>B</b>	-	<b>0.66</b>	<b>19.4</b>	<b>B</b>					
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.38	17.5	B	L	0.32	16.6	B	L	0.43	25.1	C	- Modify signal timing (shift 10 s of green time from SB phase to EB/WB phase).
		TR	0.53	18.8	B	TR	0.51	18.3	B	TR	0.67	28.4	C	
Chambers Street	EB	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.05	73.3	E	
	WB	LTR	0.72	25.4	C	LTR	1.11	95.9	F	LTR	0.84	26.1	C	
<b>Overall Intersection</b>	-		<b>0.89</b>	<b>76.6</b>	<b>E</b>	-	<b>0.93</b>	<b>93.1</b>	<b>F</b>	-	<b>0.91</b>	<b>39.8</b>	<b>D</b>	
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.43	10.4	B	TR	0.64	12.9	B					- Mitigation not required.
Barclay Street	WB	LT	0.46	21.3	C	LT	0.50	22.1	C					
<b>Overall Intersection</b>	-		<b>0.45</b>	<b>13.7</b>	<b>B</b>	-	<b>0.58</b>	<b>15.1</b>	<b>B</b>					
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.48	39.3	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).
		-	-	-	-	R	0.42	40.9	D	-	-	-	-	
West Broadway	SB	L	0.63	22.7	C	L	0.37	12.5	B	L	0.54	18.9	B	- SB Greenwich Street is STOP sign controlled.
		R	0.83	33.3	C	TR	0.41	3.2	A	TR	0.50	8.1	A	- Provide revised signal timing and phasing plan.
Vesey Street	EB	T	0.32	15.4	B	TR	1.20+	120.0+	F*	TR	0.89	29.9	C	
	WB	T	0.23	14.6	B	LT	0.62	37.0	D	LT	0.22	14.6	B	
<b>Overall Intersection</b>	-		<b>0.57</b>	<b>21.0</b>	<b>C</b>	-	<b>0.81</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.72</b>	<b>20.7</b>	<b>C</b>	

TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)					Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures				
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control			LOS			
			Delay	LOS				Delay	LOS			Delay	LOS					
<b>CHURCH STREET CORRIDOR</b>																		
<b>21 Church Street at Worth Street<sup>(1)</sup></b>																		
Church Street	NB	LTR	1.01	40.1	D	LTR	1.20+	120.0+	F*	NB	LT	0.90	23.2	C	- Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane. - Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane.			
Worth Street	EB	LT	0.51	26.3	C	LT	0.82	42.3	D	R	0.35	7.9	A					
	WB	TR	0.63	28.5	C	TR	0.91	56.4	E	EB	LT	0.82	42.3	D				
										WB	T	0.55	29.0	C				
															R	0.28	22.3	C
<b>Overall Intersection</b>	-		<b>0.86</b>	<b>37.4</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.87</b>	<b>24.9</b>	<b>C</b>					
<b>22 Church Street at Chambers Street</b>																		
Church Street	NB	LTR	1.08	69.9	E	LTR	1.18	112.0	F	LTR	0.96	38.3	D	- Eliminate the truck loading/unloading zone along the west side of Church Street during the peak periods to gain an additional NB through lane. - Provide strict enforcement of "No Standing Anytime" regulation along the north and south sides of EB Chambers Street during the peak periods.				
Chambers Street	EB	LT	1.12	120.0+	F*	LT	1.20+	120.0+	F*	LT	0.93	48.5	D					
	WB	TR	0.86	34.0	C	TR	0.81	30.0	C	TR	0.74	23.3	C					
<b>Overall Intersection</b>	-		<b>1.10</b>	<b>76.8</b>	<b>E</b>	-	<b>1.20+</b>	<b>106.4</b>	<b>F</b>	-	<b>0.95</b>	<b>36.7</b>	<b>D</b>	- Modify Signal Timing (shift 4 s of green time from NB phase to EB/WB phase).				
<b>23 Church Street at Barclay Street</b>																		
Church Street	NB	LT	0.86	22.4	C	LT	0.92	26.8	C					- Mitigation not required.				
Barclay Street	WB	T	0.28	21.3	C	T	0.30	21.8	C									
		R	1.03	85.1	F	R	0.90	56.5	E									
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>33.4</b>	<b>C</b>	-	<b>0.91</b>	<b>30.6</b>	<b>C</b>									
<i>General measures for Church Street corridor between Liberty Street and Vesey Street: Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase; Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane; Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>																		
<b>24 Church Street at Vesey Street</b>																		
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.17	103.4	F	LTR	0.87	33.3	C	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition. - Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.				
		R	0.65	15.8	B	R	1.20+	120.0+	F*	-	-	-	-					
Vesey Street	EB	LT	0.65	26.8	C	LT	1.20+	120.0+	F*	LT	0.86	43.6	D					
<b>Overall Intersection</b>	-		<b>1.03</b>	<b>99.8</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.71</b>	<b>36.8</b>	<b>D</b>					
<b>25 Church Street at Fulton Street</b>																		
Church Street	NB	T	0.73	11.8	B	LT	1.06	56.9	E	LT	0.96	38.5	D	- Prohibit parking along the north and south sides of WB Fulton Street during the MD peak period. - Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.				
Fulton Street	WB	R	0.59	41.3	D	TR	1.02	88.9	F	TR	0.44	40.2	D					
<b>Overall Intersection</b>	-		<b>0.69</b>	<b>13.5</b>	<b>B</b>	-	<b>1.04</b>	<b>60.9</b>	<b>E</b>	-	<b>0.67</b>	<b>38.7</b>	<b>D</b>					
<b>26 Church Street at Dey Street</b>																		
Church Street	NB	T	0.80	14.0	B	T	0.86	16.2	B	T	0.94	30.2	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]				
Dey Street	WB	R	0.28	29.7	C	R	0.58	43.7	D	R	0.26	35.8	D					
<b>Overall Intersection</b>	-		<b>0.65</b>	<b>14.5</b>	<b>B</b>	-	<b>0.78</b>	<b>17.4</b>	<b>B</b>	-	<b>0.60</b>	<b>30.5</b>	<b>C</b>					
<b>27 Church Street at Cortlandt Street</b>																		
Church Street	NB	T	0.57	9.4	A	T	0.57	9.3	A	T	0.67	22.9	C	- Prohibit parking along the south side of Cortlandt Street. - Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes.				
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	0.92	54.4	D					
<b>Overall Intersection</b>	-		<b>0.93</b>	<b>95.9</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.65</b>	<b>35.6</b>	<b>D</b>					
<b>28 Church Street at Liberty Street</b>																		
Church Street	NB	T	0.72	12.4	B	T	0.61	10.4	B	T	0.70	21.9	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]				
		R	0.27	7.8	A	R	0.35	9.2	A	R	0.23	14.5	B					
Liberty Street	EB	LT	0.42	22.4	C	LT	0.83	34.5	C	LT	0.74	43.3	D					
<b>Overall Intersection</b>	-		<b>0.60</b>	<b>15.0</b>	<b>B</b>	-	<b>0.70</b>	<b>20.7</b>	<b>C</b>	-	<b>0.60</b>	<b>30.5</b>	<b>C</b>					
<b>29 Trinity Street at Rector Street</b>																		
Trinity Street	NB	TR	0.66	11.6	B	TR	0.60	15.0	B					- Mitigation not required.				
Rector Street	EB	LT	0.47	24.7	C	LT	0.87	42.8	D									
<b>Overall Intersection</b>	-		<b>0.59</b>	<b>14.8</b>	<b>B</b>	-	<b>0.70</b>	<b>26.2</b>	<b>C</b>									

TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.56	22.0	C	LTR	0.67	24.2	C					- Mitigation not required.
Canal Street	EB	TR	0.46	19.2	B	TR	0.51	20.1	C					
	WB	LT	0.71	13.8	B	LT	0.75	15.5	B					
<b>Overall Intersection</b>	-		<b>0.68</b>	<b>18.1</b>	<b>B</b>	-	<b>0.75</b>	<b>20.1</b>	<b>C</b>					
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.80	18.0	B	LTR	0.67	78.2	E	LTR	0.53	44.2	D	- Partially Mitigated.
Worth Street	EB	TR	0.79	30.8	C	TR	1.02	120.0+	F*	TR	0.79	54.5	D	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.
	WB	L	0.78	44.7	D	LT	1.14	120.0+	F*	L	0.53	27.9	C	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
	T		0.47	19.5	B	-	-	-	-	T	0.37	22.7	C	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane.
<b>Overall Intersection</b>	-		<b>0.80</b>	<b>23.4</b>	<b>C</b>	-	<b>0.88</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.65</b>	<b>43.1</b>	<b>D</b>	- Modify signal timing (shift 4 s of green time from SB phase to EB/WB phase).
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.63	13.6	B	LTR	0.49	11.7	B					- Mitigation not required.
Chambers Street	EB	TR	0.77	28.6	C	TR	0.69	24.9	C					
	WB	L	0.50	24.1	C	L	0.39	20.3	C					
	LT		0.66	23.0	C	LT	0.66	23.1	C					
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>19.2</b>	<b>B</b>	-	<b>0.58</b>	<b>18.0</b>	<b>B</b>					
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.75	28.5	C	L	0.60	18.4	B	L	0.42	22.8	C	- Partially Mitigated.
	LT		0.58	19.5	B	LT	0.48	14.3	B	T	0.93	42.8	D	- Prohibit parking along the north side of EB Vesey Street.
Vesey Street	EB	L	0.61	39.0	D	L	1.20+	120.0+	F*	L	0.77	45.8	D	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
	LTR		0.84	45.1	D	LTR	1.20+	120.0+	F*	LTR	0.92	51.8	D	
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>29.5</b>	<b>C</b>	-	<b>0.55</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.59</b>	<b>42.0</b>	<b>D</b>	- Modify signal timing (shift 11 s of green time from SB phase to EB phase).
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.56	10.5	B	TR	0.58	10.7	B					- Mitigation not required.
Fulton Street	WB	LT	CLOSED			LT	CLOSED							
<b>Overall Intersection</b>	-		<b>0.38</b>	<b>10.5</b>	<b>B</b>	-	<b>0.39</b>	<b>10.7</b>	<b>B</b>					
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.79	16.6	B	LTR	0.69	13.6	B					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>16.6</b>	<b>B</b>	-	<b>0.44</b>	<b>13.6</b>	<b>B</b>					
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.76	15.2	B	TR	0.66	12.9	B					- Mitigation not required.
Maiden Lane	WB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>114.8</b>	<b>F</b>	-	<b>0.88</b>	<b>88.2</b>	<b>F</b>					
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.73	14.7	B	LT	0.47	9.7	A					- Mitigation not required.
Liberty Street	EB	TR	0.83	46.6	D	TR	0.55	28.9	C					
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>24.4</b>	<b>C</b>	-	<b>0.50</b>	<b>17.4</b>	<b>B</b>					
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.48	9.6	A	T	0.59	10.5	B	T	0.68	17.1	B	- Modify signal timing (shift 8 s of green time from SB phase to EB phase).
Rector Street	EB	R	0.84	61.3	E	R	0.90	69.7	E	R	0.62	32.3	C	
<b>Overall Intersection</b>	-		<b>0.60</b>	<b>17.3</b>	<b>B</b>	-	<b>0.68</b>	<b>25.3</b>	<b>C</b>	-	<b>0.66</b>	<b>20.9</b>	<b>C</b>	
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.58	9.5	A	T	0.47	8.2	A					- Mitigation not required.
<b>Overall Intersection</b>	-		<b>0.40</b>	<b>9.5</b>	<b>A</b>	-	<b>0.33</b>	<b>8.2</b>	<b>A</b>					

TABLE E.2-17  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>WATER STREET CORRIDOR</b>														
40 Water Street at Fulton Street <sup>(3)</sup>														
Water Street	NB	-	-	-	-	L	0.61	28.7	C	LT	0.64	17.3	B	- Restripe the NB approach of Water Street to provide one through lane and one through-left lane.
		LT	0.55	15.8	B	T	1.06	69.6	E	-	-	-	-	
	SB	TR	0.41	13.9	B	TR	0.64	17.7	B	TR	0.64	17.7	B	
Fulton Street	EB	LR	0.36	27.3	C	LR	0.51	30.7	C	LR	0.51	30.7	C	
<b>Overall Intersection</b>			<b>0.43</b>	<b>16.0</b>	<b>B</b>		<b>0.75</b>	<b>42.6</b>	<b>D</b>		<b>0.51</b>	<b>18.7</b>	<b>B</b>	
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED (FREE FLOW)				ANALYSIS NOT NEEDED (FREE FLOW)									
7 West Street (NYS Rt. 9A) at Barclay <sup>(4)</sup>	WB	R	0.67	38.4	E	R	0.66	39.1	E					- Mitigation not required.
<b>WASHINGTON STREET CORRIDOR</b>														
10 Washington Street at Rector Street														
Washington Street	SB	-	-	-	-	LT	0.15	14.3	B					- Mitigation not required.
Rector Street	EB	LTR	0.03	7.4	A	-	-	-	-					
<b>GREENWICH STREET CORRIDOR</b>														
12 Greenwich Street at Barclay Street														
Greenwich Street	SB	R	0.19	12.5	B	T	0.20	13.1	B					- Mitigation not required.
		-	-	-	-	R	0.27	13.3	B					
	WB	-	-	-	-	LT	0.00	7.2	A					

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitran Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-18  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>1a West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	T	0.93	7.7	A	T	0.86	5.1	A	T	1.00	27.4	C	- Provide revised signal timing and phasing plan for better coordination with the intersection of Rt. 9A at Canal Street (South) to reduce spillback. - Shift the crosswalk across Rt. 9A at the intersection of Rt. 9A and Canal Street (South) further north to the intersection of Rt. 9A and Canal Street (North). - Restripe Canal Street WB to provide two 11 ft. exclusive left turn lanes and one 11 ft. exclusive right turn lane. - Provide strict enforcement of "No Standing" regulation along the north side of Canal Street during the PM peak period. [Measures reflect operational and geometric improvements needed for coordination with the adjacent intersection, Rt. 9A at Canal Street (South) which operates in tandem.]
	SB	T	0.69	2.6	A	T	0.80	3.6	A	T	0.79	3.5	A	
Canal Street	WB	L	0.17	38.6	D	L	0.25	41.0	D	L	0.13	38.3	D	
	LR	0.19	39.8	D	LR	0.37	43.3	D	-	-	-	-	-	
	R	0.22	40.0	D	R	0.42	45.5	D	R	0.57	38.6	D	-	
<b>Overall Intersection</b>	-	-	<b>0.76</b>	<b>6.0</b>	<b>A</b>	-	<b>0.76</b>	<b>5.8</b>	<b>A</b>	-	<b>0.85</b>	<b>15.6</b>	<b>B</b>	
<b>1b West Street (NYS Rt. 9A) at Canal Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.04	114.3	F	TR	1.10	77.2	E	TR	1.04	51.3	D	
	R	0.31	10.0	B	R	0.37	10.7	B	R	0.35	8.3	A		
	SB	L	0.87	48.0	D	L	1.06	86.2	F	L	0.69	33.8	C	
	T	1.07	101.7	F	T	1.20+	114.1	F	T	0.91	4.2	A		
<b>Overall Intersection</b>	-	-	<b>0.96</b>	<b>102.6</b>	<b>F</b>	-	<b>1.08</b>	<b>92.9</b>	<b>F</b>	-	<b>0.91</b>	<b>26.8</b>	<b>C</b>	
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.15	107.2	F	TR	1.14	95.2	F	TR	1.09	76.1	E	- Partially mitigated. - Modify signal timing (increase cycle length from 120 s to 135 s).
	SB	L	0.39	12.8	B	L	0.62	9.4	A	L	0.66	12.8	B	
	TR	1.07	75.1	E	TR	1.14	98.9	F	TR	1.09	79.3	E		
Chambers Street	EB	LTR	0.61	43.5	D	LTR	0.36	40.7	D	LTR	0.31	40.8	D	
	WB	LT	1.10	119.6	F	LT	1.08	120.0+	F*	LT	1.00	99.2	F	
	R	0.67	26.2	C	R	0.75	36.7	D	R	0.78	44.3	D		
<b>Overall Intersection</b>	-	-	<b>1.08</b>	<b>83.3</b>	<b>F</b>	-	<b>1.10</b>	<b>89.8</b>	<b>F</b>	-	<b>1.05</b>	<b>73.1</b>	<b>E</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street<sup>(4)</sup></b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.98	101.2	F	-	-	-	-	- Meaningful TSM mitigation measures are not available.
	TR	0.82	14.3	B	TR	1.19	120.0+	F*	-	-	-	-		
	SB	L	0.16	5.4	A	L	1.20+	120.0+	F*	-	-	-		
Vesey Street	TR	0.68	4.1	A	TR	1.20+	120.0+	F*	-	-	-	-		
	EB	DefL	1.20+	120.0+	F*	L	0.43	35.7	D	-	-	-		
	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	-	-	-	-		
	WB	L	1.00	93.0	F	L	1.20+	120.0+	F*	-	-	-		
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*	-	-	-	-		
<b>Overall Intersection</b>	-	-	<b>1.20+</b>	<b>75.7</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	-	-	-	
<b>4I West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.94	34.8	C	-	-	-	-	- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.72	38.4	D	-	-	-	-	
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.84</b>	<b>35.3</b>	<b>D</b>	-	-	-	-	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.81	67.1	E	L	0.77	66.1	E	L	0.57	51.4	D	- Modify signal timing (shift 1 s of all red time and 6 s of green time from EB phase to NB/SB through-right phase; shift 5 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR	0.72	15.9	B	TR	0.81	17.8	B	TR	0.73	11.1	B		
	SB	L	0.98	91.8	F	L	1.20+	120.0+	F*	L	0.94	81.2	F	
	TR	0.93	23.6	C	TR	1.03	64.7	E	TR	0.93	21.5	C		
Liberty Street	EB	DefL	1.04	105.8	F	LTR	0.64	44.1	D	LTR	0.99	90.3	F	
	TR	1.15	120.0+	F*	-	-	-	-	-	-	-	-		
	WB	DefL	0.44	43.9	D	-	-	-	-	-	-	-		
	TR	0.37	40.8	D	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	-	-	<b>1.00</b>	<b>37.6</b>	<b>D</b>	-	<b>0.95</b>	<b>53.5</b>	<b>D</b>	-	<b>0.94</b>	<b>26.6</b>	<b>C</b>	

