



GOWANUS PRELIMINARY TRAFFIC ANALYSIS

DRAFT

Introduction

- The purpose of this analysis is to test how the closure of Nevins St between Douglass St and Degraw St for better connection between Thomas Greene Playground and waterfront site would affect the street network in Gowanus.
- 2 scenarios are analyzed for future Nevins Closure to test a range of different routes vehicles would take as alternatives:
 - Existing Condition
 - Future Scenario
 - With Improvements
 - Nevins Closure (50&50 Scenario)
 - Nevins Closure (Mixed Scenario)
- **Analysis Time Period:**
 - Weekday AM Peak (Less Affected*)
 - Weekday PM Peak (Focus)
- **Intersection Level of Service (LOS) Definition:**

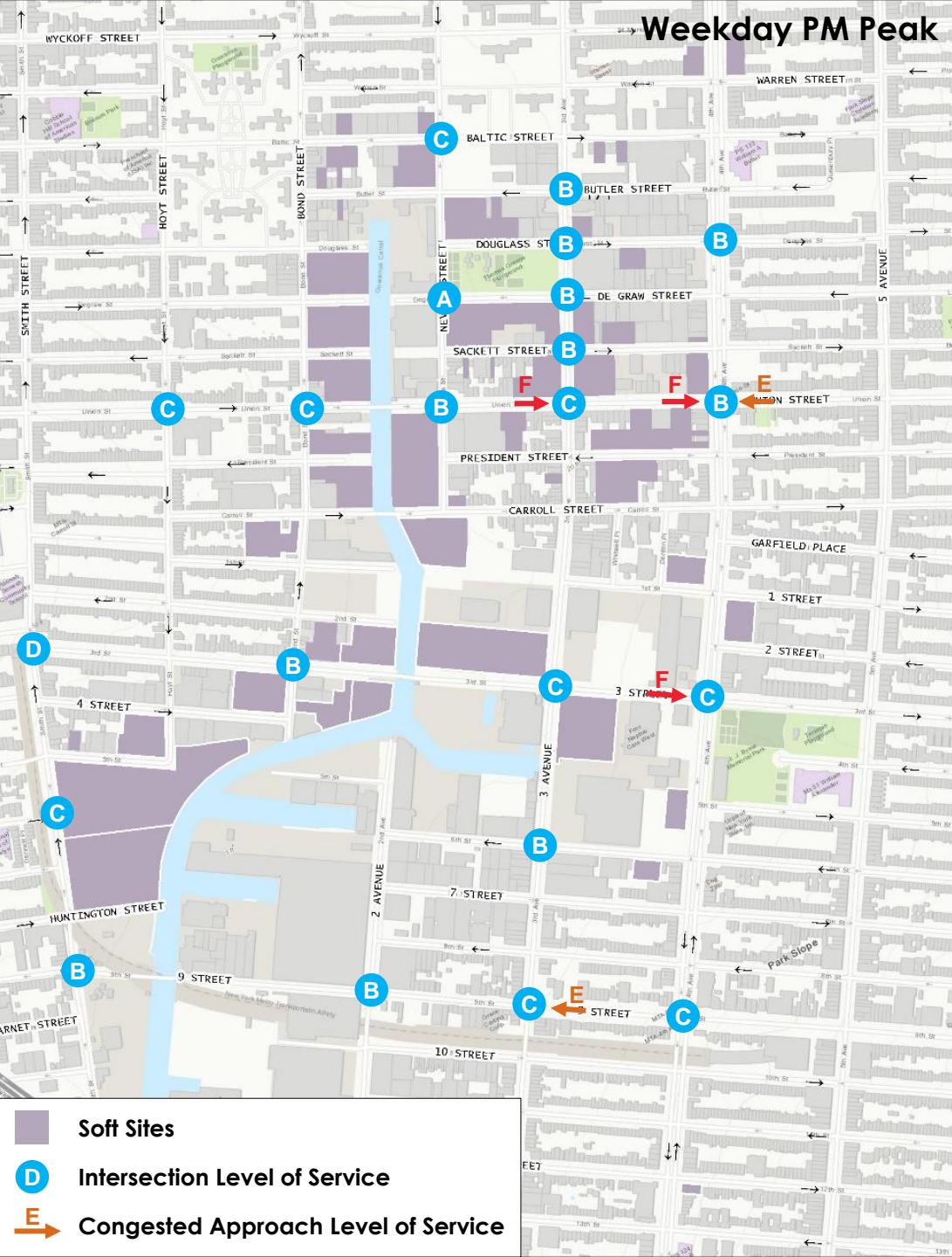


LOS	Delay (seconds/vehicle)	Congestion Level
A	Less than 10.1	Low
B	10.1 to 20.0	
C	20.1 to 35.0	Medium
D	35.1 to 55.0	
E	55.1 to 80.0	High
F	Greater than 80.0	

* Traffic analyses are completed for the weekday AM peak but the results are only shown in the appendix simply because the street network will not be affected much by the closure due to the low volume (72 vehs/hr) of SB through traffic for Nevins St @ Douglass St during AM Peak.