TABLE E.2-18  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			LOS	
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.00	120.0+	F*	T	0.89	49.3	D	NB	T	0.88	44.1	D	- Partially mitigated.
	SB	TR	1.04	99.9	F	TR	1.13	120.0+	F*	SB	TR	1.12	120.0+	F*	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane.
Albany Street	EB	LTR	1.20+	120.0+	F*	LR	0.88	69.4	E	EB	L	0.08	30.4	C	
	WB	-	-	-	-	L	0.61	41.9	D	R	R	0.68	48.2	D	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	-	-	-	-	-	TR	0.51	38.8	D	WB	L	0.63	43.7	D	- Modify signal timing (shift 1 s of green time from the EB/WB phase to the NB/SB phase).
										R	R	0.52	40.0	D	
<b>Overall Intersection</b>	-	-	<b>1.10</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.05</b>	<b>91.0</b>	<b>F</b>	-	<b>0.98</b>	<b>84.6</b>	<b>F</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	TR	1.14	120.0+	F*	T	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	R	R	1.10	120.0+	F*	R	1.13	120.0+	F*						
	SB	T	1.10	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B						
	WB	L	0.94	120.0+	F*	L	1.07	120.0+	F*						
	R	R	0.90	120.0+	F*	R	1.13	120.0+	F*						
<b>Overall Intersection</b>	-	-	<b>1.02</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>WASHINGTON STREET CORRIDOR</b>															
<b>8 Washington Street at Vesey Street</b>															
Vesey Street	EB	LT	0.53	11.8	B	LT	0.59	11.7	B						- Mitigation not required.
	WB	TR	0.39	9.5	A	TR	0.55	11.0	B						
<b>Overall Intersection</b>	-	-	<b>0.33</b>	<b>10.6</b>	<b>B</b>	-	<b>0.37</b>	<b>11.3</b>	<b>B</b>						
<b>9 Washington Street at Liberty Street</b>															
Washington Street	NB	R	0.13	22.3	C	ANALYSIS NOT NEEDED. (FREE FLOW)									
Liberty Street	EB	T	0.39	9.6	A	-	-	-	-						
<b>Overall Intersection</b>	-	-	<b>0.30</b>	<b>10.4</b>	<b>B</b>	-	-	-	-						
<b>GREENWICH STREET CORRIDOR</b>															
<b>11 Greenwich Street at Chambers Street</b>															
Greenwich Street	SB	LTR	0.54	24.5	C	LTR	0.22	14.6	B						- Mitigation not required.
Chambers Street	EB	TR	0.37	11.4	B	TR	0.41	16.8	B						
	WB	LT	0.84	26.3	C	LT	0.87	33.8	C						
<b>Overall Intersection</b>	-	-	<b>0.72</b>	<b>20.9</b>	<b>C</b>	-	<b>0.54</b>	<b>23.9</b>	<b>C</b>						
<b>42 Greenwich Street at Fulton Street</b>															
Greenwich Street	SB	-	-	-	-	TR	0.51	13.9	B						- Mitigation not required.
Fulton Street	WB	-	-	-	-	LT	0.63	29.8	C						
<b>Overall Intersection</b>	-	-	-	-	-	-	<b>0.56</b>	<b>20.6</b>	<b>C</b>						
<b>14 Greenwich Street at Liberty Street</b>															
	SB	-	-	-	-	L	0.86	47.7	D	L	0.83	41.4	D		- Modify signal timing (shift 1 s of green time from EB phase to SB phase).
	-	-	-	-	-	LT	0.55	15.9	B	LT	0.54	15.1	B		
Liberty Street	EB	TR	0.51	11.2	B	TR	0.79	32.9	C	TR	0.82	35.1	D		
<b>Overall Intersection</b>	-	-	<b>0.32</b>	<b>11.2</b>	<b>B</b>	-	<b>0.83</b>	<b>30.4</b>	<b>C</b>		<b>0.82</b>	<b>30.3</b>	<b>C</b>		
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.00	17.4	B	R	0.09	18.6	B	NB	R	0.08	18.5	B	- Restripe NB Greenwich Street approach by shifting the centerline 4ft. to the west and providing one 12 ft. wide exclusive right-turn lane and 8 ft. for parking.
	SB	LT	0.39	22.9	C	LT	0.94	58.4	E	SB	L	0.46	25.2	C	
Rector Street	EB	TR	0.40	13.2	B	TR	0.66	18.9	B	T	T	0.40	22.4	C	- Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane.
										EB	TR	0.66	18.9	B	
<b>Overall Intersection</b>	-	-	<b>0.40</b>	<b>17.1</b>	<b>B</b>	-	<b>0.77</b>	<b>37.1</b>	<b>D</b>	-	<b>0.58</b>	<b>21.0</b>	<b>C</b>		

TABLE E.2-18  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>CANAL STREET CORRIDOR</b>														
<b>16 Canal Street at Hudson Street</b>														
Hudson Street	NB	LTR	0.39	28.7	C	LTR	0.91	46.9	D	LTR	0.72	36.3	D	- Restripe EB left-turn lane from 11 ft. to 14 ft. by reducing the median width. - Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane. - Modify signal timing (add 4 s to green time of EB/WB phase and 4 s to green time of EB/WB lead phase).
		R	1.01	120.0+	F*	R	0.80	47.6	D	R	1.00	88.5	F	
Canal Street	EB	L	0.34	25.2	C	L	0.89	50.8	D	L	0.71	31.6	C	
		T	0.98	52.6	D	T	0.94	42.5	D	T	0.89	32.7	C	
	WB	T	0.23	23.4	C	T	0.53	29.0	C	T	0.46	24.5	C	
		R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.20	115.4	F	
<b>Overall Intersection</b>	-		<b>1.16</b>	<b>87.9</b>	<b>F</b>	-	<b>1.20+</b>	<b>80.4</b>	<b>F</b>	-	<b>1.15</b>	<b>60.6</b>	<b>E</b>	
<b>17 Canal Street at Varick Street</b>														
Varick Street	SB	L	0.42	26.6	C	L	0.73	44.5	D	L	0.73	44.5	D	- Modify signal timing (shift 4 s of green time from EB lead phase to EB/WB phase).
		T	1.09	113.6	F	T	0.49	26.2	C	T	0.49	26.2	C	
		R	0.20	23.6	C	R	0.11	22.0	C	R	0.11	22.0	C	
Canal Street	EB	TR	0.45	10.8	B	TR	0.32	9.1	A	TR	0.32	9.1	A	
	WB	LT	1.13	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.12	120.0+	F*	
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>103.6</b>	<b>F</b>	-	<b>0.46</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.46</b>	<b>82.3</b>	<b>F</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>18 West Broadway at Worth Street</b>														
West Broadway	SB	LTR	0.79	19.4	B	LTR	0.68	16.2	B	LTR	0.47	12.7	B	- Provide strict enforcement of "No Standing Anytime" regulation along the west side of West Broadway during the AM and PM peak periods to gain an additional SB through lane. - Modify signal timing (shift 1 s of green time from SB phase to EB/WB phase).
Worth Street	EB	TR	0.22	20.8	C	TR	0.28	23.1	C	TR	0.27	22.2	C	
	WB	LT	0.65	30.1	C	LT	0.87	46.3	D	LT	0.85	42.5	D	
<b>Overall Intersection</b>	-		<b>0.74</b>	<b>21.5</b>	<b>C</b>	-	<b>0.76</b>	<b>24.8</b>	<b>C</b>	-	<b>0.62</b>	<b>21.3</b>	<b>C</b>	
<b>19 West Broadway at Chambers Street</b>														
West Broadway	SB	L	0.38	17.3	B	L	0.27	15.7	B	L	0.31	19.3	B	- Modify signal timing (shift 5 s of green time from SB phase to EB/WB phase).
		TR	0.50	18.1	B	TR	0.48	17.8	B	TR	0.55	22.0	C	
Chambers Street	EB	L	0.31	19.5	B	L	0.44	24.3	C	L	0.35	17.3	B	
		TR	0.90	41.6	D	TR	0.82	38.0	D	TR	0.74	26.6	C	
	WB	LTR	1.18	120.0+	F*	LTR	1.20+	120.0+	F*	LTR	1.16	111.0	F	
<b>Overall Intersection</b>	-		<b>0.84</b>	<b>56.3</b>	<b>E</b>	-	<b>0.96</b>	<b>96.3</b>	<b>F</b>	-	<b>0.89</b>	<b>53.3</b>	<b>D</b>	
<b>20 West Broadway at Barclay Street</b>														
West Broadway	SB	TR	0.54	11.5	B	TR	0.70	14.0	B					- Mitigation not required.
Barclay Street	WB	LT	0.97	51.7	D	LT	0.92	42.2	D					
<b>Overall Intersection</b>	-		<b>0.73</b>	<b>28.7</b>	<b>C</b>	-	<b>0.80</b>	<b>23.8</b>	<b>C</b>					
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.51	40.2	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway). - SB Greenwich Street is STOP sign controlled. - Provide revised signal timing and phasing plan.
		-	-	-	-	R	0.43	41.3	D	-	-	-	-	
West Broadway	SB	L	1.20+	120.0+	F*	L	0.62	16.3	B	L	0.85	28.9	C	
		R	0.95	49.2	D	TR	0.41	3.2	A	TR	0.50	8.1	A	
Vesey Street	EB	T	0.33	15.5	B	TR	1.20+	120.0+	F*	TR	0.87	28.1	C	
	WB	T	0.25	14.7	B	LT	0.64	37.5	D	LT	0.23	14.6	B	
<b>Overall Intersection</b>	-		<b>0.79</b>	<b>64.7</b>	<b>E</b>	-	<b>0.93</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.86</b>	<b>22.6</b>	<b>C</b>	

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 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>CHURCH STREET CORRIDOR</b>															
<b>21 Church Street at Worth Street<sup>(1)</sup></b>															
Church Street	NB	LTR	0.85	14.9	B	LTR	1.20+	120.0+	F*	NB	LT	0.88	22.2	C	- Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane. - Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane.
Worth Street	EB	LT	0.73	35.8	D	LT	0.59	30.9	C	R	0.35	7.8	A		
	WB	TR	0.66	29.6	C	TR	0.85	42.0	D	EB	LT	0.59	30.9	C	
										WB	T	0.56	27.5	C	
										R	0.31	22.7	C		
<b>Overall Intersection</b>	-		<b>0.81</b>	<b>19.3</b>	<b>B</b>	-	<b>1.19</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.77</b>	<b>22.3</b>	<b>C</b>		
<b>22 Church Street at Chambers Street</b>															
Church Street	NB	LTR	0.91	31.3	C	LTR	1.20+	120.0+	F*	LTR	0.98	39.7	D	- Eliminate the truck loading/unloading zone along the west side of Church Street during the peak periods to gain an additional NB through lane. - Provide strict enforcement of "No Standing Anytime" regulation along the north and south sides of EB Chambers Street during the peak periods. - Modify Signal Timing (shift 1 s of green time from NB phase to EB/WB phase).	
Chambers Street	EB	LT	1.11	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.11	98.4	F		
	WB	TR	0.91	39.2	D	TR	0.71	24.7	C	TR	0.70	23.4	C		
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>58.3</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.05</b>	<b>46.9</b>	<b>D</b>		
<b>23 Church Street at Barclay Street</b>															
Church Street	NB	LT	0.95	31.1	C	LT	1.01	44.1	D					- Mitigation not required.	
Barclay Street	WB	T	0.52	25.4	C	T	0.53	26.1	C						
		R	1.03	87.3	F	R	0.81	43.6	D						
<b>Overall Intersection</b>	-		<b>0.98</b>	<b>38.7</b>	<b>D</b>	-	<b>0.93</b>	<b>41.9</b>	<b>D</b>						
<i>General measures for Church Street corridor between Liberty Street and Vesey Street: Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase; Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane; Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>															
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*	LTR	1.04	69.7	E	- Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition. - Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.	
		R	0.74	19.7	B	R	1.20+	120.0+	F*	-	-	-	-		
Vesey Street	EB	LT	0.90	38.9	D	LT	1.20+	120.0+	F*	LT	0.91	43.1	D		
<b>Overall Intersection</b>	-		<b>1.13</b>	<b>101.2</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.80</b>	<b>59.3</b>	<b>E</b>		
<b>25 Church Street at Fulton Street</b>															
Church Street	NB	T	0.73	11.7	B	LT	0.87	22.1	C	LT	0.98	41.4	D	- Partially mitigated. - Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
Fulton Street	WB	R	0.61	35.7	D	TR	1.20+	120.0+	F*	TR	0.64	37.3	D		
<b>Overall Intersection</b>	-		<b>0.70</b>	<b>14.4</b>	<b>B</b>	-	<b>1.14</b>	<b>86.8</b>	<b>F</b>	-	<b>0.72</b>	<b>40.4</b>	<b>D</b>		
<b>26 Church Street at Dey Street</b>															
Church Street	NB	T	0.74	11.9	B	T	0.76	12.3	B	T	0.87	23.2	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
Dey Street	WB	R	0.27	29.3	C	R	0.33	32.3	C	R	0.15	33.8	C		
<b>Overall Intersection</b>	-		<b>0.61</b>	<b>12.5</b>	<b>B</b>	-	<b>0.64</b>	<b>12.8</b>	<b>B</b>	-	<b>0.53</b>	<b>23.5</b>	<b>C</b>		
<b>27 Church Street at Cortlandt Street</b>															
Church Street	NB	T	0.55	9.0	A	T	0.60	9.5	A	T	0.69	23.4	C	- Prohibit parking along the south side of Cortlandt Street. - Restripe the WB Cortlandt Street approach from one 16 ft. right turn lane to two 12 ft. right turn lanes.	
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	0.55	34.6	C		
<b>Overall Intersection</b>	-		<b>0.92</b>	<b>97.8</b>	<b>F</b>	-	<b>1.12</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.54</b>	<b>26.4</b>	<b>C</b>		
<b>28 Church Street at Liberty Street</b>															
Church Street	NB	T	0.63	10.5	B	T	0.56	9.5	A	T	0.65	20.1	C	- [Measures reflect geometric and operational improvements along the Church Street corridor, otherwise mitigation not needed.]	
		R	0.22	7.2	A	R	0.20	7.2	A	R	0.13	13.3	B		
Liberty Street	EB	LT	0.43	22.6	C	LT	0.84	36.1	D	LT	0.70	42.0	D		
<b>Overall Intersection</b>	-		<b>0.55</b>	<b>13.9</b>	<b>B</b>	-	<b>0.67</b>	<b>20.8</b>	<b>C</b>	-	<b>0.56</b>	<b>29.1</b>	<b>C</b>		
<b>29 Trinity Street at Rector Street</b>															
Trinity Street	NB	TR	0.58	14.5	B	TR	0.43	12.1	B	TR	0.46	14.8	B	- Modify signal timing (shift 4 s of green time from NB phase to EB phase).	
Rector Street	EB	LT	0.53	25.9	C	LT	1.02	70.8	E	LT	0.89	41.1	D		
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>17.5</b>	<b>B</b>	-	<b>0.66</b>	<b>41.2</b>	<b>D</b>	-	<b>0.65</b>	<b>27.8</b>	<b>C</b>		