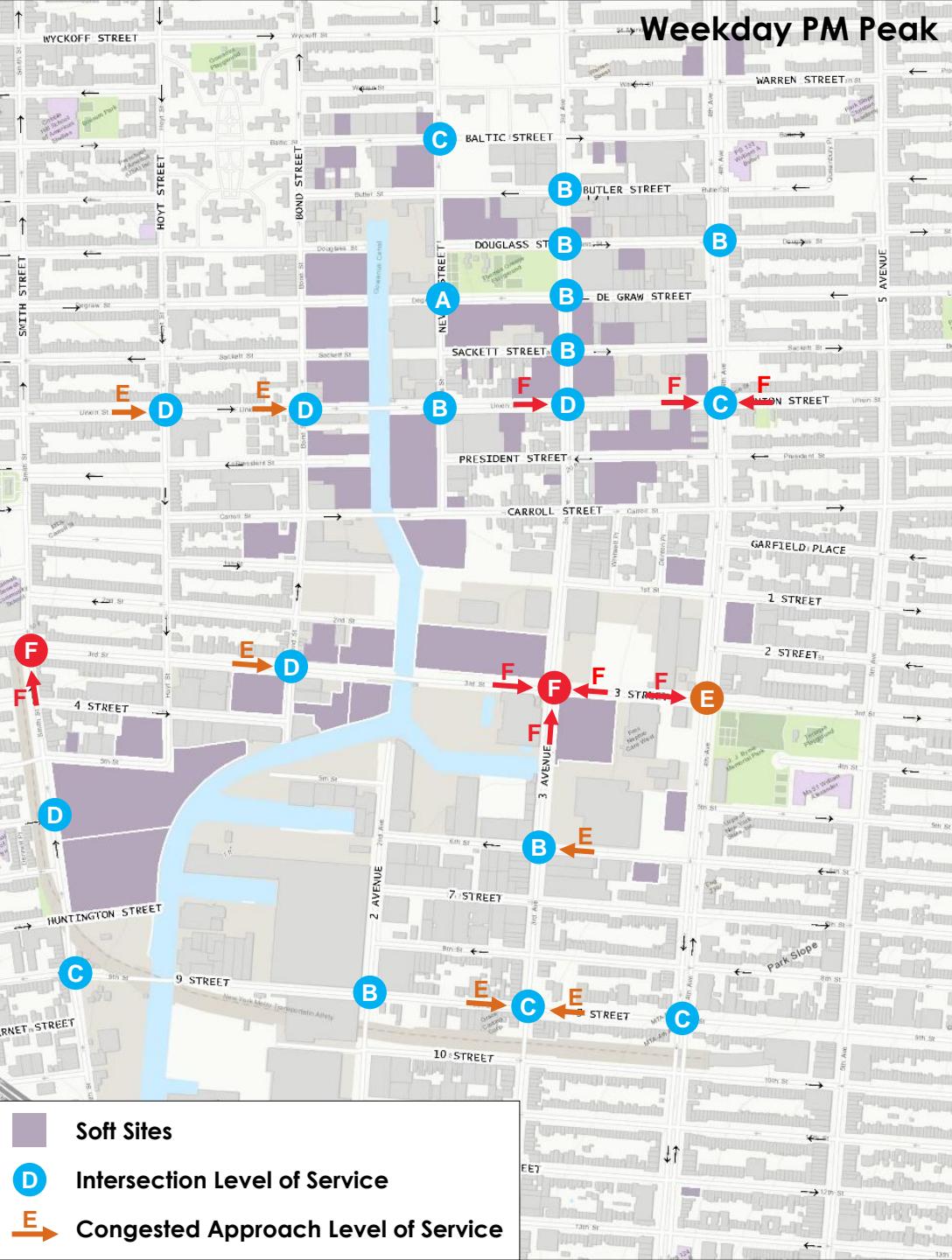
Existing Condition

- 19 signalized intersections, 3 unsignalized intersections, and 1 uncontrolled intersection
- 16 DEP traffic counts collected in 2016 and 7 DCP traffic counts collected in 2017
- Focus on weekday PM peak for this analysis
- Intersections with congested approaches:
 - 4th Ave @ Union St (EB & WB)
 - 4th Ave @ 3rd St (EB)
 - 3rd Ave @ Union St (EB)
 - 3rd Ave @ 9th St (WB)



Future Scenario

- With future background growth and projected land development after rezoning
- Intersections with congested approaches:
 - 4th Ave @ Union St (EB & WB)
 - 4th Ave @ 3rd St (EB)
 - 3rd Ave @ Union St (EB)
 - 3rd Ave @ 3rd St (EB & WB & NB)
 - 3rd Ave @ 6th St (WB)
 - 3rd Ave @ 9th St (EB & WB)
 - Bond St @ Union St (EB)
 - Bond St @ 3rd St (EB)
 - Hoyt St @ Union St (EB)
 - Smith St @ 3rd St (NB)