TABLE E.2-18  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>BROADWAY CORRIDOR</b>														
<b>30 Broadway at Canal Street</b>														
Broadway	SB	LTR	0.57	23.9	C	LTR	0.74	25.7	C					- Mitigation not required.
Canal Street	EB	TR	1.15	120.0+	F*	TR	0.97	48.1	D					
	WB	DefL	1.10	120.0+	F*	DefL	1.10	101.3	F					
		T	1.00	62.5	E	T	0.74	19.2	B					
<b>Overall Intersection</b>	<b>-</b>	<b>0.92</b>	<b>100.1</b>	<b>F</b>	<b>-</b>	<b>0.92</b>	<b>41.9</b>	<b>D</b>						
<b>31 Broadway at Worth Street<sup>(1)</sup></b>														
Broadway	SB	LTR	0.75	16.3	B	LTR	0.83	83.4	F	LTR	0.59	27.8	C	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.
Worth Street	EB	TR	0.65	24.1	C	TR	0.88	42.4	D	TR	0.86	38.7	D	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
	WB	L	0.36	20.4	C	LT	0.90	43.5	D	L	0.36	20.7	C	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane.
		T	0.56	21.5	C					T	0.57	21.6	C	
<b>Overall Intersection</b>	<b>-</b>	<b>0.71</b>	<b>19.2</b>	<b>B</b>	<b>-</b>	<b>0.86</b>	<b>66.4</b>	<b>E</b>	<b>-</b>	<b>0.71</b>	<b>28.6</b>	<b>C</b>		
<b>32 Broadway at Chambers Street</b>														
Broadway	SB	LTR	0.58	12.8	B	LTR	0.60	13.2	B					- Mitigation not required.
Chambers Street	EB	TR	1.02	66.9	E	TR	0.94	46.0	D					
	WB	L	0.79	49.0	D	L	0.41	22.3	C					
		LT	0.85	32.7	C	LT	0.64	22.4	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.78</b>	<b>33.9</b>	<b>C</b>	<b>-</b>	<b>0.76</b>	<b>24.1</b>	<b>C</b>						
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.89	37.9	D	L	0.96	44.2	D	L	0.65	26.0	C	- Prohibit parking along the north side of EB Vesey Street.
		LT	0.58	19.3	B	LT	0.43	13.8	B	T	0.83	32.9	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
Vesey Street	EB	L	1.06	99.7	F	L	1.20+	120.0+	F*	L	0.94	66.4	E	
		LTR	0.83	43.3	D	LTR	1.20+	120.0+	F*	LTR	0.82	41.9	D	- Modify signal timing (shift 10 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>	<b>-</b>	<b>0.68</b>	<b>39.6</b>	<b>D</b>	<b>-</b>	<b>0.76</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.56</b>	<b>38.3</b>	<b>D</b>		
<b>34 Broadway at Fulton Street<sup>(2)</sup></b>														
Broadway	SB	TR	0.55	10.2	B	TR	0.38	8.5	A					- Mitigation not required.
Fulton Street	WB	LT	0.37	26.2	C	LT	0.60	30.3	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.49</b>	<b>13.1</b>	<b>B</b>	<b>-</b>	<b>0.45</b>	<b>15.7</b>	<b>B</b>						
<b>35 Broadway at Dey Street</b>														
Broadway	SB	LTR	0.91	24.5	C	LTR	0.70	13.9	B					- Mitigation not required.
<b>Overall Intersection</b>	<b>-</b>	<b>0.59</b>	<b>24.5</b>	<b>C</b>	<b>-</b>	<b>0.46</b>	<b>13.9</b>	<b>B</b>						
<b>36 Broadway at Maiden Lane / Cortlandt Street</b>														
Broadway	SB	TR	0.77	15.7	B	TR	0.58	11.3	B					- Mitigation not required.
Maiden Lane	WB	LT	1.20	120.0+	F*	LT	0.89	51.9	D					
<b>Overall Intersection</b>	<b>-</b>	<b>0.94</b>	<b>74.2</b>	<b>E</b>	<b>-</b>	<b>0.68</b>	<b>25.6</b>	<b>C</b>						
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.70	13.9	B	LT	0.45	9.4	A					- Mitigation not required.
Liberty Street	EB	TR	0.65	36.9	D	TR	0.42	26.9	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.68</b>	<b>20.0</b>	<b>B</b>	<b>-</b>	<b>0.44</b>	<b>15.5</b>	<b>B</b>						
<b>38 Broadway at Rector Street</b>														
Broadway	SB	T	0.49	9.7	A	T	0.64	11.7	B	T	0.67	14.1	B	- Modify signal timing (shift 3 s of green time from SB phase to EB phase).
Rector Street	EB	R	0.68	44.6	D	R	0.85	59.1	E	R	0.72	42.4	D	
<b>Overall Intersection</b>	<b>-</b>	<b>0.55</b>	<b>14.4</b>	<b>B</b>	<b>-</b>	<b>0.70</b>	<b>23.4</b>	<b>C</b>	<b>-</b>	<b>0.69</b>	<b>21.1</b>	<b>C</b>		
<b>39 Broadway at Exchange Place</b>														
Broadway	SB	LT	0.62	10.3	B	T	0.58	9.8	A					- Mitigation not required.
<b>Overall Intersection</b>	<b>-</b>	<b>0.43</b>	<b>10.3</b>	<b>B</b>	<b>-</b>	<b>0.40</b>	<b>9.8</b>	<b>A</b>						

TABLE E.2-18  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>WATER STREET CORRIDOR</b>														
<b>40 Water Street at Fulton Street<sup>(3)</sup></b>														
Water Street	NB	LT	0.58	16.2	B	L	0.48	20.2	C	LT	0.75	19.9	B	- Restripe the NB approach of Water Street to provide one through lane and one through-left lane.
			-	-	-	T	1.20+	120.0+	F*	-	-	-	-	
	SB	TR	0.33	13.0	B	TR	0.49	15.2	B	TR	0.49	15.2	B	
Fulton Street	EB	LR	0.70	36.8	D	LR	0.37	27.2	C	LR	0.37	27.2	C	
<b>Overall Intersection</b>	-	-	<b>0.55</b>	<b>18.9</b>	<b>B</b>	-	<b>0.83</b>	<b>88.6</b>	<b>F</b>	-	<b>0.54</b>	<b>19.0</b>	<b>B</b>	
<b>UNSIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>5 West Street (NYS Rt.9A) at Rector Street</b>	ANALYSIS NOT NEEDED (FREE FLOW)				ANALYSIS NOT NEEDED (FREE FLOW)									
<b>7 West Street (NYS Rt. 9A) at Barclay<sup>(4)</sup></b>	WB	R	0.67	41.7	E	R	0.63	37.7	E					- Mitigation not required.
<b>WASHINGTON STREET CORRIDOR</b>														
<b>10 Washington Street at Rector Street</b>														
Washington Street	SB	-	-	-	-	LT	0.22	15.1	C					- Mitigation not required.
Rector Street	EB	LTR	0.03	7.4	A	-	-	-	-					
<b>GREENWICH STREET CORRIDOR</b>														
<b>12 Greenwich Street at Barclay Street</b>														
Greenwich Street	SB	R	0.05	11.5	B	T	0.24	14.9	B					- Mitigation not required.
			-	-	-	R	0.01	11.5	B					
	WB	-	-	-	-	LT	0.00	7.2	A					

**Eng-Wong, Taub & Associates Notes:**

- (1): AM/MD/PM volumes were obtained from Urbitrans Associates, Inc., Catherine Village Public Parking Garage, 1999. These volumes were balanced to fit into the WTC EIS networks.
- (2): Broadway at Fulton Street is closed during the midday for the Pedestrian mall.
- (3): Pre-9/11 traffic volumes were obtained from 1997 MESA study.
- (4): Locations analyzed without diversion volumes due to uncertainty of future lane configuration changes.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-19  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.02	56.3	E	TR	1.10	78.4	E	TR	1.03	56.1	E	- Partially mitigated.
	SB	L	0.89	28.6	C	L	0.88	35.9	D	L	0.96	64.5	E	- Modify signal timing (increase cycle length from 120 s to 135 s).
Chambers Street		TR	0.92	33.7	C	TR	0.84	21.6	C	TR	0.66	6.6	A	
	EB	LTR	0.74	62.1	E	LTR	0.48	42.0	D	LTR	0.44	42.1	D	
	WB	LT	0.79	56.1	E	LT	0.83	62.5	E	LT	0.75	55.9	E	
		R	0.68	29.3	C	R	0.44	26.2	C	R	0.47	32.1	C	
<b>Overall Intersection</b>	-	<b>1.00</b>	<b>44.5</b>	<b>D</b>	-	<b>1.13</b>	<b>51.6</b>	<b>D</b>	-	<b>1.12</b>	<b>37.9</b>	<b>D</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.07	98.7	F					- Meaningful TSM mitigation measures are not available.
	TR	0.97	21.8	C	TR	1.20+	120.0+	F*						
Vesey Street	SB	L	0.12	7.4	A	L	1.20+	120.0+	F*					
		TR	0.58	3.6	A	TR	1.14	120.0+	F*					
	EB	LTR	1.05	96.3	F	L	0.46	31.7	C					
		-	-	-	-	TR	0.92	78.4	E					
	WB	L	1.14	120.0+	F*	L	0.84	61.3	E					
		LTR	0.96	80.8	F	TR	0.79	61.3	E					
<b>Overall Intersection</b>	-	<b>1.04</b>	<b>29.0</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.29	11.9	B	T	0.29	12.4	B	- Modify signal timing (shift 1 s of green time from NB phase to WB phase).
	WB	-	-	-	-	R	0.74	46.8	D	R	0.72	44.6	D	
<b>Overall Intersection</b>	-	-	-	-	-	<b>0.46</b>	<b>21.5</b>	<b>C</b>	-	<b>0.45</b>	<b>21.2</b>	<b>C</b>		
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.96	93.1	F	L	0.48	14.9	B					- Mitigation not required.
	TR	1.04	54.3	D	TR	0.48	19.8	B						
Liberty Street	SB	L	1.20+	120.0+	F*	L	0.58	19.1	B					
		TR	0.74	16.4	B	TR	0.49	20.2	C					
	EB	DefL	1.15	120.0+	F*	LTR	0.40	31.4	C					
		TR	0.42	41.0	D	-	-	-	-					
	WB	LTR	0.28	37.1	D	-	-	-	-					
<b>Overall Intersection</b>	-	<b>1.09</b>	<b>54.4</b>	<b>D</b>	-	<b>0.67</b>	<b>21.3</b>	<b>C</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.03	110.0	F	T	0.75	16.7	B					- Mitigation not required.
	SB	TR	0.96	74.9	E	TR	0.88	32.6	C					
Albany Street	EB	LTR	1.07	106.0	F	LR	1.00	95.6	F					
	WB	-	-	-	-	L	0.18	31.4	C					
		-	-	-	-	TR	0.08	30.0	C					
<b>Overall Intersection</b>	-	<b>1.04</b>	<b>97.4</b>	<b>F</b>	-	<b>0.92</b>	<b>26.8</b>	<b>C</b>						
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.11	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
	R	1.06	111.1	F	R	1.11	118.1	F						
Brooklyn Battery Tunnel	SB	T	1.12	120.0+	F*	TR	1.20+	120.0+	F*					
	EB	R	0.10	12.7	B	R	0.62	26.3	C					
	WB	L	1.05	120.0+	F*	L	1.06	120.0+	F*					
		R	1.07	120.0+	F*	R	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

TABLE E.2-19  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Barclay Street	WB	R	0.55	38.1	E	R	0.22	13.3	B				- Mitigation not required.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-20  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.86	21.5	C	TR	0.90	24.3	C					- Mitigation not required.
	SB	L	0.75	25.7	C	L	0.80	18.9	B					
		TR	0.65	16.1	B	TR	0.81	20.6	C					
Chambers Street	EB	LTR	0.29	36.5	D	LTR	0.27	37.4	D					
	WB	LT	0.69	49.9	D	LT	0.66	49.2	D					
		R	0.81	44.0	D	R	0.52	28.3	C					
<b>Overall Intersection</b>	<b>-</b>	<b>1.00</b>	<b>22.7</b>	<b>C</b>	<b>-</b>	<b>0.84</b>	<b>23.7</b>	<b>C</b>						
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.88	60.6	E					- Meaningful TSM mitigation measures are not available.
		TR	0.69	12.0	B	TR	1.20+	120.0+	F*					
	SB	L	0.19	4.5	A	L	1.20+	120.0+	F*					
		TR	0.48	3.1	A	TR	0.77	48.6	D					
Vesey Street	EB	LTR	0.75	49.4	D	L	0.28	25.9	C					
		-	-	-	-	TR	1.11	120.0+	F*					
	WB	L	0.80	54.4	D	L	0.76	48.9	D					
		LTR	1.01	95.3	F	TR	0.81	65.3	E					
<b>Overall Intersection</b>	<b>-</b>	<b>0.91</b>	<b>17.6</b>	<b>B</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.25	16.4	B					- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.63	32.1	C					
<b>Overall Intersection</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.42</b>	<b>22.4</b>	<b>C</b>						
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.43	53.3	D	L	0.38	11.6	B					- Mitigation not required.
		TR	0.75	16.5	B	TR	0.45	19.5	B					
	SB	L	0.79	68.2	E	L	0.55	16.6	B					
		TR	0.63	14.3	B	TR	0.40	18.7	B					
Liberty Street	EB	DeL	0.69	58.0	E	LTR	0.28	29.5	C					
		TR	0.43	42.5	D	-	-	-	-					
	WB	LTR	0.60	49.3	D	-	-	-	-					
<b>Overall Intersection</b>	<b>-</b>	<b>0.74</b>	<b>22.2</b>	<b>C</b>	<b>-</b>	<b>0.56</b>	<b>19.5</b>	<b>B</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	TR	0.96	101.8	F	T	0.68	16.4	B					- Mitigation not required.
	SB	TR	0.94	64.8	E	TR	0.89	37.8	D					
Albany Street	EB	LTR	0.94	74.0	E	LR	0.32	34.6	C					
	WB	-	-	-	-	L	0.15	30.8	C					
		-	-	-	-	TR	0.28	34.3	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.96</b>	<b>84.0</b>	<b>F</b>	<b>-</b>	<b>0.71</b>	<b>26.4</b>	<b>C</b>						
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.08	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
	R	0.96	52.3	D	R	1.06	79.7	E						
	SB	T	1.08	107.2	F	TR	1.18	120.0+	F*					
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.20	22.0	C					
	WB	L	0.84	120.0+	F*	L	1.01	120.0+	F*					
		R	1.01	120.0+	F*	R	1.13	120.0+	F*					
<b>Overall Intersection</b>	<b>-</b>	<b>1.05</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

TABLE E.2-20  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													

**WEST STREET CORRIDOR**

5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Street	WB	R	0.60	31.0	D	R	0.28	13.2	B				- Mitigation not required.

- General Notes:**
- (i): Control delay is measured in seconds per vehicle.
  - (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
  - (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
  - (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
  - (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-21  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>													
West Street (NYS Rt. 9A)	NB	TR	1.05	67.4	E	TR	0.95	29.6	C				- Mitigation not required.
	SB	L	0.38	11.3	B	L	0.69	11.9	B				
		TR	1.01	55.4	E	TR	1.05	61.6	E				
Chambers Street	EB	LTR	0.60	43.0	D	LTR	0.33	39.5	D				
	WB	LT	1.02	94.1	F	LT	0.96	88.9	F				
		R	0.66	25.8	C	R	0.74	36.1	D				
<b>Overall Intersection</b>	<b>-</b>	<b>1.00</b>	<b>57.2</b>	<b>E</b>	<b>-</b>	<b>0.99</b>	<b>45.5</b>	<b>D</b>					
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>													
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.83	55.5	E				- Meaningful TSM mitigation measures are not available.
		TR	0.77	13.2	B	TR	1.20+	120.0+	F*				
	SB	L	0.15	4.9	A	L	1.20+	120.0+	F*				
		TR	0.64	3.9	A	TR	0.87	57.4	E				
Vesey Street	EB	LTR	1.01	84.7	F	L	0.25	26.2	C				
	-	-	-	-	-	TR	1.04	107.4	F				
	WB	L	0.91	71.8	E	L	0.94	79.6	E				
		LTR	1.20+	120.0+	F*	TR	0.86	70.4	E				
<b>Overall Intersection</b>	<b>-</b>	<b>1.01</b>	<b>28.8</b>	<b>C</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>													
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.26	16.5	B				- Mitigation not required.
Fulton Street	WB	-	-	-	-	R	0.69	36.1	D				
<b>Overall Intersection</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.46</b>	<b>24.7</b>	<b>C</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>													
West Street (NYS Rt. 9A)	NB	L	0.69	59.8	E	L	0.54	19.4	B				- Mitigation not required.
		TR	0.70	15.5	B	TR	0.38	18.4	B				
	SB	L	0.81	66.9	E	L	0.43	12.6	B				
		TR	0.89	21.0	C	TR	0.58	23.6	C				
Liberty Street	EB	LTR	0.90	62.0	E	LTR	0.36	30.8	C				
	WB	DeFL	0.43	43.7	D	-	-	-	-				
		TR	0.36	40.6	D	-	-	-	-				
<b>Overall Intersection</b>	<b>-</b>	<b>0.88</b>	<b>27.2</b>	<b>C</b>	<b>-</b>	<b>0.65</b>	<b>21.8</b>	<b>C</b>					
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>													
West Street (NYS Rt. 9A)	NB	TR	0.96	103.1	F	T	0.66	14.2	B				- Mitigation not required.
	SB	TR	1.02	86.9	F	TR	0.94	42.4	D				
Albany Street	EB	LTR	1.00	87.2	F	LR	0.55	41.9	D				
	WB	-	-	-	-	L	0.23	32.2	C				
		-	-	-	-	TR	0.21	32.4	C				
<b>Overall Intersection</b>	<b>-</b>	<b>1.01</b>	<b>93.7</b>	<b>F</b>	<b>-</b>	<b>0.82</b>	<b>29.4</b>	<b>C</b>					
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>													
West Street (NYS Rt.9A)	NB	TR	1.08	120.0+	F*	TR	1.20+	120.0+	F*				- Meaningful TSM mitigation measures are not available.
	R		1.06	104.1	F	R	1.07	107.3	F				
	SB	T	1.03	103.0	F	TR	1.20+	120.0+	F*				
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B				
	WB	L	0.93	120.0+	F*	L	1.05	120.0+	F*				
		R	0.86	120.0+	F*	R	1.07	120.0+	F*				
<b>Overall Intersection</b>	<b>-</b>	<b>0.99</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.14</b>	<b>120.0+</b>	<b>F*</b>					

TABLE E.2-21  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>UNIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)													
7 West Street (NYS Rt.9A) at Barclay Barclay Street	WB	R	0.60	33.9	D	R	0.25	13.0	B					- Mitigation not required.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