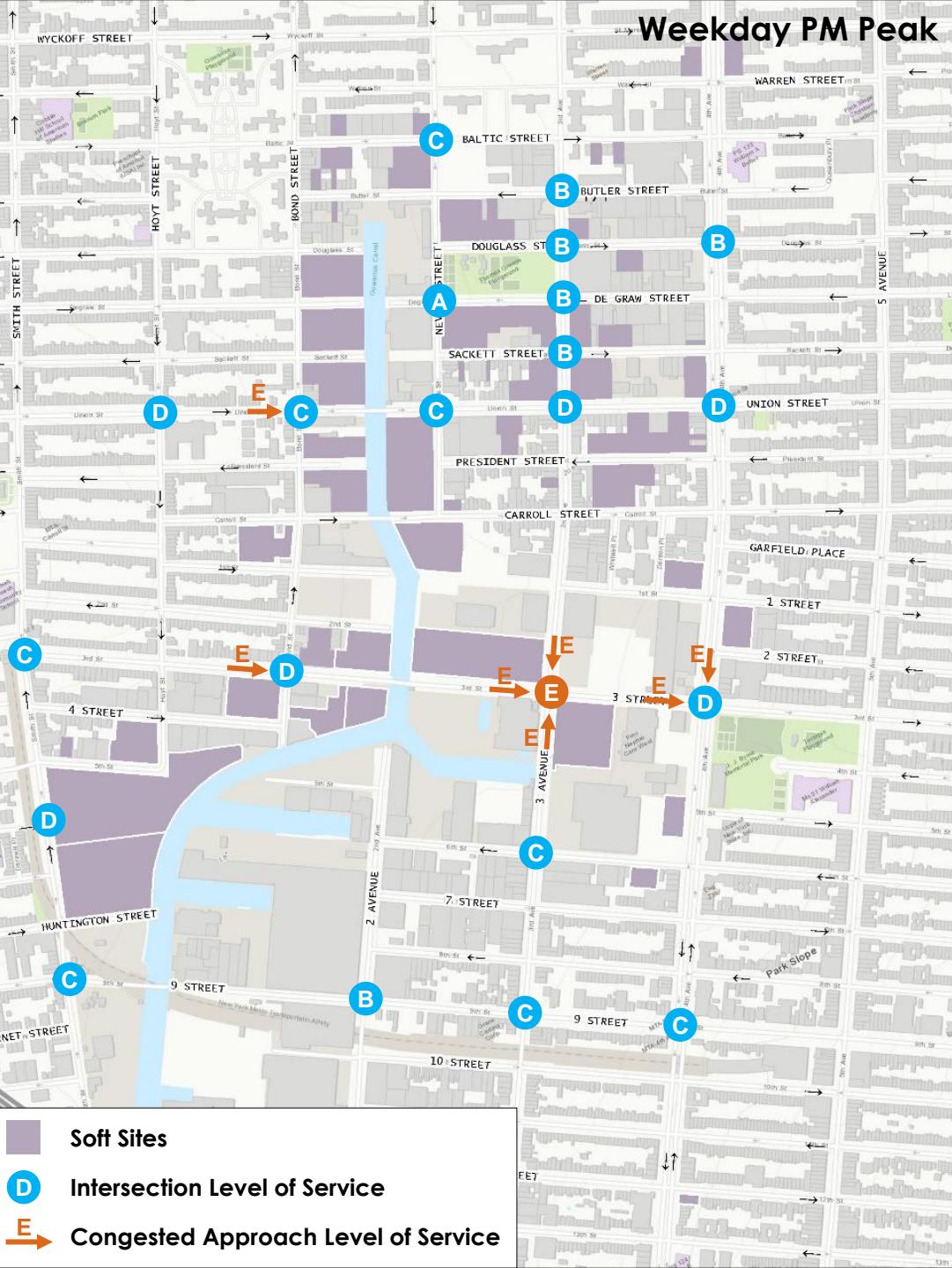
With Improvements

- **Improvements:**

- Change signal timings
- Eliminate left turns
- Daylight corners to add exclusive right-turn lanes