TABLE E.2-22  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.11	89.4	F	TR	1.20+	120.0+	F*	TR	1.17	110.7	F	- Partially mitigated.
	SB	L	0.85	24.9	C	L	0.84	30.6	C	L	0.85	39.0	D	
Chambers Street	TR		1.04	64.7	E	TR	1.13	93.3	F	TR	0.88	10.3	B	
	EB	LTR	0.87	85.3	F	LTR	0.49	42.3	D	LTR	0.46	43.4	D	
	WB	LT	0.94	77.6	E	LT	0.99	91.7	F	LT	0.91	75.8	E	
	R		0.70	30.0	C	R	0.45	26.3	C	R	0.51	35.1	D	
<b>Overall Intersection</b>	-	<b>1.06</b>	<b>71.6</b>	<b>E</b>	-	<b>1.18</b>	<b>118.4</b>	<b>F</b>	-	<b>1.17</b>	<b>61.7</b>	<b>E</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.02	89.4	F					- Meaningful TSM mitigation measures are not available.
	TR		1.02	42.2	D	TR	1.20+	120.0+	F*					
Vesey Street	SB	L	0.14	8.7	A	L	1.20+	120.0+	F*					
	TR		0.66	4.0	A	TR	1.20+	120.0+	F*					
	EB	LTR	1.06	97.6	F	L	0.48	37.8	D					
	-	-	-	-	-	TR	0.93	80.7	F					
WB	L	1.20	120.0+	F*	L	0.98	89.5	F						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-	<b>1.19</b>	<b>47.7</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.37	12.7	B	T	0.39	14.9	B	- Modify signal timing (shift 4 s of green time from NB phase to WB phase).
	WB	-	-	-	-	R	0.84	56.0	E	R	0.73	42.4	D	
<b>Overall Intersection</b>	-	-	-	-	-	<b>0.54</b>	<b>23.9</b>	<b>C</b>	-	<b>0.53</b>	<b>22.0</b>	<b>C</b>		
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	1.20+	120.0+	F*	L	0.72	27.3	C	L	0.61	16.5	B	- Modify signal timing (shift 6 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR		1.06	64.2	E	TR	0.64	22.9	C	TR	0.64	22.9	C	
Liberty Street	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
	TR		0.81	18.1	B	TR	0.61	22.4	C	TR	0.61	22.4	C	
	EB	DefL	1.20+	120.0+	F*	LTR	0.51	33.6	C	LTR	0.60	39.9	D	
	TR		0.43	41.3	D	-	-	-	-	-	-	-	-	
WB	LTR	0.29	37.2	D	-	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-	<b>1.20+</b>	<b>90.8</b>	<b>F</b>	-	<b>1.13</b>	<b>119.5</b>	<b>F</b>	-	<b>1.13</b>	<b>89.6</b>	<b>F</b>		
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.08	120.0+	F*	T	0.86	30.0	C	T	0.86	30.0	C	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	SB	TR	0.98	96.6	F	TR	0.91	48.4	D	TR	0.91	48.4	D	
Albany Street	EB	LTR	1.20	120.0+	F*	LR	1.20+	120.0+	F*	LR	1.05	105.4	F	
	WB	-	-	-	-	L	0.47	37.4	D	L	0.47	37.4	D	
						TR	0.32	33.7	C	R	0.32	33.7	C	
<b>Overall Intersection</b>	-	<b>1.12</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.14</b>	<b>52.8</b>	<b>D</b>	-	<b>0.95</b>	<b>40.4</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.19	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
	R		1.16	120.0+	F*	R	1.20+	120.0+	F*					
Brooklyn Battery Tunnel	SB	T	1.17	120.0+	F*	TR	1.20+	120.0+	F*					
	EB	R	0.10	12.7	B	R	0.63	26.6	C					
	WB	L	1.07	120.0+	F*	L	1.08	120.0+	F*					
	R		1.13	120.0+	F*	R	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	<b>1.15</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

TABLE E.2-22  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>UN SIGNALIZED INTERSECTIONS</b>													
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Barclay Street	WB	R	0.60	44.9	E	R	0.25	13.2	B				- Mitigation not required.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-23  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.96	29.4	C	TR	1.14	97.2	F	TR	0.99	31.0	C	- Modify signal timing (increase cycle length from 120 s to 135 s).	
	SB	L	0.69	24.5	C	L	0.67	11.1	B	L	0.77	23.5	C		
		TR	0.74	17.8	B	TR	1.07	69.2	E	TR	0.83	8.9	A		
Chambers Street	EB	LTR	0.32	37.6	D	LTR	0.31	38.7	D	LTR	0.27	39.5	D		
	WB	LT	0.83	61.6	E	LT	0.85	66.6	E	LT	0.78	61.0	E		
		R	0.82	45.2	D	R	0.52	28.5	C	R	0.61	41.3	D		
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>27.4</b>	<b>C</b>	-	<b>1.04</b>	<b>76.6</b>	<b>E</b>	-	<b>0.93</b>	<b>23.0</b>	<b>C</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.87	63.4	E						- Meaningful TSM mitigation measures are not available.
	TR	0.75	12.8	B	TR	1.20+	120.0+	F*							
	SB	L	0.21	5.0	A	L	1.20+	120.0+	F*						
	TR	0.56	3.4	A	TR	1.20+	120.0+	F*							
Vesey Street	EB	De/L	1.20+	120.0+	F*	L	0.32	34.1	C						
	TR	1.20+	120.0+	F*	TR	1.12	120.0+	F*							
	WB	L	0.88	62.9	E	L	1.00	110.9	F						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-		<b>1.11</b>	<b>42.4</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.30	16.9	B					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.69	35.0	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.48</b>	<b>23.6</b>	<b>C</b>						
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.65	60.2	E	L	0.57	18.4	B	L	0.43	5.5	A	- Modify signal timing (shift 12.5 s of green time from EB phase to NB/SB exclusive left-turn phase).	
	TR	0.77	17.0	B	TR	0.53	21.0	C	TR	0.53	21.0	C			
	SB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*		
	TR	0.69	15.3	B	TR	0.52	20.6	C	TR	0.52	20.6	C			
Liberty Street	EB	De/L	1.20+	120.0+	F*	LTR	0.42	31.8	C	LTR	0.60	45.0	D		
	TR	0.43	42.6	D	-	-	-	-	-	-	-	-			
	WB	LTR	0.60	49.3	D	-	-	-	-	-	-	-			
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>38.7</b>	<b>D</b>	-	<b>1.05</b>	<b>95.7</b>	<b>F</b>	-	<b>1.05</b>	<b>51.8</b>	<b>D</b>		
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.01	120.0+	F*	T	0.79	26.0	C						- Mitigation not required.
	SB	TR	0.96	84.3	F	TR	0.94	68.3	E						
Albany Street	EB	LTR	1.14	120.0+	F*	LR	0.59	43.6	D						
	WB	-	-	-	-	L	0.46	36.7	D						
		-	-	-	-	TR	0.56	40.8	D						
<b>Overall Intersection</b>	-		<b>1.05</b>	<b>117.3</b>	<b>F</b>	-	<b>0.83</b>	<b>43.7</b>	<b>D</b>						
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.15	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
	R	1.03	76.5	E	R	1.15	117.2	F							
	SB	T	1.15	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.21	22.1	C						
	WB	L	0.85	120.0+	F*	L	1.03	120.0+	F*						
	R	1.05	120.0+	F*	R	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-		<b>1.11</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>UNSIGNALIZED INTERSECTIONS</b>															

TABLE E.2-23  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control		
			Delay	LOS			Delay	LOS			Delay	LOS	
<b>WEST STREET CORRIDOR</b>													
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)												
7 West Street (NYS Rt.9A) at Barclay Barclay Street	WB	R	0.67	38.4	E	R	0.34	14.6	B				- Mitigation not required.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-24  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.15	107.2	F	TR	1.14	97.6	F	TR	1.09	78.2	E	- Modify signal timing (increase cycle length from 120 s to 135 s).	
	SB	L	0.39	12.8	B	L	0.62	9.3	A	L	0.68	15.7	B		
		TR	1.07	75.1	E	TR	1.16	105.2	F	TR	0.92	13.7	B		
Chambers Street	EB	LTR	0.61	43.5	D	LTR	0.36	40.7	D	LTR	0.28	38.4	D		
	WB	LT	1.10	119.6	F	LT	1.08	120.0+	F*	LT	0.94	83.8	F		
		R	0.67	26.2	C	R	0.75	36.7	D	R	0.78	44.3	D		
<b>Overall Intersection</b>	-		<b>1.08</b>	<b>83.3</b>	<b>F</b>	-	<b>1.10</b>	<b>93.5</b>	<b>F</b>	-	<b>1.03</b>	<b>45.4</b>	<b>D</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.01	81.8	F						- Meaningful TSM mitigation measures are not available.
		TR	0.82	14.3	B	TR	1.20+	120.0+	F*						
	SB	L	0.16	5.4	A	L	1.20+	120.0+	F*						
		TR	0.68	4.1	A	TR	1.02	114.3	F						
Vesey Street	EB	LTR	1.20+	120.0+	F*	L	0.29	37.1	D						
		-	1.20+	120.0+	F*	TR	1.06	112.5	F						
	WB	L	1.00	93.0	F	L	1.20+	120.0+	F*						
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>75.7</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.26	16.5	B					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.72	38.4	D						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.47</b>	<b>25.9</b>	<b>C</b>						
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.81	67.1	E	L	0.66	24.6	C					- Mitigation not required.	
		TR	0.72	15.9	B	TR	0.39	18.5	B						
	SB	L	0.98	91.8	F	L	0.83	30.8	C						
		TR	0.93	23.6	C	TR	0.59	24.3	C						
Liberty Street	EB	DefL	1.04	105.8	F	LTR	0.48	33.0	C						
	WB	TR	1.15	120.0+	F*	-	-	-	-						
		DefL	0.44	43.9	D	-	-	-	-						
		TR	0.37	40.8	D										
<b>Overall Intersection</b>	-		<b>1.00</b>	<b>37.6</b>	<b>D</b>	-	<b>0.76</b>	<b>25.8</b>	<b>C</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.00	120.0+	F*	T	0.73	19.3	B					- Mitigation not required.	
	SB	TR	1.04	99.9	F	TR	0.99	78.3	E						
Albany Street	EB	LTR	1.20+	120.0+	F*	LR	0.88	68.8	E						
	WB	-	-	-	-	L	0.61	41.9	D						
		-	-	-	-	TR	0.50	38.6	D						
<b>Overall Intersection</b>	-		<b>1.10</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.95</b>	<b>49.6</b>	<b>D</b>						
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	TR	1.14	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
		R	1.10	120.0+	F*	R	1.13	120.0+	F*						
	SB	T	1.10	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B						
	WB	L	0.94	120.0+	F*	L	1.07	120.0+	F*						
		R	0.90	120.0+	F*	R	1.13	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

TABLE E.2-24  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>UNIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
5 West Street (NYS Rt.9A) at Rector Street	ANALYSIS NOT NEEDED. (FREE FLOW)													
7 West Street (NYS Rt.9A) at Barclay Barclay Street	WB	R	0.67	41.7	E	R	0.31	14.5	B					- Mitigation not required.

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-25  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.96	96.3	F					- Meaningful TSM mitigation measures are not available.
		TR	0.97	21.8	C	TR	1.20+	120.0+	F*					
	SB	L	0.12	7.4	A	L	1.04	118.7	F					
		TR	0.58	3.6	A	TR	1.01	53.6	D					
Vesey Street	EB	LTR	1.05	96.3	F	L	0.69	45.7	D					
		-	-	-	-	TR	1.06	120.0+	F*					
	WB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*					
		LTR	0.96	80.8	F	TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>			<b>1.04</b>	<b>29.0</b>	<b>C</b>		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.96	93.1	F	L	0.56	55.1	E	L	0.50	51.4	D	- Modify signal timing (shift 2 s of green time from NB/SB phase to NB/SB exclusive left turn phase).
		TR	1.04	54.3	D	TR	0.91	22.0	C	TR	0.93	26.0	C	
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.16	120.0+	F*	
		TR	0.74	16.4	B	TR	0.73	16.1	B	TR	0.75	18.0	B	
Liberty Street	EB	DefL	1.15	120.0+	F*	LTR	0.53	41.2	D	LTR	0.53	41.2	D	
		TR	0.42	41.0	D	-	-	-	-	-	-	-	-	
	WB	LTR	0.28	37.1	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>			<b>1.09</b>	<b>54.4</b>	<b>D</b>		<b>0.86</b>	<b>34.8</b>	<b>C</b>		<b>0.86</b>	<b>33.3</b>	<b>C</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.80	62.2	E	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).
		-	-	-	-	R	0.63	49.7	D	-	-	-	-	
West Broadway	SB	L	1.16	120.0+	F*	L	0.60	15.8	B	L	0.73	20.1	C	- SB Greenwich Street is STOP sign controlled.
		R	0.75	28.3	C	R	0.59	17.2	B	R	0.62	19.4	B	- Provide revised signal timing and phasing plan.
Vesey Street	EB	T	0.36	15.9	B	T	1.03	74.6	E	T	0.50	20.6	C	
	WB	T	0.15	13.9	B	T	0.52	34.3	C	T	0.25	17.8	B	
<b>Overall Intersection</b>			<b>0.76</b>	<b>69.4</b>	<b>E</b>		<b>0.73</b>	<b>41.5</b>	<b>D</b>		<b>0.63</b>	<b>19.8</b>	<b>B</b>	
<b>CHURCH STREET CORRIDOR</b>														
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LTR	0.99	30.3	C	LT	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
		-	-	-	-	R	1.04	97.7	F					
Vesey Street	EB	LT	1.01	58.8	E	LT	1.20+	120.0+	F*					
<b>Overall Intersection</b>			<b>1.00</b>	<b>40.0</b>	<b>D</b>		<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>BROADWAY CORRIDOR</b>														
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.70	25.9	C	L	0.84	28.8	C	L	0.57	24.3	C	- Prohibit parking along the north side of EB Vesey Street.
		LT	0.61	19.9	B	LT	0.40	13.5	B	T	0.78	30.2	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
Vesey Street	EB	L	0.91	63.6	E	L	1.20+	120.0+	F*	L	0.64	39.3	D	
		LTR	0.97	60.9	E	LTR	1.20+	120.0+	F*	LTR	0.93	54.7	D	- Modify signal timing (shift 10 s of green time from SB phase to EB phase).
<b>Overall Intersection</b>			<b>0.57</b>	<b>37.4</b>	<b>D</b>		<b>0.66</b>	<b>120.0+</b>	<b>F*</b>		<b>0.55</b>	<b>36.4</b>	<b>D</b>	
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.72	8.4	A	LT	0.60	11.7	B					- Mitigation not required.
Liberty Street	EB	TR	0.51	28.2	C	TR	0.27	24.7	C					
<b>Overall Intersection</b>			<b>0.65</b>	<b>13.8</b>	<b>B</b>		<b>0.49</b>	<b>14.6</b>	<b>B</b>					

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-26  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A AT-GRADE  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
NB	-	-	-	-	L	0.66	63.3	E						- Meaningful TSM mitigation measures are not available.	
West Street (NYS Rt. 9A)	TR	0.69	12.0	B	TR	0.95	45.6	D							
	SB	L	0.19	4.5	A	L	1.20+	120.0+	F*						
	TR	0.48	3.1	A	TR	0.90	31.7	C							
Vesey Street	EB	LTR	0.75	49.4	D	L	0.43	34.0	C						
	-	-	-	-	TR	1.20+	120.0+	F*							
	WB	L	0.80	54.4	D	L	1.20+	120.0+	F*						
	LTR	1.01	95.3	F	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-	<b>0.91</b>	<b>17.6</b>	<b>B</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.43	53.3	D	L	0.49	52.5	D	L	0.29	39.7	D	- Modify signal timing (shift 3 s of green time from EB phase to NB/SB exclusive left turn phase; shift 8 of green time from NB/SB phase to NB/SB exclusive left turn phase).	
	TR	0.75	16.5	B	TR	0.76	16.9	B	TR	0.87	27.0	C			
	SB	L	0.79	68.2	E	L	1.20+	120.0+	F*	L	0.90	67.3	E		
	TR	0.63	14.3	B	TR	0.66	14.8	B	TR	0.75	22.7	C			
Liberty Street	EB	DefL	0.69	58.0	E	LTR	0.37	38.0	D	LTR	0.41	41.0	D		
	TR	0.43	42.5	D	-	-	-	-	-	-	-	-	-		
	WB	LTR	0.60	49.3	D	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	-	<b>0.74</b>	<b>22.2</b>	<b>C</b>	-	<b>0.76</b>	<b>44.3</b>	<b>D</b>	-	<b>0.76</b>	<b>30.1</b>	<b>C</b>			
<b>WEST BROADWAY CORRIDOR</b>															
<b>13 West Broadway/Greenwich Street at Vesey Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.75	56.7	E	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).	
	-	-	-	-	-	R	0.28	37.1	D	-	-	-	-	-	
West Broadway	SB	L	0.60	21.8	C	L	0.39	12.7	B	L	0.50	15.3	B	- SB Greenwich Street is STOP sign controlled.	
	R	0.81	32.0	C	R	0.59	17.1	B	R	0.62	19.3	B	- Provide revised signal timing and phasing plan.		
Vesey Street	EB	T	0.29	15.2	B	T	1.18	120.0+	F*	T	0.57	21.7	C		
	WB	T	0.14	13.8	B	T	0.61	36.1	D	T	0.30	18.2	B		
<b>Overall Intersection</b>	-	<b>0.55</b>	<b>21.0</b>	<b>C</b>	-	<b>0.74</b>	<b>65.4</b>	<b>E</b>	-	<b>0.60</b>	<b>19.1</b>	<b>B</b>			
<b>CHURCH STREET CORRIDOR</b>															
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LT	1.08	68.8	E	LT	1.16	103.3	F						- Meaningful TSM mitigation measures are not available.
	R	0.55	12.7	B	R	1.20+	120.0+	F*							
Vesey Street	EB	LT	0.61	25.9	C	LT	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-	<b>0.89</b>	<b>50.5</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>BROADWAY CORRIDOR</b>															
<b>33 Broadway at Vesey Street / Ann Street</b>															
Broadway	SB	L	0.74	27.9	C	L	0.59	18.1	B	L	0.47	27.2	C	- Partially mitigated.	
	LT	0.54	18.9	B	LT	0.41	13.5	B	T	0.91	44.7	D	- Prohibit parking along the north side of EB Vesey Street.		
Vesey Street	EB	L	0.56	36.8	D	L	1.20+	120.0+	F*	L	0.75	39.4	D	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).	
	LTR	0.72	38.2	D	LTR	1.20+	120.0+	F*	LTR	0.83	38.9	D			
<b>Overall Intersection</b>	-	<b>0.51</b>	<b>27.0</b>	<b>C</b>	-	<b>0.60</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.56</b>	<b>39.0</b>	<b>D</b>	- Modify signal timing (shift 15 s of green time from SB phase to EB phase).		
<b>37 Broadway at Liberty Street</b>															
Broadway	SB	LT	0.69	13.8	B	LT	0.53	10.5	B						- Mitigation not required.
Liberty Street	EB	TR	0.65	37.5	D	TR	0.34	25.7	C						
<b>Overall Intersection</b>	-	<b>0.68</b>	<b>19.7</b>	<b>B</b>	-	<b>0.47</b>	<b>14.5</b>	<b>B</b>							

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).