- Divert 25% 3rd St EB traffic to Union St

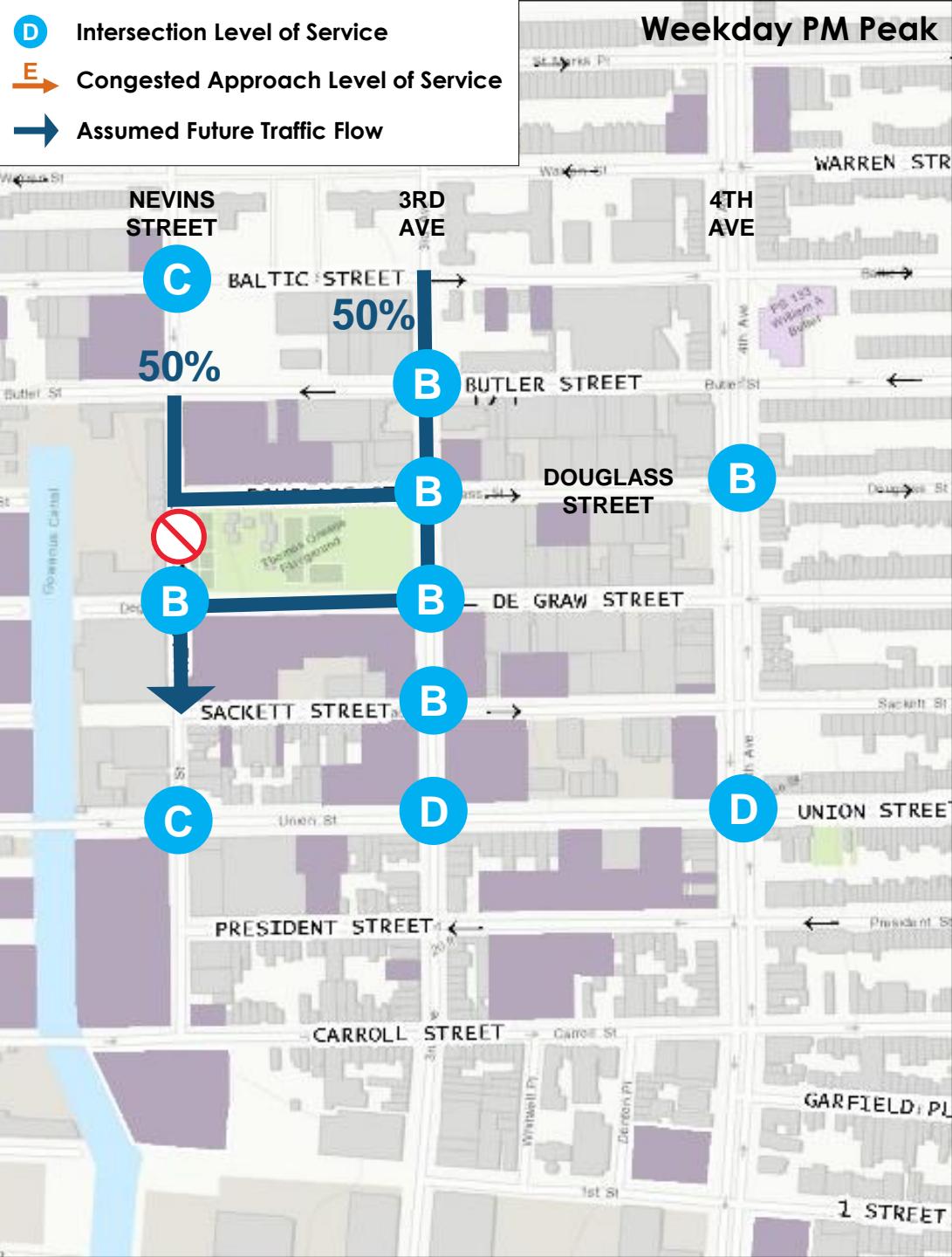
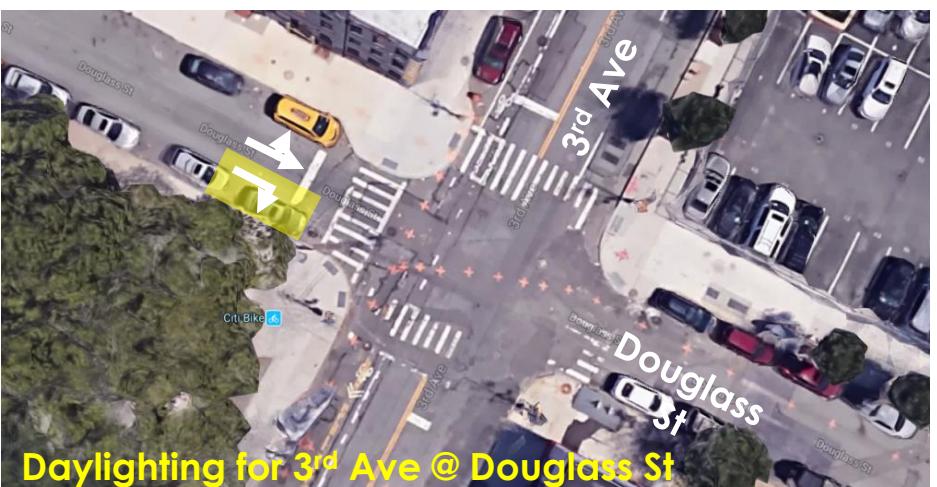
- **Intersections with congested approaches:**