TABLE E.2-28  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS	MvL	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.16	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
		TR	1.02	42.2	D	TR	1.20+	120.0+	F*						
	SB	L	0.14	8.7	A	L	1.20+	120.0+	F*						
		TR	0.66	4.0	A	TR	1.20+	120.0+	F*						
Vesey Street	EB	LTR	1.06	97.6	F	L	0.74	52.4	D						
		-	-	-	-	TR	1.08	120.0+	F*						
	WB	L	1.20	120.0+	F*	L	1.20+	120.0+	F*						
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	<b>-</b>	<b>1.19</b>	<b>47.7</b>	<b>D</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	1.20+	120.0+	F*	L	0.77	65.3	E	L	0.43	40.7	D		- Modify signal timing (shift 9 s of green time and 1 s of all red time from EB phase to NB/SB exclusive left turn phase; shift 3 s of green time from NB/SB phase to NB/SB exclusive left turn phase).
		TR	1.06	64.2	E	TR	1.01	45.2	D	TR	1.06	62.6	E		
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*		
		TR	0.81	18.1	B	TR	0.81	18.1	B	TR	0.85	21.9	C		
Liberty Street	EB	DefL	1.20+	120.0+	F*	LTR	0.67	45.2	D	LTR	0.95	78.8	E		
		TR	0.43	41.3	D	-	-	-	-	-	-	-	-		
	WB	LTR	0.29	37.2	D	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>90.8</b>	<b>F</b>	<b>-</b>	<b>1.19</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.18</b>	<b>82.1</b>	<b>F</b>			
<b>WEST BROADWAY CORRIDOR</b>															
<b>13 West Broadway/Greenwich Street at Vesey Street</b>															
Greenwich Street	SB	-	-	-	-	L	0.80	62.2	E	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway). - SB Greenwich Street is STOP sign controlled. - Provide revised signal timing and phasing plan.	
		-	-	-	-	R	0.86	72.6	E	-	-	-	-		
West Broadway	SB	L	1.20+	120.0+	F*	L	0.63	16.5	B	L	0.77	21.5	C		
		R	0.77	29.4	C	R	0.71	21.1	C	R	0.75	24.5	C		
Vesey Street	EB	T	0.39	16.2	B	T	1.20+	120.0+	F*	T	0.61	22.3	C		
		WB	0.23	14.6	B	T	0.96	57.4	E	T	0.47	20.2	C		
<b>Overall Intersection</b>	<b>-</b>	<b>0.80</b>	<b>77.1</b>	<b>E</b>	<b>-</b>	<b>0.86</b>	<b>73.7</b>	<b>E</b>	<b>-</b>	<b>0.69</b>	<b>21.9</b>	<b>C</b>			
<b>CHURCH STREET CORRIDOR</b>															
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LTR	1.10	74.4	E	LT	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
		-	-	-	-	R	1.20+	120.0+	F*						
Vesey Street	EB	LT	1.08	78.8	E	LT	1.20+	120.0+	F*						
<b>Overall Intersection</b>	<b>-</b>	<b>1.09</b>	<b>75.8</b>	<b>E</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>BROADWAY CORRIDOR</b>															
<b>33 Broadway at Vesey Street / Ann Street</b>															
Broadway	SB	L	0.71	26.2	C	L	0.85	30.1	C	L	0.58	24.5	C	- Prohibit parking along the north side of EB Vesey Street. - Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only). - Modify signal timing (shift 10 s of green time from SB phase to EB phase).	
		LT	0.65	20.7	C	LT	0.49	14.4	B	T	0.94	43.3	D		
Vesey Street	EB	L	0.95	72.2	E	L	1.20+	120.0+	F*	L	0.95	70.7	E		
		LTR	1.08	93.6	F	LTR	1.20+	120.0+	F*	LTR	1.04	80.1	F		
<b>Overall Intersection</b>	<b>-</b>	<b>0.59</b>	<b>48.4</b>	<b>D</b>	<b>-</b>	<b>0.72</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.62</b>	<b>52.5</b>	<b>D</b>			
<b>37 Broadway at Liberty Street</b>															
Broadway	SB	LT	0.76	9.3	A	LT	0.68	13.4	B						- Mitigation not required.
Liberty Street	EB	TR	0.66	31.4	C	TR	0.46	27.2	C						
<b>Overall Intersection</b>	<b>-</b>	<b>0.73</b>	<b>16.5</b>	<b>B</b>	<b>-</b>	<b>0.61</b>	<b>17.7</b>	<b>B</b>							

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-29  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
NB	-	-	-	-	L	0.77	70.3	E						- Meaningful TSM mitigation measures are not available.	
West Street (NYS Rt. 9A)	TR	0.75	12.8	B	TR	1.09	105	F							
	SB	L	0.21	5.0	A	L	1.20+	120.0+	F*						
	TR	0.56	3.4	A	TR	1.2	120.0+	F*							
Vesey Street	EB	DefL	1.20+	120.0+	F*	L	0.46	36.7	D						
	TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
	WB	L	0.88	62.9	E	L	1.20+	120.0+	F*						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>	<b>-</b>	<b>1.11</b>	<b>47.7</b>	<b>D</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.65	60.2	E	L	0.66	58.0	E	L	0.26	27.8	C	- Partially mitigated.	
	TR	0.77	17.0	B	TR	0.86	20.2	C	TR	0.99	39.7	D	- Modify signal timing (shift 16 s of green time and 1 s of all red time from EB phase to NB/SB exclusive left turn phase; shift 8 s of green time from NB/SB phase to NB/SB exclusive left turn phase).		
	SB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*	L	1.18	120.0+	F*		
	TR	0.69	15.3	B	TR	0.74	16.5	B	TR	0.85	26.0	C			
Liberty Street	EB	DefL	1.20+	120.0+	F*	LTR	0.55	41.8	D	LTR	1.15	120.0+	F*		
	TR	0.43	42.6	D	-	-	-	-	-	-	-	-	-		
	WB	LTR	0.60	49.3	D	-	-	-	-	-	-	-	-		
<b>Overall Intersection</b>	<b>-</b>	<b>0.97</b>	<b>38.7</b>	<b>D</b>	<b>-</b>	<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.08</b>	<b>54.8</b>	<b>D</b>			
<b>WEST BROADWAY CORRIDOR</b>															
<b>13 West Broadway/Greenwich Street at Vesey Street</b>															
Greenwich Street	SB	-	-	-	L	0.75	56.7	E	-	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).	
	-	-	-	-	R	0.42	40.9	D	-	-	-	-	-	- SB Greenwich Street is STOP sign controlled.	
West Broadway	SB	L	0.63	22.7	C	L	0.42	13.1	B	L	0.53	15.8	B	- Provide revised signal timing and phasing plan.	
	R	0.83	33.3	C	R	0.67	19.4	B	R	0.71	22.3	C			
Vesey Street	EB	T	0.32	15.4	B	T	1.20+	120.0+	F*	T	0.69	23.9	C		
	WB	T	0.23	14.6	B	T	1.02	72.4	E	T	0.50	20.6	C		
<b>Overall Intersection</b>	<b>-</b>	<b>0.57</b>	<b>21.0</b>	<b>C</b>	<b>-</b>	<b>0.85</b>	<b>112.0</b>	<b>F</b>	<b>-</b>	<b>0.70</b>	<b>21.1</b>	<b>C</b>			
<b>CHURCH STREET CORRIDOR</b>															
<b>24 Church Street at Vesey Street</b>															
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	R	0.65	15.8	B	R	1.20+	120.0+	F*							
Vesey Street	EB	LT	0.65	26.8	C	LT	1.20+	120.0+	F*						
<b>Overall Intersection</b>	<b>-</b>	<b>1.03</b>	<b>99.8</b>	<b>F</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>							
<b>BROADWAY CORRIDOR</b>															
<b>33 Broadway at Vesey Street / Ann Street</b>															
Broadway	SB	L	0.75	28.5	C	L	0.60	18.4	B	L	0.42	22.8	C	- Partially mitigated.	
	LT	0.58	19.5	B	LT	0.48	14.3	B	T	0.93	42.9	D	- Prohibit parking along the north side of EB Vesey Street.		
Vesey Street	EB	L	0.61	39.0	D	L	1.20+	120.0+	F*	L	0.77	45.8	D	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).	
	LTR	0.84	45.1	D	LTR	1.20+	120.0+	F*	LTR	1.20+	120.0+	F*			
<b>Overall Intersection</b>	<b>-</b>	<b>0.56</b>	<b>29.5</b>	<b>C</b>	<b>-</b>	<b>0.65</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.70</b>	<b>87.4</b>	<b>F</b>	- Modify signal timing (shift 11 s of green time from SB phase to EB phase).		
<b>37 Broadway at Liberty Street</b>															
Broadway	SB	LT	0.73	14.7	B	LT	0.60	11.60	B						- Mitigation not required.
Liberty Street	EB	TR	0.83	46.6	D	TR	0.51	28.30	C						
<b>Overall Intersection</b>	<b>-</b>	<b>0.76</b>	<b>24.4</b>	<b>C</b>	<b>-</b>	<b>0.57</b>	<b>17.10</b>	<b>B</b>							

**General Notes:**

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- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-30  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.82	74.8	E					- Meaningful TSM mitigation measures are not available.
		TR	0.82	14.3	B	TR	1.15	112.1	F					
	SB	L	0.16	5.4	A	L	1.08	120.0+	F*					
Vesey Street		TR	0.68	4.1	A	TR	1.20+	120.0+	F*					
	EB	Defl.	1.20+	120.0+	F*	L	0.41	35.0	D					
		TR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
	WB	L	1.00	93.0	F	L	1.20+	120.0+	F*					
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>75.7</b>	<b>E</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.81	67.1	E	L	0.77	66.1	E	L	0.41	42.4	D	- Partially mitigated
		TR	0.72	15.9	B	TR	0.84	18.8	B	TR	0.80	15.5	B	- Modify signal timing (shift 2 s of green time and 1 s of all red time from EB phase to NB/SB phase; shift 12 s of green time from EB phase to NB/SB exclusive left turn phase).
	SB	L	0.98	91.8	F	L	1.20+	120.0+	F*	L	1.18	120.0+	F*	
		TR	0.93	23.6	C	TR	1.03	64.9	E	TR	0.98	43.2	D	
Liberty Street	EB	Defl.	1.04	105.8	F	LTR	0.64	44.1	D	LTR	1.09	120.0+	F*	
		TR	1.15	120.0+	F*	-	-	-	-	-	-	-	-	
	WB	Defl.	0.44	43.9	D	-	-	-	-	-	-	-	-	
		TR	0.37	40.8	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	<b>-</b>	<b>1.00</b>	<b>37.6</b>	<b>D</b>	<b>-</b>	<b>1.07</b>	<b>96.4</b>	<b>F</b>	<b>-</b>	<b>1.05</b>	<b>47.1</b>	<b>D</b>	<b>-</b>	
<b>WEST BROADWAY CORRIDOR</b>														
<b>13 West Broadway/Greenwich Street at Vesey Street</b>														
Greenwich Street	SB	-	-	-	-	L	0.80	62.2	E	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).
		-	-	-	-	R	0.43	41.3	D	-	-	-	-	
West Broadway	SB	L	1.20+	120.0+	F*	L	0.67	17.3	B	L	0.80	22.9	C	- SB Greenwich Street is STOP sign controlled.
		R	0.95	49.2	D	R	0.64	18.6	B	R	0.67	21.2	C	- Provide revised signal timing and phasing plan.
Vesey Street	EB	T	0.33	15.5	B	T	1.20+	120.0+	F*	T	0.69	24.0	C	
	WB	T	0.25	14.7	B	T	1.05	79.5	E	T	0.51	20.8	C	
<b>Overall Intersection</b>	<b>-</b>	<b>0.79</b>	<b>64.7</b>	<b>E</b>	<b>-</b>	<b>0.86</b>	<b>109.4</b>	<b>F</b>	<b>-</b>	<b>0.75</b>	<b>22.5</b>	<b>C</b>	<b>-</b>	
<b>CHURCH STREET CORRIDOR</b>														
<b>24 Church Street at Vesey Street</b>														
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
		R	0.74	19.7	B	R	1.20+	120.0+	F*					
Vesey Street	EB	LT	0.90	38.9	D	LT	1.20+	120.0+	F*					
<b>Overall Intersection</b>	<b>-</b>	<b>1.13</b>	<b>101.2</b>	<b>F</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	
<b>BROADWAY CORRIDOR</b>														
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.89	37.9	D	L	0.96	44.2	D	L	0.71	30.8	C	- Partially mitigated.
		LT	0.58	19.3	B	LT	0.43	13.8	B	T	0.91	43.8	D	- Prohibit parking along the north side of EB Vesey Street.
Vesey Street	EB	L	1.06	99.7	F	L	1.20+	120.0+	F*	L	0.83	46.7	D	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).
		LTR	0.83	43.3	D	LTR	1.20+	120.0+	F*	LTR	1.00	64.0	E	
<b>Overall Intersection</b>	<b>-</b>	<b>0.68</b>	<b>39.6</b>	<b>D</b>	<b>-</b>	<b>0.78</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>0.61</b>	<b>47.2</b>	<b>D</b>	<b>-</b>	- Modify signal timing (shift 13 s of green time from SB phase to EB phase).
<b>37 Broadway at Liberty Street</b>														
Broadway	SB	LT	0.70	13.9	B	LT	0.57	11.1	B					- Mitigation not required.
Liberty Street	EB	TR	0.65	36.9	D	TR	0.41	26.7	C					
<b>Overall Intersection</b>	<b>-</b>	<b>0.68</b>	<b>20.0</b>	<b>B</b>	<b>-</b>	<b>0.52</b>	<b>15.6</b>	<b>B</b>	<b>-</b>	<b>0.52</b>	<b>15.6</b>	<b>B</b>	<b>-</b>	

**General Notes:**

- (i). Control delay is measured in seconds per vehicle.
- (ii). Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii). Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv). Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v). F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-31  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (8:15 - 9:15 AM)				Current 2009 Build (8:15 - 9:15 AM)				Current 2009 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS					
<b>SIGNALIZED INTERSECTIONS</b>																	
<b>WEST STREET CORRIDOR</b>																	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>																	
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.99	84.8	F	- Meaningful TSM mitigation measures are not available.							
		TR	0.97	21.8	C	TR	1.20+	120.0+	F*								
	SB	L	0.12	7.4	A	L	1.07	96.7	F								
		TR	0.58	3.6	A	TR	1.20+	120.0+	F*								
Vesey Street	EB	LTR	1.05	96.3	F	L	0.46	33.2	C								
		-	-	-	-	TR	0.92	78.4	E								
	WB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*								
		LTR	0.96	80.8	F	TR	0.98	97.0	F								
<b>Overall Intersection</b>		-	<b>1.04</b>	<b>29.0</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>								
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>																	
West Street (NYS Rt. 9A)	NB	L	0.96	93.1	F	L	0.48	14.9	B					- Mitigation not required.			
		TR	1.04	54.3	D	TR	0.53	20.7	C								
	SB	L	1.20+	120.0+	F*	L	1.12	90.1	F								
		TR	0.74	16.4	B	TR	0.49	20.2	C								
Liberty Street	EB	DefL	1.15	120.0+	F*	LTR	0.40	31.4	C								
		TR	0.42	41.0	D	-	-	-	-								
	WB	LTR	0.28	37.1	D	-	-	-	-								
<b>Overall Intersection</b>		-	<b>1.09</b>	<b>54.4</b>	<b>D</b>	-	<b>0.85</b>	<b>33.7</b>	<b>C</b>								

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
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- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-32  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (12:00 - 1:00 PM)				Current 2009 Build (12:00 - 1:00 PM)				Current 2009 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.69	41.4	D					- Meaningful TSM mitigation measures are not available.
	TR	0.69	12.0	B	TR	1.20+	120.0+	F*						
	SB	L	0.19	4.5	A	L	1.20+	120.0+	F*					
	TR	0.48	3.1	A	TR	0.91	61.9	E						
Vesey Street	EB	LTR	0.75	49.4	D	L	0.28	28.7	C					
	-	-	-	-	TR	1.11	120.0+	F*						
	WB	L	0.80	54.4	D	L	1.20+	120.0+	F*					
	LTR	1.01	95.3	F	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-	<b>0.91</b>	<b>17.6</b>	<b>B</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.43	53.3	D	L	0.38	11.6	B	L	0.33	7.2	A	- Modify signal timing (shift 6 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR	0.75	16.5	B	TR	0.49	20.1	C	TR	0.49	20.1	C		
	SB	L	0.79	68.2	E	L	1.20+	120.0+	F*	L	1.06	65.5	E	
	TR	0.63	14.3	B	TR	0.40	18.7	B	TR	0.40	18.7	B		
Liberty Street	EB	DeFl.	0.69	58.0	E	LTR	0.28	29.5	C	LTR	0.33	34.4	C	
	TR	0.43	42.5	D	-	-	-	-	-	-	-	-	-	
	WB	LTR	0.60	49.3	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-	<b>0.74</b>	<b>22.2</b>	<b>C</b>	-	<b>0.84</b>	<b>44.7</b>	<b>D</b>	-	<b>0.84</b>	<b>30.7</b>	<b>C</b>		