- 4th Ave @ 3rd St (EB & SB)
- 3rd Ave @ 3rd St (EB & NB & SB)
- Bond St @ Union St (EB)
- Bond St @ 3rd St (EB)



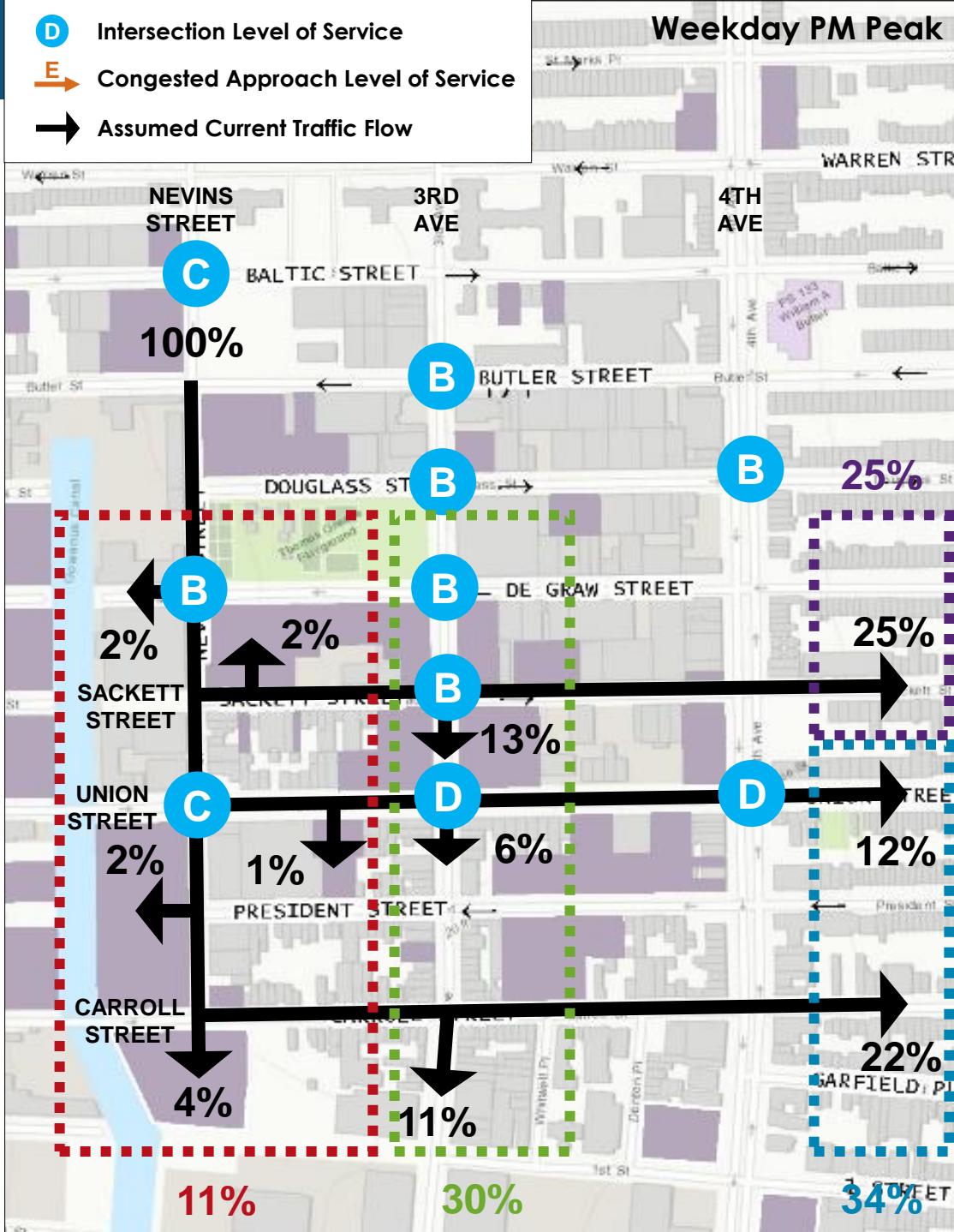
Nevins Closure (50&50 Scenario)

- Closing Nevins St between Douglass St and Degraw St will require redirecting 280 vehs/hr SB through traffic for Nevins St @ Douglass St during PM peak in the future With Improvements scenario.**
- The 50&50 Scenario assumes in the future:**
 - 50% of vehicles will zigzag (Nevins=>Douglass=>3rd=>Degraw=>Nevins).
 - 50% of vehicles will use 3rd Ave (3rd=>Degraw=>Nevins).
- 3rd Ave @ Douglass St EB will need improvements due to the street closure:**
 - Daylight SW corner to add an EB exclusive right-turn lane.



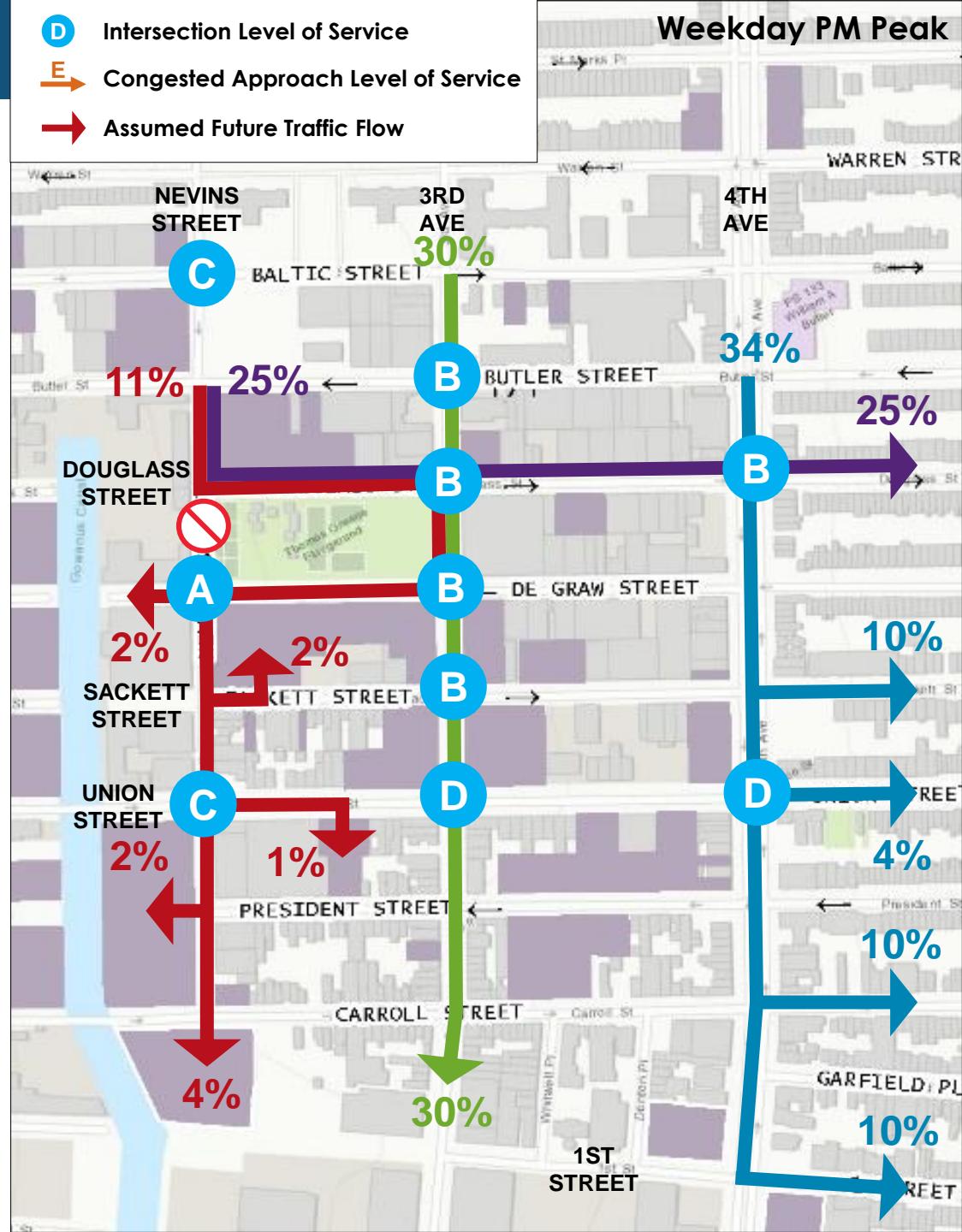
Nevins Closure (Mixed Scenario)

- Closing Nevins St between Douglass St and Degraw St will require redirecting 280 vehs/hr SB through traffic for Nevins St @ Douglass St during PM peak in the future With Improvements scenario.
 - The Mixed Scenario first made assumptions on the current traffic flow based on the traffic data, development scenario, and origin-destination data:
 - 11% is accessing sites along Nevins St
 - 30% is ultimately turning to 3rd Ave to head south
 - 25% is going east along Sackett St
 - 34% is heading east through Union St and Carroll St



Nevins Closure (Mixed Scenario)