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-33  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2009 NO ACTION CONDITION vs CURRENT 2009 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2009 No Action (5:00 - 6:00 PM)				Current 2009 Build (5:00 - 6:00 PM)				Current 2009 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.68	43.6	D					- Meaningful TSM mitigation measures are not available.
		TR	0.77	13.2	B	TR	1.20+	120.0+	F*					
	SB	L	0.15	4.9	A	L	1.06	92.7	F					
Vesey Street		TR	0.64	3.9	A	TR	1.01	101.6	F					
	EB	LTR	1.01	84.7	F	L	0.25	29.7	C					
		-	-	-	-	TR	1.04	107.4	F					
	WB	L	0.91	71.8	E	L	1.20+	120.0+	F*					
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*					
	<b>Overall Intersection</b>	-	<b>1.01</b>	<b>28.8</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.69	59.8	E	L	0.54	19.4	B	L	0.49	15.4	B	- Modify signal timing (shift 3 s of green time from EB phase to NB/SB exclusive left-turn phase).
		TR	0.70	15.5	B	TR	0.47	19.7	B	TR	0.47	19.7	B	
	SB	L	0.81	66.9	E	L	1.07	95.5	F	L	0.99	60.2	E	
		TR	0.89	21.0	C	TR	0.58	23.6	C	TR	0.58	23.6	C	
Liberty Street	EB	LTR	0.90	62.0	E	LTR	0.36	30.8	C	LTR	0.39	33.4	C	
		-	-	-	-	-	-	-	-	-	-	-	-	
	WB	DefL	0.43	43.7	D	-	-	-	-	-	-	-	-	
		TR	0.36	40.6	D	-	-	-	-	-	-	-	-	
	<b>Overall Intersection</b>	-	<b>0.88</b>	<b>27.2</b>	<b>C</b>	-	<b>0.81</b>	<b>36.6</b>	<b>D</b>	-	<b>0.81</b>	<b>29.9</b>	<b>C</b>	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-34  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.02	91.8	F					- Meaningful TSM mitigation measures are not available.
	TR	1.02	42.2	D		TR	1.20+	120.0+	F*					
	SB	L	0.14	8.7	A	L	1.20+	120.0+	F*					
	TR	0.66	4.0	A		TR	1.20+	120.0+	F*					
Vesey Street	EB	LTR	1.06	97.6	F	L	0.52	44.0	D					
	-	-	-	-		TR	0.93	80.7	F					
	WB	L	1.20	120.0+	F*	L	1.20+	120.0+	F*					
	LTR	1.20+	120.0+	F*		TR	1.20+	120.0+	F*					
<b>Overall Intersection</b>	-	<b>1.19</b>	<b>47.7</b>	<b>D</b>		-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	1.20+	120.0+	F*	L	0.72	27.3	C	L	0.57	12.4	B	- Partially mitigated.
	TR	1.06	64.2	E		TR	0.68	23.9	C	TR	0.68	23.9	C	- Modify signal timing (shift 9 s of green time from EB phase to NB/SB exclusive left-turn phase).
	SB	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
	TR	0.81	18.1	B		TR	0.61	22.4	C	TR	0.61	22.4	C	
Liberty Street	EB	DefL	1.20+	120.0+	F*	LTR	0.51	33.6	C	LTR	0.65	43.7	D	
	TR	0.43	41.3	D		-	-	-	-	-	-	-	-	
	WB	LTR	0.29	37.2	D	-	-	-	-	-	-	-	-	
<b>Overall Intersection</b>	-	<b>1.20+</b>	<b>90.8</b>	<b>F</b>		-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



TABLE E.2-35  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control			
			Delay	LOS			Delay	LOS			Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.70	46.1	D					- Meaningful TSM mitigation measures are not available.
	TR	0.75	12.8	B	TR	1.20+	120.0+	F*						
	SB	L	0.21	5.0	A	L	1.20+	120.0+	F*					
	TR	0.56	3.4	A	TR	1.20+	120.0+	F*						
Vesey Street	EB	Defl.	1.20+	120.0+	F*	L	0.35	42.2	D					
	TR	1.20+	120.0+	F*	TR	1.12	120.0+	F*						
	WB	L	0.88	62.9	E	L	1.20+	120.0+	F*					
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>		-	<b>1.11</b>	<b>47.7</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>														
West Street (NYS Rt. 9A)	NB	L	0.65	60.2	E	L	0.57	18.4	B	L	0.43	5.9	A	- Partially mitigated.
	TR	0.77	17.0	B	TR	0.56	21.5	C		TR	0.56	21.5	C	- Modify signal timing (shift 12 s of green time from EB phase to NB/SB exclusive left-turn phase).
	SB	L	1.14	120.0+	F*	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*	
	TR	0.69	15.3	B	TR	0.52	20.6	C		TR	0.52	20.6	C	
Liberty Street	EB	Defl.	1.20+	120.0+	F*	LTR	0.42	31.8	C	LTR	0.59	44.3	D	
	TR	0.43	42.6	D	-	-	-	-		-	-	-	-	
	WB	LTR	0.60	49.3	D	-	-	-		-	-	-	-	
<b>Overall Intersection</b>		-	<b>0.97</b>	<b>38.7</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-36  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION : PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS  
 NO VEHICULAR TRAFFIC ON GREENWICH AND FULTON STREET EXTENSIONS

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.80	54.2	D					- Meaningful TSM mitigation measures are not available.	
	TR	0.82	14.3	B	TR	1.20+	120.0+	F*							
	SB	L	0.16	5.4	A	L	1.12	110.3	F						
Vesey Street	TR	0.68	4.1	A	TR	1.17	120.0+	F*							
	EB	DefL	1.20+	120.0+	F*	L	0.30	44.2	D						
	TR	1.20+	120.0+	F*	TR	1.06	112.5	F							
	WB	L	1.00	93.0	F	L	1.20+	120.0+	F*						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>		-	<b>1.20+</b>	<b>75.7</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>4 West Street (NYS Rt. 9A) at Liberty Street</b>															
West Street (NYS Rt. 9A)	NB	L	0.81	67.1	E	L	0.66	24.7	C	L	0.50	10.0	A		- Partially mitigated. - Modify signal timing (shift 10 s of green time from EB phase to NB/SB exclusive left-turn phase).
	TR	0.72	15.9	B	TR	0.46	19.6	B	TR	0.46	9.6	A			
	SB	L	0.98	91.8	F	L	1.20+	120.0+	F*	L	1.20+	120.0+	F*		
	TR	0.93	23.6	C	TR	0.60	24.4	C	TR	0.60	24.4	C			
Liberty Street	EB	DefL	1.04	105.8	F	LTR	0.48	33.0	C	LTR	0.64	44.1	D		
	TR	1.15	120.0+	F*	-	-	-	-	-	-	-	-			
	WB	DefL	0.44	43.9	D	-	-	-	-	-	-	-			
	TR	0.37	40.8	D	-	-	-	-	-	-	-	-			
<b>Overall Intersection</b>		-	<b>1.00</b>	<b>37.6</b>	<b>D</b>	-	<b>1.03</b>	<b>87.6</b>	<b>F</b>	-	<b>1.03</b>	<b>56.2</b>	<b>E</b>		

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-37  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.09	81.4	F	TR	1.20+	120.0+	F*	TR	1.10	79.5	E	- Modify signal timing (increase cycle length from 120 s to 135 s).	
	SB	L	0.85	23.7	C	L	0.74	17.5	B	L	0.80	31.9	C		
		TR	1.03	59.8	E	TR	1.03	55.1	E	TR	0.94	24.0	C		
Chambers Street	EB	LTR	0.84	79.6	E	LTR	0.49	42.3	D	LTR	0.46	43.4	D		
	WB	LT	0.91	72.2	E	LT	0.93	78.0	E	LT	0.86	67.8	E		
		R	0.69	29.8	C	R	0.45	26.3	C	R	0.50	35.0	C		
<b>Overall Intersection</b>	-		<b>1.04</b>	<b>65.8</b>	<b>E</b>	-	<b>1.10</b>	<b>86.3</b>	<b>F</b>	-	<b>1.05</b>	<b>52.5</b>	<b>D</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.16	120.0+	F*						- Meaningful TSM mitigation measures are not available.
	TR	1.01	39.8	D	TR	1.20+	120.0+	F*							
	SB	L	0.14	8.4	A	L	1.20+	120.0+	F*						
	TR	0.65	4.0	A	TR	1.20	120.0+	F*							
Vesey Street	EB	LTR	1.06	98.2	F	L	0.76	55.7	E						
	-	-	-	-	-	TR	1.08	120.0+	F*						
	WB	L	1.15	120.0+	F*	L	1.20+	120.0+	F*						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>42.6</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	1.01	42.9	D					- Meaningful TSM mitigation measures are not available.	
Fulton Street	WB	-	-	-	-	R	0.76	47.8	D						
<b>Overall Intersection</b>	-		-	-	-	<b>0.92</b>	<b>43.3</b>	<b>D</b>							
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.08	120.0+	F*	T	1.12	120.0+	F*	NB	T	1.06	120.0+	F*	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane. - Modify signal timing (shift 4 s of green time from the EB/WB phase to the NB/SB phase).
	SB	TR	0.98	92.9	F	TR	1.02	118.4	F	SB	TR	0.97	86.8	F	
Albany Street	EB	LTR	1.17	120.0+	F*	LR	1.20+	120.0+	F*	EB	L	0.46	41.6	D	
	WB	-	-	-	-	L	0.33	34.1	C	R	0.74	55.7	E		
	-	-	-	-	-	TR	0.24	32.4	C	WB	L	0.38	38.3	D	
										TR	0.27	35.9	D		
<b>Overall Intersection</b>	-		<b>1.11</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.97</b>	<b>106.0</b>	<b>F</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.17	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
	R	1.13	120.0+	F*	R	1.16	120.0+	F*							
	SB	T	1.16	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.10	12.7	B	R	0.63	26.6	C						
	WB	L	1.07	120.0+	F*	L	1.08	120.0+	F*						
	R	1.12	120.0+	F*	R	1.20+	120.0+	F*							
<b>Overall Intersection</b>	-		<b>1.14</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>GREENWICH STREET CORRIDOR</b>															
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.11	19.1	B	R	0.02	17.6	B	NB	R	0.02	17.6		B
	SB	LT	0.92	55.7	E	LT	0.84	43.0	D	SB	L	0.34	21.9	C	
Rector Street	EB	TR	0.26	11.4	B	TR	0.48	14.8	B	T	0.40	22.6	C		
										EB	TR	0.48	14.8	B	
<b>Overall Intersection</b>	-		<b>0.52</b>	<b>40.7</b>	<b>D</b>	-	<b>0.63</b>	<b>30.2</b>	<b>C</b>	-	<b>0.45</b>	<b>18.9</b>	<b>B</b>		

TABLE E.2-37  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)					Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures		
	Mvt.	V/C	Control			Mvt.	V/C	Control			Mvt.	V/C	Control			
			Delay	LOS				Delay	LOS				Delay		LOS	
<b>CANAL STREET CORRIDOR</b>																
<b>16 Canal Street at Hudson Street</b>																
Hudson Street	NB	LTR	0.95	53.2	D	LTR	0.86	42.7	D	LTR	0.71	36.9	D	-	Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane.	
		R	0.87	55.4	E	R	0.57	36.3	D	R	0.66	43.1	D			
Canal Street	EB	L	1.01	76.6	E	L	1.20+	120.0+	F*	L	1.07	74.1	E	-	Modify signal timing (add 4 s to green time of EB/WB phase and 5 s to green time of EB/WB lead phase).	
		T	1.04	67.2	E	LT	1.07	70.5	E	LT	1.06	66.7	E			
	WB	T	0.98	68.1	E	T	1.12	111.7	F	T	0.99	65.3	E			
		R	1.16	100.3	F	R	1.20	120.0+	F*	R	1.11	92.1	F			
<b>Overall Intersection</b>	-		<b>1.10</b>	<b>72.7</b>	<b>E</b>	-	<b>1.11</b>	<b>88.2</b>	<b>F</b>	-	<b>1.02</b>	<b>62.5</b>	<b>E</b>			
<b>17 Canal Street at Varick Street</b>																
Varick Street	SB	L	0.25	23.8	C	L	0.20	23.1	C					-	Mitigation not required.	
		T	0.95	48.1	D	T	0.66	29.5	C							
		R	0.16	22.7	C	R	0.11	22.0	C							
Canal Street	EB	TR	0.47	10.9	B	TR	0.46	10.5	B							
	WB	LT	1.06	111.0	F	LT	1.12	102.6	F							
<b>Overall Intersection</b>	-		<b>0.63</b>	<b>67.7</b>	<b>E</b>	-	<b>0.53</b>	<b>49.3</b>	<b>D</b>							
<b>WEST BROADWAY CORRIDOR</b>																
<b>13 West Broadway/Greenwich Street at Vesey Street</b>																
Greenwich Street	SB	-	-	-	-	L	0.50	39.9	D	-	-	-	-	-	Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).	
		-	-	-	-	R	0.82	66.8	E	-	-	-	-	-		
West Broadway	SB	L	1.16	120.0+	F*	L	0.50	14.2	B	L	0.70	22.6	C	-	SB Greenwich Street is STOP sign controlled.	
		R	0.76	28.5	C	TR	0.44	3.3	A	TR	0.52	8.4	A	-	Provide revised signal timing and phasing plan.	
Vesey Street	EB	T	0.39	16.2	B	LR	1.20+	120.0+	F*	TR	0.68	21.1	C			
	WB	T	0.20	14.4	B	LT	0.60	36.7	D	LT	0.22	14.5	B			
<b>Overall Intersection</b>	-		<b>0.78</b>	<b>69.5</b>	<b>E</b>	-	<b>0.81</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.69</b>	<b>17.4</b>	<b>B</b>			
<b>CHURCH STREET CORRIDOR</b>																
<b>21 Church Street at Worth Street</b>																
Church Street	NB	LTR	0.69	15.6	B	LTR	1.20+	120.0+	F*	NB	LT	0.89	18.6	B	-	Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane.
Worth Street	EB	LT	0.86	52.0	D	LT	0.96	60.9	E	R	0.32	13.4	B			
	WB	TR	0.78	35.4	D	TR	0.98	62.3	E	EB	LT	0.90	48.9	D	-	Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane.
										WB	T	0.60	27.4	C		
										R	0.50	25.0	C	-	Modify signal timing (shift 2 s of green time from NB phase to EB/WB phase).	
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>23.9</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.90</b>	<b>24.3</b>	<b>C</b>			
<i>General Measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase;                  Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane;                  Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>																
<b>24 Church Street at Vesey Street</b>																
Church Street	NB	LTR	1.07	59.8	E	LT	1.20+	120.0+	F*	LTR	1.01	57.8	E	-	Apply General Measures.	
		-	-	-	-	R	1.20+	120.0+	F*	-	-	-	-	-	Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition.	
Vesey Street	EB	LT	1.05	68.9	E	LT	1.20+	120.0+	F*	LT	0.97	60.3	E	-	Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.	
<b>Overall Intersection</b>	-		<b>1.06</b>	<b>62.8</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.81</b>	<b>58.7</b>	<b>E</b>			
<b>25 Church Street at Fulton Street</b>																
Church Street	NB	T	0.84	15.3	B	LT	0.88	22.5	C	LT	0.95	37.7	D	-	Apply General Measures.	
Fulton Street	WB	R	0.79	45.9	D	TR	1.20+	120.0+	F*	TR	0.65	42.9	D	-	Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
<b>Overall Intersection</b>	-		<b>0.83</b>	<b>19.2</b>	<b>B</b>	-	<b>1.06</b>	<b>59.0</b>	<b>E</b>	-	<b>0.72</b>	<b>38.7</b>	<b>D</b>			

TABLE E.2-37  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)					Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures
	Mvt.	V/C	Control Delay	LOS		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
<b>27 Church Street at Cortlandt Street</b>														
Church Street	NB	T	0.73	11.8	B	T	0.68	10.7	B	T	0.81	25.8	C	- Apply General Measures.
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	0.86	58.5	E	
<b>Overall Intersection</b>	-	<b>0.99</b>	<b>71.5</b>	<b>E</b>	-	<b>1.02</b>	<b>73.7</b>	<b>E</b>	-	<b>0.68</b>	<b>32.9</b>	<b>C</b>		
<b>31 Broadway at Worth Street</b>														
Broadway	SB	LTR	0.65	14.0	B	LTR	0.79	69.6	E	LTR	0.67	43.4	D	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.
Worth Street	EB	TR	0.46	19.6	B	TR	1.02	120.0+	F*	TR	0.83	44.1	D	
	WB	L	0.17	16.2	B	LT	0.83	55.7	E	L	0.29	13.3	B	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.
	T	0.56	21.3	C	-	-	-	-	T	0.58	23.1	C	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane.	
<b>Overall Intersection</b>	-	<b>0.61</b>	<b>16.8</b>	<b>B</b>	-	<b>0.89</b>	<b>88.6</b>	<b>F</b>	-	<b>0.75</b>	<b>38.6</b>	<b>D</b>	- Modify signal timing (shift 7.5 s of green time from SB phase to EB/WB phase).	
<b>33 Broadway at Vesey Street / Ann Street</b>														
Broadway	SB	L	0.71	26.2	C	L	0.85	30.1	C	L	0.50	18.8	B	- Prohibit parking along the north side of EB Vesey Street.
	LT	0.64	20.5	C	LT	0.49	14.0	B	T	0.74	24.2	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).	
Vesey Street	EB	L	0.93	67.4	E	L	1.20+	120.0+	F*	L	0.85	61.5	E	
	LTR	1.06	85.0	F	LTR	1.20+	120.0+	F*	LTR	1.01	79.1	E		
<b>Overall Intersection</b>	-	<b>0.59</b>	<b>45.1</b>	<b>D</b>	-	<b>0.63</b>	<b>97.9</b>	<b>F</b>	-	<b>0.53</b>	<b>39.8</b>	<b>D</b>	- Modify signal timing (shift 5 s of green time from SB phase to EB phase).	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-38  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.93	26.2	C	TR	1.01	47.4	D	TR	0.91	21.9	C	- Modify signal timing (increase cycle length from 120 s to 135 s).	
	SB	L	0.68	19.7	B	L	0.61	10.0	B	L	0.71	18.5	B		
		TR	0.72	17.3	B	TR	0.93	27.5	C	TR	0.85	18.6	B		
Chambers Street	EB	LTR	0.31	37.2	D	LTR	0.29	37.9	D	LTR	0.25	39.0	D		
	WB	LT	0.77	55.9	E	LT	0.70	52.0	D	LT	0.65	51.2	D		
		R	0.81	44.4	D	R	0.49	27.7	C	R	0.55	36.7	D		
<b>Overall Intersection</b>	-		<b>0.98</b>	<b>25.2</b>	<b>C</b>	-	<b>0.92</b>	<b>36.6</b>	<b>D</b>	-	<b>0.84</b>	<b>22.2</b>	<b>C</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.89	83.7	F						- Meaningful TSM mitigation measures are not available.
		TR	0.73	12.6	B	TR	0.97	56.9	E						
	SB	L	0.21	4.9	A	L	1.20+	120.0+	F*						
		TR	0.54	3.3	A	TR	1.04	68.1	E						
Vesey Street	EB	LTR	0.75	49.5	D	L	0.48	37.4	D						
		-	-	-	-	TR	1.20+	120.0+	F*						
	WB	L	0.81	55.3	E	L	1.05	120.0+	F*						
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>26.6</b>	<b>C</b>	-	<b>1.12</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.89	30.5	C					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.51	28.2	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.71</b>	<b>30.2</b>	<b>C</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.99	120.0+	F*	T	0.88	51.9	D	NB	T	0.82	32.3	C	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane. - Modify signal timing (shift 5 s of green time from the EB/WB phase to the NB/SB phase).
	SB	TR	0.95	80.7	F	TR	1.02	120.0+	F*	SB	TR	0.96	80.3	F	
Albany Street	EB	LTR	1.08	109.8	F	LR	0.47	38.6	D	EB	L	0.17	35.3	D	
	WB	-	-	-	-	L	0.28	33.0	C		R	0.36	38.8	D	
		-	-	-	-	TR	0.42	36.4	D	WB	L	0.33	37.7	D	
											TR	0.48	42.3	D	
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>110.7</b>	<b>F</b>	-	<b>0.84</b>	<b>77.7</b>	<b>E</b>	-	<b>0.82</b>	<b>51.9</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.13	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
		R	1.01	71.0	E	R	1.11	101.1	F						
	SB	T	1.12	120.0+	F*	TR	1.17	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.21	22.1	C						
	WB	L	0.85	120.0+	F*	L	1.03	120.0+	F*						
		R	1.04	120.0+	F*	R	1.14	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>GREENWICH STREET CORRIDOR</b>															
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.16	19.8	B	R	0.08	18.5	B	NB	R	0.10	22.3		C
	SB	LT	0.40	23.2	C	LT	1.20+	120.0+	F*	SB	L	0.48	30.7	C	
Rector Street	EB	TR	0.37	12.8	B	TR	0.91	62.2	E		T	0.56	29.8	C	
										EB	TR	0.82	43.0	D	
<b>Overall Intersection</b>	-		<b>0.38</b>	<b>17.5</b>	<b>B</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.73</b>	<b>33.6</b>	<b>C</b>		