- Based on the assumptions of current traffic flow, vehicles will be redirected to different routes:
 - 11% will zigzag to access sites along Nevins St (Nevins=>Douglass=>3rd=>Degraw=>Nevins)
 - 30% will use 3rd Ave to head south instead of through Nevins St
 - 25% will turn to east from Nevins St along Douglass St instead of Sackett St
 - 34% will make left turns at various intersections (Sackett St, Union St, Carroll St, and 1st St) on 4th Ave to head east
- 3rd Ave @ Douglass St EB will need improvements due to the street closure:
 - Daylight SW corner to add an EB exclusive right-turn lane



Conclusion

- **Weekday PM Peak is the most critical time period.**
 - There are lower traffic volumes on Nevins during Weekday AM Peak compared to Weekday PM Peak.
 - No Weekday Midday or Weekend data is available for DEP traffic counts, but in general there are lower traffic volumes during those two periods within the study area based on DCP traffic counts.
- **3rd Ave @ Douglass St is the most affected intersection by the Nevins closure.**
 - Needs improvements such as daylighting.
 - Some other intersections might also be affected, especially left turns on 4th Ave, in addition to the intersections analyzed.
- **The Nevins closure is generally feasible, but the benefit gained for pedestrian may not necessarily beat the impact on traffic.**
 - Side streets around Thomas Greene Playground (especially Douglass St) may suffer from extra traffic, which will also affect the user experience of the park.
 - Alternatives like temporary closure on weekends, Play Streets, shared street, or other traffic calming options might be preferred.
 - Closure should happen after the reconstruction of the playground and the redevelopment of the waterfront site.



Harvest Home Play Streets



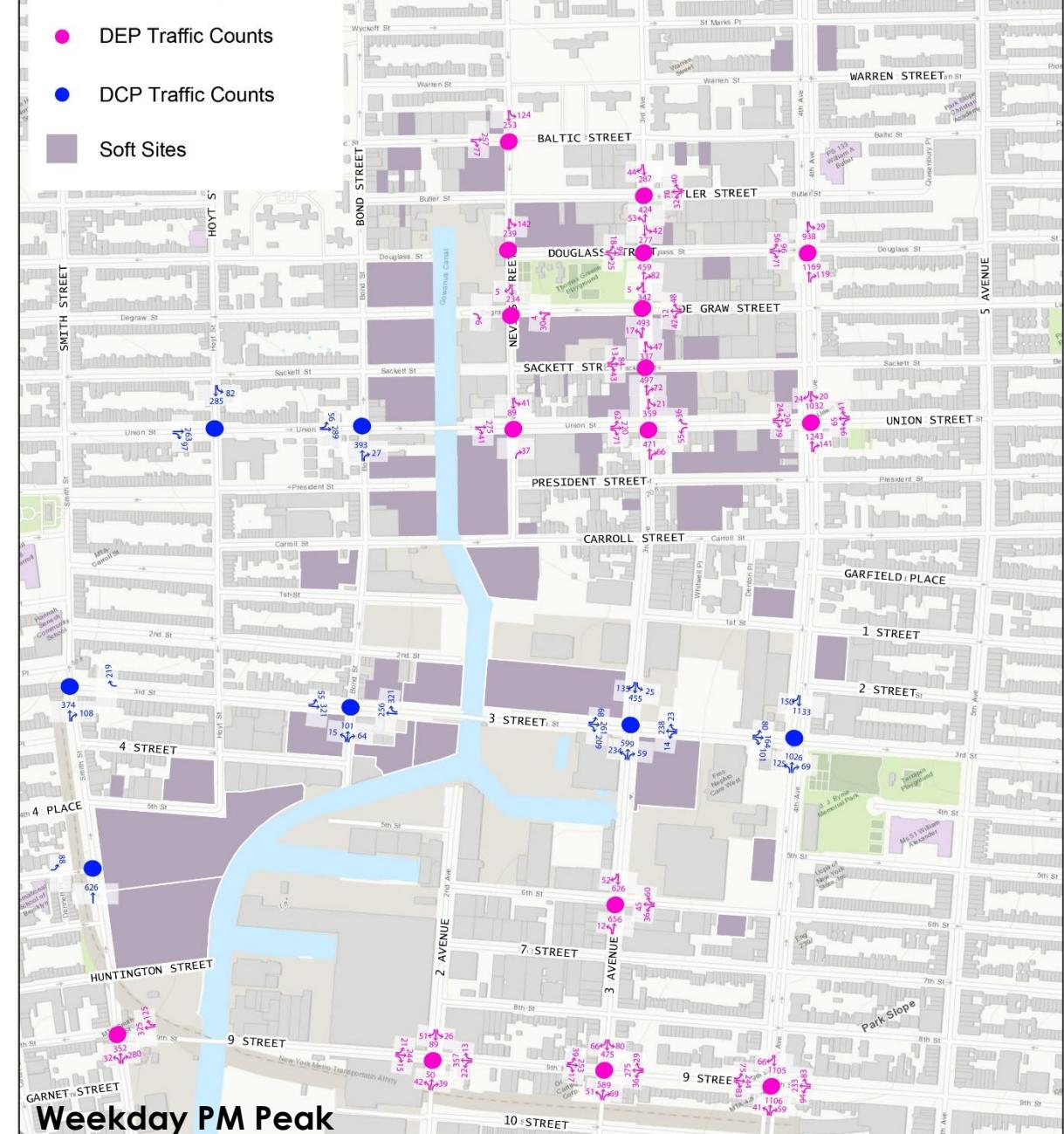
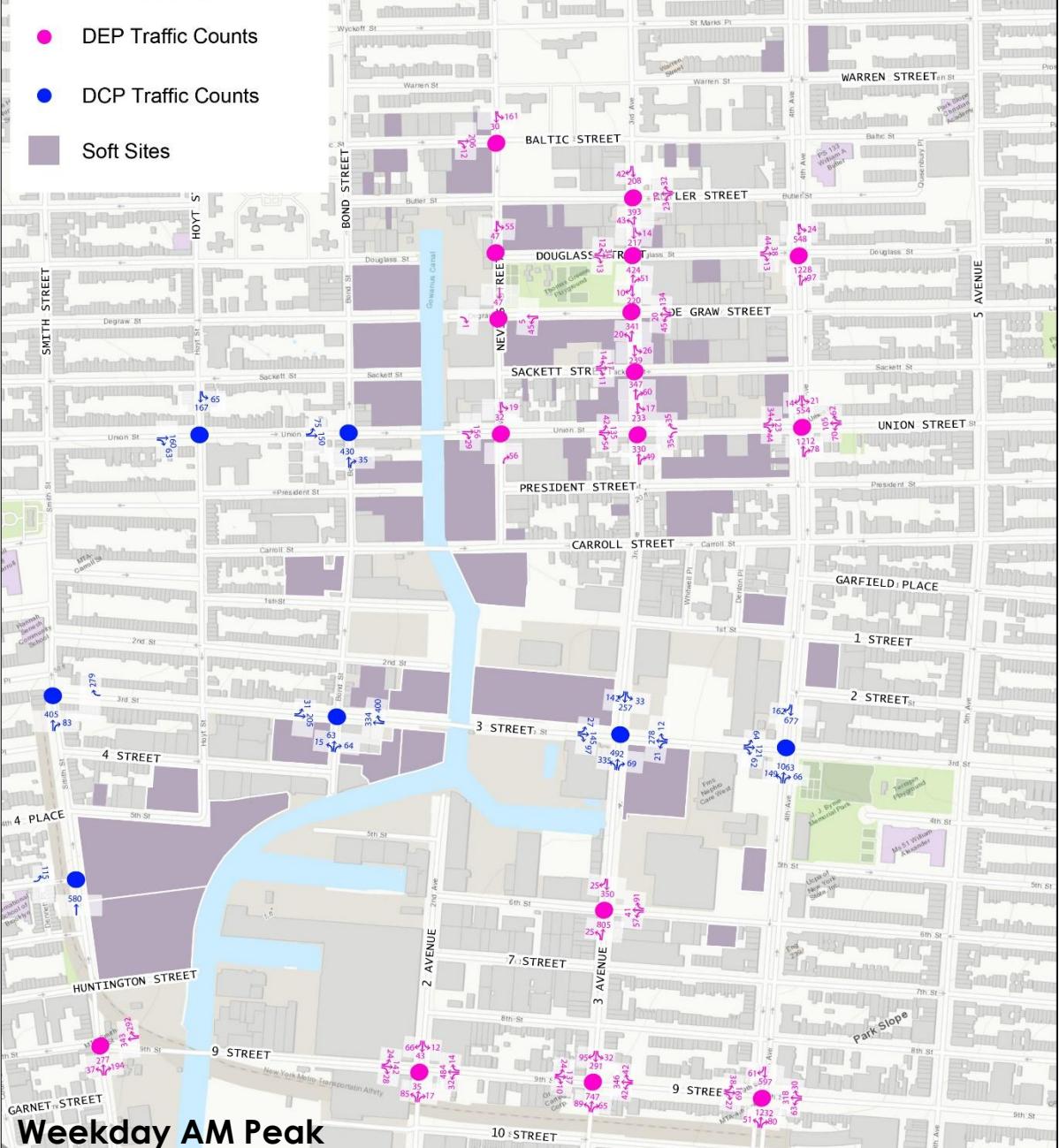
School Play Streets