TABLE E.2-38  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)					Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control			Mvt.	V/C	Control			Mvt.	V/C	Control			
			Delay	LOS				Delay	LOS				Delay		LOS	
<b>CANAL STREET CORRIDOR</b>																
<b>16 Canal Street at Hudson Street</b>																
Hudson Street	NB	LTR	0.83	40.6	D	LTR	0.65	34.1	C	LTR	0.54	33.6	C	- Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane. - Modify signal timing (add 5 s to green time of EB/WB phase and 4 s to green time of EB/WB lead phase).		
		R	0.68	39.9	D	R	0.59	37.1	D	R	0.68	44.5	D			
Canal Street	EB	L	1.02	77.7	E	L	1.19	117.3	F	L	1.02	57.6	E			
		T	0.98	52.7	D	LT	0.95	45.2	D	LT	1.00	53.8	D			
	WB	T	0.93	59.4	E	T	1.14	117.4	F	T	0.98	59.1	E			
		R	1.14	97.9	F	R	1.19	120.0+	F*	R	1.12	93.9	F			
<b>Overall Intersection</b>	-		<b>1.06</b>	<b>63.7</b>	<b>E</b>	-	<b>1.05</b>	<b>85.1</b>	<b>F</b>	-	<b>1.02</b>	<b>57.1</b>	<b>E</b>			
<b>17 Canal Street at Varick Street</b>																
Varick Street	SB	L	0.16	22.6	C	L	0.34	25.3	C	L	0.46	34.5	C	- Modify signal timing (shift 8 s of green time from the SB phase to the EB/WB phase).		
		T	1.07	95.0	F	T	0.56	27.6	C	T	0.78	40.5	D			
		R	0.16	22.7	C	R	0.37	26.2	C	R	0.51	36.6	D			
Canal Street	EB	TR	0.46	10.9	B	TR	0.32	8.9	A	TR	0.28	5.4	A			
	WB	LT	1.05	72.0	E	LT	1.20+	120.0+	F*	LT	1.08	66.8	E			
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>68.1</b>	<b>E</b>	-	<b>1.00</b>	<b>66.9</b>	<b>E</b>	-	<b>1.00</b>	<b>42.7</b>	<b>D</b>			
<b>WEST BROADWAY CORRIDOR</b>																
<b>13 West Broadway/Greenwich Street at Vesey Street</b>																
Greenwich Street	SB	-	-	-	-	L	0.49	39.7	D	-	-	-	-	- Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway). - SB Greenwich Street is STOP sign controlled. - Provide revised signal timing and phasing plan.		
		-	-	-	-	R	0.31	37.9	D	-	-	-	-			
West Broadway	SB	L	0.55	20.4	C	L	0.22	11.0	B	L	0.36	16.3	B			
		R	0.81	31.9	C	TR	0.36	2.9	A	TR	0.43	7.6	A			
Vesey Street	EB	T	0.31	15.4	B	LR	1.20+	120.0+	F*	TR	0.74	22.5	C			
	WB	T	0.20	14.3	B	LT	0.51	34.8	C	LT	0.18	14.2	B			
<b>Overall Intersection</b>	-		<b>0.56</b>	<b>20.2</b>	<b>C</b>	-	<b>0.70</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.59</b>	<b>16.6</b>	<b>B</b>			
<b>CHURCH STREET CORRIDOR</b>																
<b>21 Church Street at Worth Street</b>																
Church Street	NB	LTR	0.98	27.9	C	LTR	1.20+	120.0+	F*	NB	LT	0.83	17.5	B	- Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane. - Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane.	
Worth Street	EB	LT	0.51	26.3	C	LT	0.82	42.3	D	R	0.31	12.1	B			
	WB	TR	0.62	28.4	C	TR	0.87	49.7	D	EB	LT	0.82	42.3	D		
										WB	T	0.51	27.7	C		
											R	0.28	22.3	C		
<b>Overall Intersection</b>	-		<b>0.84</b>	<b>27.8</b>	<b>C</b>	-	<b>1.13</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.82</b>	<b>21.7</b>	<b>C</b>			
<i>General Measures for Church Street corridor between Liberty Street and Vesey Street: Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase; Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane; Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>																
<b>24 Church Street at Vesey Street</b>																
Church Street	NB	LT	1.21	120.0+	F*	LT	1.02	49.0	D	LTR	0.80	31.0	C	- Apply General Measures. - Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition. - Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the far side block to gain an additional NB lane.		
		R	0.61	14.7	B	R	1.20+	120.0+	F*	-	-	-	-			
Vesey Street	EB	LT	0.61	25.9	C	LT	1.15	115.2	F	LT	0.68	36.2	D			
<b>Overall Intersection</b>	-		<b>0.97</b>	<b>83.1</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.60</b>	<b>32.6</b>	<b>C</b>			
<b>25 Church Street at Fulton Street</b>																
Church Street	NB	T	0.70	11.0	B	LT	0.87	22.1	C	LT	0.88	30.7	C		- Apply General Measures. - Prohibit parking along the north and south sides of WB Fulton Street during the MD peak period. - Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
Fulton Street	WB	R	0.59	41.3	D	TR	0.95	71.4	E	TR	0.36	36.5	D			
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>12.9</b>	<b>B</b>	-	<b>0.90</b>	<b>28.7</b>	<b>C</b>	-	<b>0.60</b>	<b>31.5</b>	<b>C</b>			

TABLE E.2-38  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)					Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control			LOS
			Delay	LOS				Delay	LOS			Delay	LOS		
<b>27 Church Street at Cortlandt Street</b>															
Church Street	NB	T	0.57	9.3	A	T	0.48	8.3	A	T	0.72	32.9	C	- Apply General Measures.	
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	1.10	102.6	F		
<b>Overall Intersection</b>	-	-	<b>0.85</b>	<b>62.0</b>	<b>E</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.76</b>	<b>60.7</b>	<b>E</b>		
<b>31 Broadway at Worth Street</b>															
Broadway	SB	LTR	0.78	17.2	B	LTR	0.57	62.4	E	LTR	0.47	43.9	D	- Partially Mitigated.	
Worth Street	EB	TR	0.79	30.5	C	TR	0.95	120.0+	F*	TR	0.79	58.5	E		
	WB	L	0.77	43.7	D	LT	1.01	120.0+	F*	L	0.43	21.3	C	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.	
	T		0.46	19.5	B	-	-	-	-	T	0.33	20.3	C	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.	
<b>Overall Intersection</b>	-	-	<b>0.78</b>	<b>22.9</b>	<b>C</b>	-	<b>0.76</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.63</b>	<b>43.4</b>	<b>D</b>	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane. - Modify signal timing (shift 6 s of green time from SB phase to EB/WB phase).	
<b>33 Broadway at Vesey Street / Ann Street</b>															
Broadway	SB	L	0.75	28.5	C	L	0.60	18.4	B	L	0.43	23.8	C	- Prohibit parking along the north side of EB Vesey Street.	
	LT		0.57	19.3	B	LT	0.43	13.8	B	T	0.87	37.8	D		
Vesey Street	EB	L	0.58	37.7	D	L	1.20+	120.0+	F*	L	0.61	36.0	D	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).	
	LTR		0.80	42.3	D	LTR	1.20+	120.0+	F*	LTR	0.73	36.4	D		
<b>Overall Intersection</b>	-	-	<b>0.55</b>	<b>28.4</b>	<b>C</b>	-	<b>0.51</b>	<b>107.4</b>	<b>F</b>	-	<b>0.51</b>	<b>34.4</b>	<b>C</b>	- Modify signal timing (shift 12 s of green time from SB phase to EB phase).	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).



TABLE E.2-39  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control		Mvt.	V/C	Control		Mvt.	V/C	Control				
			Delay	LOS			Delay	LOS			Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.13	99.5	F	TR	1.05	60.6	E					- Mitigation not required.	
	SB	L	0.38	12.6	B	L	0.61	9.0	A						
		TR	1.05	69.0	E	TR	1.08	70.9	E						
Chambers Street	EB	LTR	0.61	43.5	D	LTR	0.34	39.7	D						
	WB	LT	1.08	111.0	F	LT	0.99	95.2	F						
		R	0.67	26.2	C	R	0.72	35.3	D						
<b>Overall Intersection</b>	<b>-</b>	<b>1.06</b>	<b>77.1</b>	<b>E</b>	<b>-</b>	<b>1.02</b>	<b>62.1</b>	<b>E</b>	<b>-</b>						
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.95	96.5	F					- Meaningful TSM mitigation measures are not available.	
	TR	0.81	14.1	B	TR	1.09	89.5	F							
	SB	L	0.15	5.3	A	L	1.18	120.0+	F*						
	TR	0.67	4.1	A	TR	1.20+	120.0+	F*							
Vesey Street	EB	LTR	1.02	86.8	F	L	0.43	35.1	D						
	-	-	-	-	-	TR	1.20+	120.0+	F*						
	WB	L	0.93	75.5	E	L	1.20+	120.0+	F*						
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*							
<b>Overall Intersection</b>	<b>-</b>	<b>1.20+</b>	<b>39.2</b>	<b>D</b>	<b>-</b>	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.92	32.7	C					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.57	32.0	C						
<b>Overall Intersection</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.76</b>	<b>32.6</b>	<b>C</b>	<b>-</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.99	120.0+	F*	T	0.85	37.4	D	NB	T	0.80	24.5	C	- Prohibit parking on the south side of EB Albany Street to provide one 10 ft. exclusive left-turn lane and one 10 ft. exclusive right-turn lane.
	SB	TR	1.03	98.9	F	TR	1.11	120.0+	F*	SB	TR	1.04	98.8	F	
Albany Street	EB	LTR	1.19	120.0+	F*	LR	0.82	60.3	E	EB	L	0.14	34.7	C	- Modify signal timing (shift 5 s of green time from the EB/WB phase to the NB/SB phase).
	WB	-	-	-	-	L	0.40	35.8	D		R	0.75	57.9	E	
	-	-	-	-	-	TR	0.34	34.4	C	WB	L	0.49	42.0	D	
											TR	0.39	39.4	D	
<b>Overall Intersection</b>	<b>-</b>	<b>1.09</b>	<b>117.7</b>	<b>F</b>	<b>-</b>	<b>1.01</b>	<b>82.1</b>	<b>F</b>	<b>-</b>	<b>0.96</b>	<b>61.3</b>	<b>E</b>	<b>-</b>	<b>-</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.12	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
	R	1.09	119.1	F	R	1.11	120.0+	F*							
	SB	T	1.09	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B						
	WB	L	0.94	120.0+	F*	L	1.07	120.0+	F*						
	R	0.89	120.0+	F*	R	1.10	120.0+	F*							
<b>Overall Intersection</b>	<b>-</b>	<b>1.01</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>	<b>1.18</b>	<b>120.0+</b>	<b>F*</b>	<b>-</b>						
<b>GREENWICH STREET CORRIDOR</b>															
<b>15 Greenwich Street at Rector Street</b>															
Greenwich Street	NB	R	0.00	17.4	B	R	0.09	18.6	B	NB	R	0.09	18.6	B	- Restripe SB Greenwich Street approach from one 24 ft. wide shared through-left lane to one 12 ft. wide through lane and one 12 ft. wide exclusive left-turn lane.
	SB	LT	0.38	22.7	C	LT	0.78	37.9	D	SB	L	0.43	24.5	C	
Rector Street	EB	TR	0.38	12.8	B	TR	0.38	12.9	B		T	0.28	20.6	C	- [Measures reflect geometric improvements needed for the MD peak period, otherwise mitigation not needed.]
										EB	TR	0.38	12.9	B	
<b>Overall Intersection</b>	<b>-</b>	<b>0.38</b>	<b>16.8</b>	<b>B</b>	<b>-</b>	<b>0.54</b>	<b>26.5</b>	<b>C</b>	<b>-</b>	<b>0.40</b>	<b>18.3</b>	<b>B</b>	<b>-</b>	<b>-</b>	

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 PM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)					Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control			Mvt.	V/C	Control			Mvt.	V/C	Control			
			Delay	LOS				Delay	LOS				Delay		LOS	
<b>CANAL STREET CORRIDOR</b>																
<b>16 Canal Street at Hudson Street</b>																
Hudson Street	NB	LTR	0.39	28.7	C	LTR	0.91	46.9	D	LTR	0.75	38.0	D	-	Prohibit truck loading/unloading along the west side of NB Hudson Street during peak periods to gain an additional NB lane.	
		R	1.00	120.0+	F*	R	0.78	46.1	D	R	0.90	64.7	E			
Canal Street	EB	L	0.33	25.1	C	L	0.86	46.3	D	L	0.73	32.4	C	-	Modify signal timing (add 4 s to green time of EB/WB phase and 5 s to green time of EB/WB lead phase).	
		T	0.95	45.3	D	T	0.90	36.8	D	T	0.85	26.4	C			
	WB	T	0.23	23.4	C	T	0.52	28.8	C	T	0.46	24.4	C			
		R	1.19	114.2	F	R	1.20+	120.0+	F*	R	1.19	111.9	F			
<b>Overall Intersection</b>	-		<b>1.14</b>	<b>83.4</b>	<b>F</b>	-	<b>1.17</b>	<b>69.9</b>	<b>E</b>	-	<b>1.12</b>	<b>56.5</b>	<b>E</b>			
<b>17 Canal Street at Varick Street</b>																
Varick Street	SB	L	0.42	26.6	C	L	0.73	44.5	D	L	0.73	44.5	D	-	Modify signal timing (shift 3 s of green time from the EB lead phase to the EB/WB phase).	
		T	1.09	113.6	F	T	0.48	26.2	C	T	0.48	26.2	C			
		R	0.20	23.6	C	R	0.11	22.0	C	R	0.11	22.0	C			
Canal Street	EB	TR	0.44	10.7	B	TR	0.31	9.0	A	TR	0.31	9.0	A			
	WB	LT	1.11	120.0+	F*	LT	1.20+	120.0+	F*	LT	1.11	120.0+	F*			
<b>Overall Intersection</b>	-		<b>0.66</b>	<b>101.3</b>	<b>F</b>	-	<b>0.45</b>	<b>107.4</b>	<b>F</b>	-	<b>0.45</b>	<b>80.0</b>	<b>F</b>			
<b>WEST BROADWAY CORRIDOR</b>																
<b>13 West Broadway/Greenwich Street at Vesey Street</b>																
Greenwich Street	SB	-	-	-	-	L	0.51	40.3	D	-	-	-	-	-	Prohibit SB Greenwich Street left turn movement (Reroute SB Greenwich Street left turn volume to SB West Broadway).	
		-	-	-	-	R	0.43	41.3	D	-	-	-	-	-		
West Broadway	SB	L	1.20	120.0+	F*	L	0.49	14.1	B	L	0.69	22.4	C	-	SB Greenwich Street is STOP sign controlled.	
		R	0.94	47.2	D	TR	0.40	3.1	A	TR	0.47	7.9	A	-	Provide revised signal timing and phasing plan.	
Vesey Street	EB	T	0.32	15.5	B	LR	1.20+	120.0+	F*	TR	0.74	22.6	C			
	WB	T	0.22	14.5	B	LT	0.57	35.9	D	LT	0.21	14.4	B			
<b>Overall Intersection</b>	-		<b>0.76</b>	<b>57.4</b>	<b>E</b>	-	<b>0.78</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.72</b>	<b>18.2</b>	<b>B</b>			
<b>CHURCH STREET CORRIDOR</b>																
<b>21 Church Street at Worth Street</b>																
Church Street	NB	LTR	0.84	14.3	B	LTR	1.20+	120.0+	F*	NB	LT	0.83	18.0	B	-	Prohibit parking along both sides of NB Church Street to provide one additional through lane and one exclusive right-turn lane.
Worth Street	EB	LT	0.73	35.8	D	LT	0.59	30.9	C	R	0.32	12.2	B			
	WB	TR	0.66	29.5	C	TR	0.85	41.8	D	EB	LT	0.59	30.9	C	-	Prohibit parking along the north side of WB Worth Street and shift the centerline 7 ft. to the south to provide one 12 ft. through lane and one 12 ft. exclusive right-turn lane.
										WB	T	0.56	27.4	C		
										R	0.31	22.7	C			
<b>Overall Intersection</b>	-		<b>0.80</b>	<b>19.0</b>	<b>B</b>	-	<b>1.14</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.74</b>	<b>20.1</b>	<b>C</b>			
<i>General Measures for Church Street corridor between Liberty Street and Vesey Street:                  Reconfigure the section of Church Street as a pedestrian corridor with the following measures: Revise the signal timing plan at each intersection to have a 120 s cycle with a pedestrian-only phase;                  Eliminate the Bus Only lane along the east side of the corridor to gain an additional NB travel lane;                  Restripe Church Street NB as two 12 ft. inner lanes and two 15 ft. outer lanes to facilitate drop-off and bus layover.</i>																
<b>24 Church Street at Vesey Street</b>																
Church Street	NB	LT	1.20+	120.0+	F*	LT	1.17	106.2	F	LTR	1.01	63.3	E	-	Apply General Measures.	
		R	0.70	17.7	B	R	1.20+	120.0+	F*	-	-	-	-	-	Restripe the EB Vesey Street approach from one shared through-left lane to one through lane and one shared through-left lane to match Pre-9/11 condition.	
Vesey Street	EB	LT	0.87	36.1	D	LT	1.20+	120.0+	F*	LT	0.80	35.3	D	-	Move the Bus Layover Zone along the west of Church Street between Vesey Street and Fulton Street to the farside block to gain an additional NB lane.	
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>89.2</b>	<b>F</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>	-	<b>0.72</b>	<b>52.6</b>	<b>D</b>			
<b>25 Church Street at Fulton Street</b>																
Church Street	NB	T	0.70	11.1	B	LT	0.76	17.4	B	LT	0.81	26.8	C	-	Apply General Measures.	
Fulton Street	WB	R	0.59	35.1	D	TR	1.20+	120.0+	F*	TR	0.67	43.5	D	-	Restripe WB Fulton Street approach from one shared through-right lane to one 12 ft. wide through lane and one 12 ft. wide shared through-right lane.	
<b>Overall Intersection</b>	-		<b>0.67</b>	<b>13.8</b>	<b>B</b>	-	<b>1.01</b>	<b>66.0</b>	<b>E</b>	-	<b>0.65</b>	<b>30.7</b>	<b>C</b>			

TABLE E.2-39  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A AT-GRADE (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)					Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures	
	Mvt.	V/C	Control		LOS	Mvt.	V/C	Control		Mvt.	V/C	Control			LOS
			Delay	LOS				Delay	LOS			Delay	LOS		
<b>27 Church Street at Cortlandt Street</b>															
Church Street	NB	T	0.55	9.0	A	T	0.52	8.6	A	T	0.62	20.3	C	- Apply General Measures.	
Cortlandt Street	WB	R	1.20+	120.0+	F*	R	1.20+	120.0+	F*	R	0.95	72.1	E		
<b>Overall Intersection</b>	-	-	<b>0.86</b>	<b>70.7</b>	<b>E</b>	-	<b>0.99</b>	<b>105.5</b>	<b>F</b>	-	<b>0.61</b>	<b>34.3</b>	<b>C</b>		
<b>31 Broadway at Worth Street</b>															
Broadway	SB	LTR	0.74	15.8	B	LTR	0.78	68.9	E	LTR	0.56	26.3	C	- Relocate the bus stop along EB Worth Street from nearside to farside and increase the lane width along EB Worth Street from 14 ft. to 15 ft.	
Worth Street	EB	TR	0.64	23.9	C	TR	0.83	35.9	D	TR	0.80	33.4	C		
	WB	L	0.34	20.0	C	LT	0.86	38.7	D	L	0.33	19.9	B	- Provide strict enforcement of "No Parking" regulation and prohibit truck loading/unloading along the east side of SB Broadway to gain one through lane.	
	T	0.56	21.5	C	-	-	-	-	T	0.57	21.6	C	- Provide strict enforcement of "No Parking" regulation along WB Worth Street approach to gain one through and one exclusive left-turn lane.		
<b>Overall Intersection</b>	-	-	<b>0.70</b>	<b>18.9</b>	<b>B</b>	-	<b>0.82</b>	<b>55.5</b>	<b>E</b>	-	<b>0.67</b>	<b>26.6</b>	<b>C</b>		
<b>33 Broadway at Vesey Street / Ann Street</b>															
Broadway	SB	L	0.89	37.9	D	L	0.95	43.9	D	L	0.61	23.3	C	- Prohibit parking along the north side of EB Vesey Street.	
	LT	0.57	19.2	B	LT	0.40	13.5	B	T	0.72	26.2	C	- Reconfigure Broadway SB approach as two exclusive through lanes and two exclusive left-turn lanes (provide markings indicating that the east most left turn lane is for turns onto Park Row only).		
Vesey Street	EB	L	1.04	93.6	F	L	1.20+	120.0+	F*	L	0.88	59.9	E		
	LTR	0.79	40.7	D	LTR	1.20+	120.0+	F*	LTR	0.75	40.5	D			
<b>Overall Intersection</b>	-	-	<b>0.66</b>	<b>38.1</b>	<b>D</b>	-	<b>0.72</b>	<b>106.7</b>	<b>F</b>	-	<b>0.50</b>	<b>33.3</b>	<b>C</b>	- Modify signal timing (shift 8 s of green time from SB phase to EB phase).	

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual -- TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual -- TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-40  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 AM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (8:15 - 9:15 AM)				Current 2015 Build (8:15 - 9:15 AM)				Current 2015 Build Mitigated (8:15 - 9:15 AM)				Mitigation Measures	
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS		
<b>SIGNALIZED INTERSECTIONS</b>														
<b>WEST STREET CORRIDOR</b>														
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.09	81.4	F	TR	1.20+	120.0+	F*	TR	1.17	112.4	F	- Partially mitigated - Modify signal timing and phasing plan (increase cycle length from 120 s to 135 s).
	SB	L	0.85	23.7	C	L	0.84	30.8	C	L	0.87	36.7	D	
		TR	1.03	59.8	E	TR	1.09	76.3	E	TR	0.85	10.2	B	
Chambers Street	EB	LTR	0.84	79.6	E	LTR	0.49	42.3	D	LTR	0.44	42.4	D	
	WB	LT	0.91	72.2	E	LT	0.99	91.7	F	LT	0.89	71.1	E	
		R	0.69	29.8	C	R	0.45	26.3	C	R	0.49	33.2	C	
<b>Overall Intersection</b>	-		<b>1.04</b>	<b>65.8</b>	<b>E</b>	-	<b>1.18</b>	<b>105.1</b>	<b>F</b>	-	<b>1.17</b>	<b>62.2</b>	<b>E</b>	
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	1.04	93.3	F					- Meaningful TSM mitigation measures are not available.
	TR	1.01	39.8	D	TR	1.20+	120.0+	F*						
	SB	L	0.14	8.4	A	L	1.20+	120.0+	F*					
	TR	0.65	4.0	A	TR	1.20+	120.0+	F*						
Vesey Street	EB	LTR	1.06	98.2	F	L	0.48	37.7	D					
	-	-	-	-	-	TR	0.93	80.7	F					
	WB	L	1.15	120.0+	F*	L	0.95	81.2	F					
	LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>42.6</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>														
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.35	12.5	B	T	0.36	13.6	B	- Modify signal timing (shift 2 s of green time from NB phase to WB phase).
Fulton Street	WB	-	-	-	-	R	0.76	47.8	D	R	0.71	42.7	D	
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.50</b>	<b>21.2</b>	<b>C</b>	-	<b>0.49</b>	<b>20.8</b>	<b>C</b>	
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>														
West Street (NYS Rt. 9A)	NB	TR	1.08	120.0+	F*	T	0.84	26.8	C	T	0.88	34.1	C	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane.
	SB	TR	0.98	92.9	F	TR	0.90	47.2	D	TR	0.90	47.2	D	
Albany Street	EB	LTR	1.17	120.0+	F*	LR	1.20+	120.0+	F*	LR	1.05	105.4	F	
	WB	-	-	-	-	L	0.39	35.5	D	L	0.39	35.5	D	
	-	-	-	-	-	TR	0.32	33.7	C	R	0.32	33.7	C	
<b>Overall Intersection</b>	-		<b>1.11</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.13</b>	<b>51.0</b>	<b>D</b>	-	<b>0.95</b>	<b>42.4</b>	<b>D</b>	
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>														
West Street (NYS Rt.9A)	NB	T	1.17	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.
	R	1.13	120.0+	F*	R	1.20	120.0+	F*						
	SB	T	1.16	120.0+	F*	TR	1.20+	120.0+	F*					
Brooklyn Battery Tunnel	EB	R	0.10	12.7	B	R	0.63	26.6	C					
	WB	L	1.07	120.0+	F*	L	1.08	120.0+	F*					
	R	1.12	120.0+	F*	R	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.14</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>					

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-4I  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 MD COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (12:00 - 1:00 PM)				Current 2015 Build (12:00 - 1:00 PM)				Current 2015 Build Mitigated (12:00 - 1:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.93	26.2	C	TR	1.08	70.5	E	TR	1.00	40.4	D	- Modify signal timing and phasing plan (increase cycle length from 120 s to 135 s).	
	SB	L	0.68	19.7	B	L	0.70	12.5	B	L	0.79	26.1	C		
		TR	0.72	17.3	B	TR	1.00	46.3	D	TR	0.79	9.3	A		
Chambers Street	EB	LTR	0.31	37.2	D	LTR	0.31	38.7	D	LTR	0.25	37.4	D		
	WB	LT	0.77	55.9	E	LT	0.85	66.6	E	LT	0.74	55.7	E		
		R	0.81	44.4	D	R	0.52	28.5	C	R	0.55	35.5	D		
<b>Overall Intersection</b>	-		<b>0.98</b>	<b>25.2</b>	<b>C</b>	-	<b>1.00</b>	<b>55.1</b>	<b>E</b>	-	<b>0.92</b>	<b>27.3</b>	<b>C</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.86	61.9	E						- Meaningful TSM mitigation measures are not available.
		TR	0.73	12.6	B	TR	1.20+	120.0+	F*						
	SB	L	0.21	4.9	A	L	1.20+	120.0+	F*						
		TR	0.54	3.3	A	TR	1.20+	120.0+	F*						
Vesey Street	EB	LTR	0.75	49.5	D	L	0.30	31.4	C						
		-	-	-	-	TR	1.12	120.0+	F*						
	WB	L	0.81	55.3	E	L	0.85	59.7	E						
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>26.6</b>	<b>C</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.25	16.4	B					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.51	28.2	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.37</b>	<b>20.3</b>	<b>C</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.99	120.0+	F*	T	0.75	22.4	C	T	0.75	22.4	C	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane. [Measures reflect geometric improvements necessary for the AM peak period, otherwise mitigation not needed.]	
	SB	TR	0.95	80.7	F	TR	0.91	53.3	D	TR	0.91	53.3	D		
Albany Street	EB	LTR	1.08	109.8	F	LR	0.59	43.6	D	LR	0.51	39.3	D		
	WB	-	-	-	-	L	0.37	34.7	C	L	0.37	34.7	C		
		-	-	-	-	TR	0.56	40.7	D	R	0.56	40.7	D		
<b>Overall Intersection</b>	-		<b>1.02</b>	<b>110.7</b>	<b>F</b>	-	<b>0.81</b>	<b>36.3</b>	<b>D</b>	-	<b>0.80</b>	<b>36.2</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.13	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
		R	1.01	71.0	E	R	1.15	114.5	F						
	SB	T	1.12	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.09	20.3	C	R	0.21	22.1	C						
	WB	L	0.85	120.0+	F*	L	1.03	120.0+	F*						
		R	1.04	120.0+	F*	R	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).

TABLE E.2-42  
 WORLD TRADE CENTER MEMORIAL AND REDEVELOPMENT PLAN  
 PM COMPARISON AND MITIGATION: PRE SEPTEMBER 11<sup>TH</sup> 2015 NO ACTION CONDITION vs CURRENT 2015 BUILD CONDITION WITH ROUTE 9A SHORT BYPASS (ALTERNATIVE TRIP ASSUMPTIONS)

INTERSECTION & APPROACH	Pre 9/11 2015 No Action (5:00 - 6:00 PM)				Current 2015 Build (5:00 - 6:00 PM)				Current 2015 Build Mitigated (5:00 - 6:00 PM)				Mitigation Measures		
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS			
<b>SIGNALIZED INTERSECTIONS</b>															
<b>WEST STREET CORRIDOR</b>															
<b>2 West Street (NYS Rt. 9A) at Chambers Street</b>															
West Street (NYS Rt. 9A)	NB	TR	1.13	99.5	F	TR	1.09	78.0	E	TR	1.08	73.2	E	- Modify signal timing and phasing plan (increase cycle length from 120 s to 135 s).	
	SB	L	0.38	12.6	B	L	0.64	9.7	A	L	0.66	12.0	B		
		TR	1.05	69.0	E	TR	1.12	86.8	F	TR	0.86	8.7	A		
Chambers Street	EB	LTR	0.61	43.5	D	LTR	0.36	40.7	D	LTR	0.32	42.2	D		
	WB	LT	1.08	111.0	F	LT	1.08	120.0+	F*	LT	1.03	109.6	F		
		R	0.67	26.2	C	R	0.75	36.7	D	R	0.76	41.0	D		
<b>Overall Intersection</b>	-		<b>1.06</b>	<b>77.1</b>	<b>E</b>	-	<b>1.08</b>	<b>77.3</b>	<b>E</b>	-	<b>1.05</b>	<b>41.9</b>	<b>D</b>		
<b>3 West Street (NYS Rt. 9A) at Vesey Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	L	0.98	82.9	F						- Meaningful TSM mitigation measures are not available.
		TR	0.81	14.1	B	TR	1.13	120.0+	F*						
	SB	L	0.15	5.3	A	L	1.20+	120.0+	F*						
		TR	0.67	4.1	A	TR	0.96	85.6	F						
Vesey Street	EB	LTR	1.02	86.8	F	L	0.28	36.0	D						
		-	-	-	-	TR	1.06	112.5	F						
	WB	L	0.93	75.5	E	L	1.20+	120.0+	F*						
		LTR	1.20+	120.0+	F*	TR	1.20+	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.20+</b>	<b>39.2</b>	<b>D</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						
<b>41 West Street (NYS Rt. 9A) at Fulton Street</b>															
West Street (NYS Rt. 9A)	NB	-	-	-	-	T	0.24	16.3	B					- Mitigation not required.	
Fulton Street	WB	-	-	-	-	R	0.57	32.0	C						
<b>Overall Intersection</b>	-		-	-	-	-	<b>0.39</b>	<b>22.5</b>	<b>C</b>						
<b>43 West Street (NYS Rt. 9A) at Albany Street</b>															
West Street (NYS Rt. 9A)	NB	TR	0.99	120.0+	F*	T	0.71	18.0	B	T	0.71	18.0	B	- Restripe the shared through-right lane of WB Albany Street to a 13 ft. exclusive right-turn lane. [Measures reflect geometric improvements necessary for the AM peak period, otherwise mitigation not needed.]	
	SB	TR	1.03	98.9	F	TR	0.98	73.6	E	TR	0.98	73.6	E		
Albany Street	EB	LTR	1.19	120.0+	F*	LR	0.87	68.3	E	LR	0.81	59.0	E		
	WB	-	-	-	-	L	0.51	38.7	D	L	0.51	38.7	D		
		-	-	-	-	TR	0.50	38.4	D	R	0.50	38.4	D		
<b>Overall Intersection</b>	-		<b>1.09</b>	<b>117.7</b>	<b>F</b>	-	<b>0.95</b>	<b>47.1</b>	<b>D</b>	-	<b>0.93</b>	<b>46.7</b>	<b>D</b>		
<b>6 West Street (NYS Rt.9A) at Brooklyn Battery Tunnel</b>															
West Street (NYS Rt.9A)	NB	T	1.12	120.0+	F*	T	1.20+	120.0+	F*					- Meaningful TSM mitigation measures are not available.	
		R	1.09	119.1	F	R	1.12	120.0+	F*						
	SB	T	1.09	120.0+	F*	TR	1.20+	120.0+	F*						
Brooklyn Battery Tunnel	EB	R	0.03	12.0	B	R	0.18	13.6	B						
	WB	L	0.94	120.0+	F*	L	1.07	120.0+	F*						
		R	0.89	120.0+	F*	R	1.12	120.0+	F*						
<b>Overall Intersection</b>	-		<b>1.01</b>	<b>120.0+</b>	<b>F*</b>	-	<b>1.20+</b>	<b>120.0+</b>	<b>F*</b>						

**General Notes:**

- (i): Control delay is measured in seconds per vehicle.
- (ii): Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group as listed in the 2000 Highway Capacity Manual – TRB.
- (iii): Level of service (LOS) for unsignalized intersections is based upon control delay per vehicle (sec/veh) for each minor-approach as listed in the 2000 Highway Capacity Manual – TRB.
- (iv): Overall intersection V/C ratio is the critical lane groups' V/C ratio, not the weighted average of all the movements.
- (v): F\* indicates level of service F conditions with delays in excess of two minutes for the movement with an asterisk (\*).