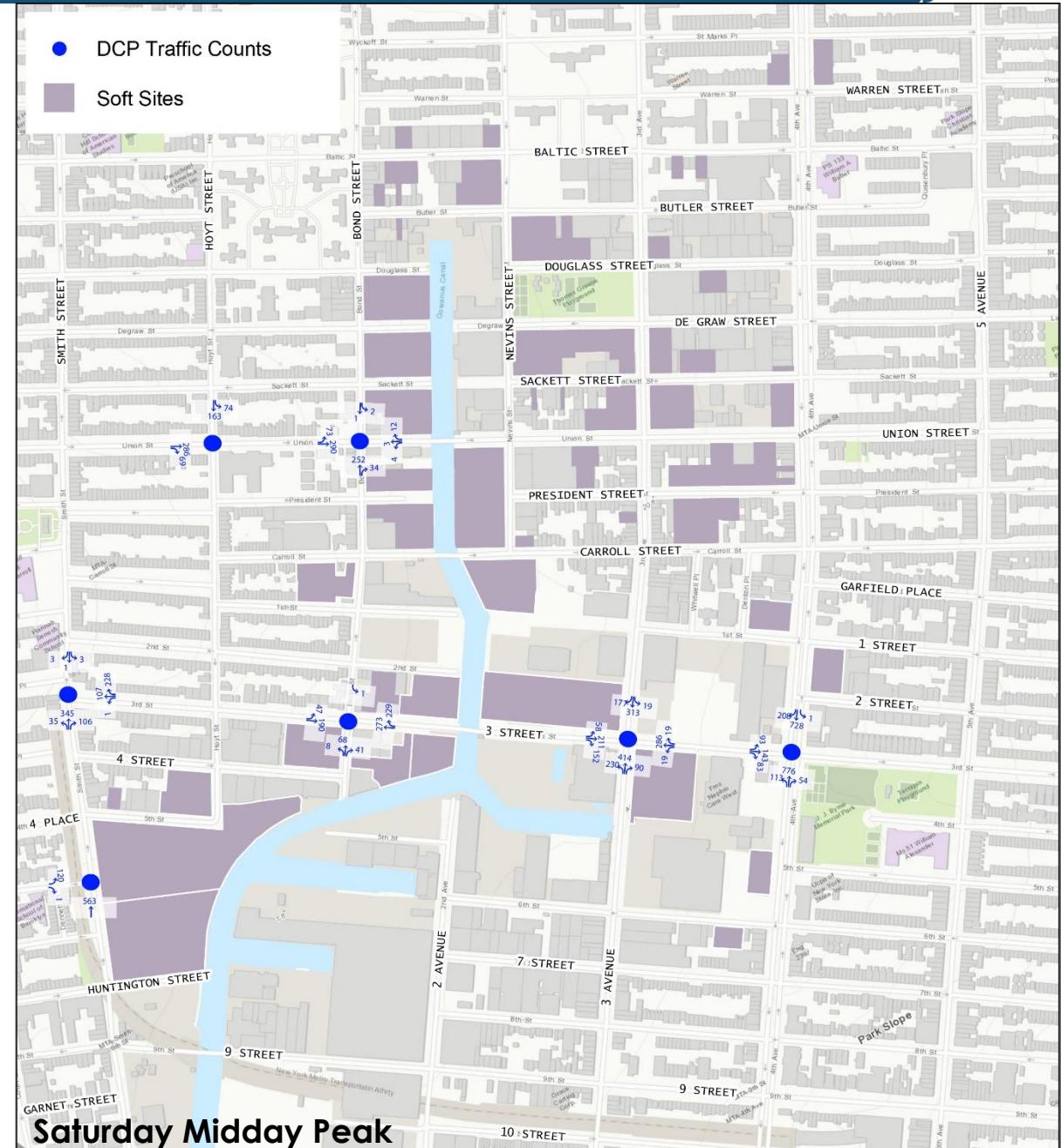
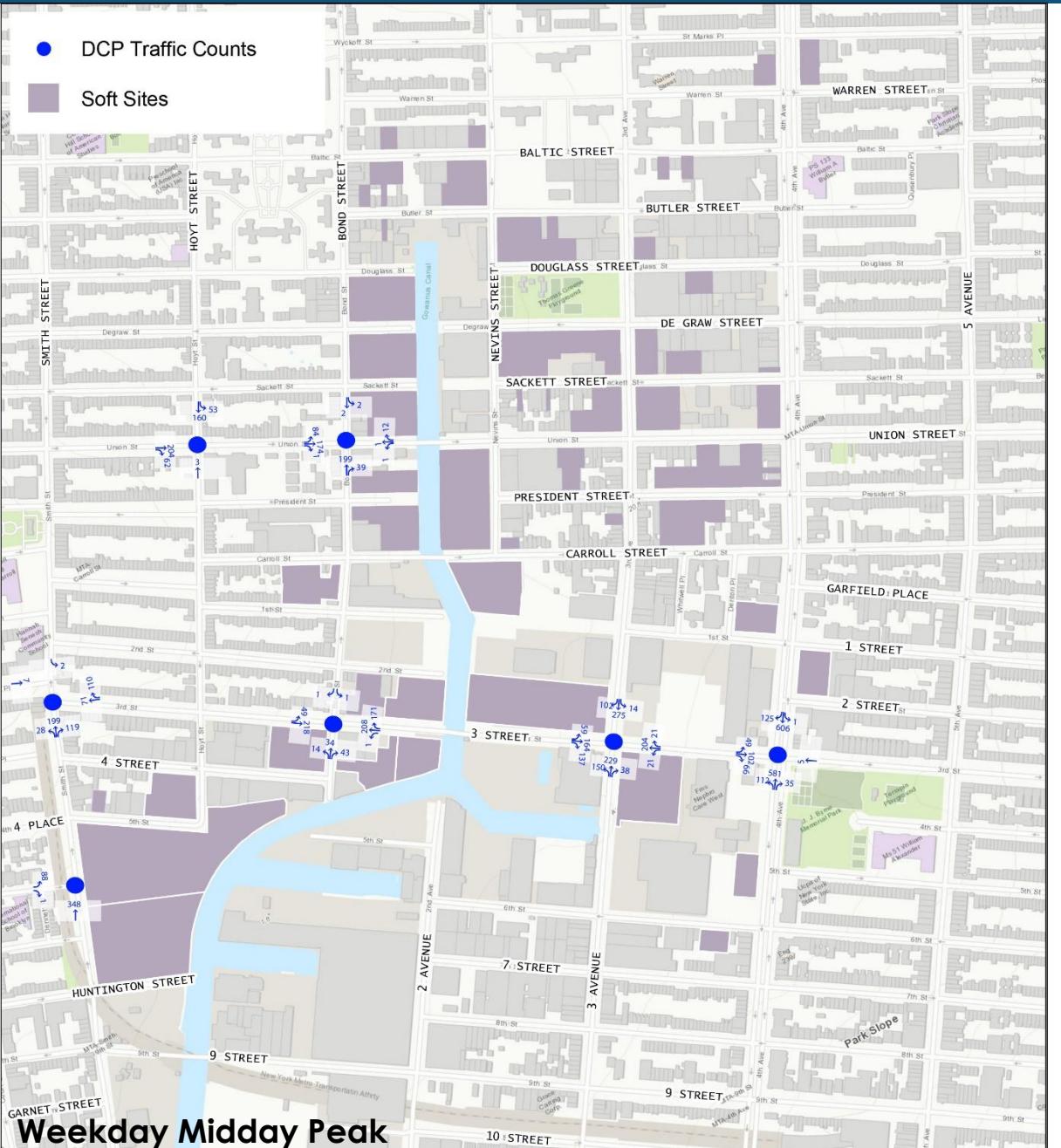
APPENDIX

Technical Details

Existing Condition – Traffic Volume



Existing Condition – Traffic Volume

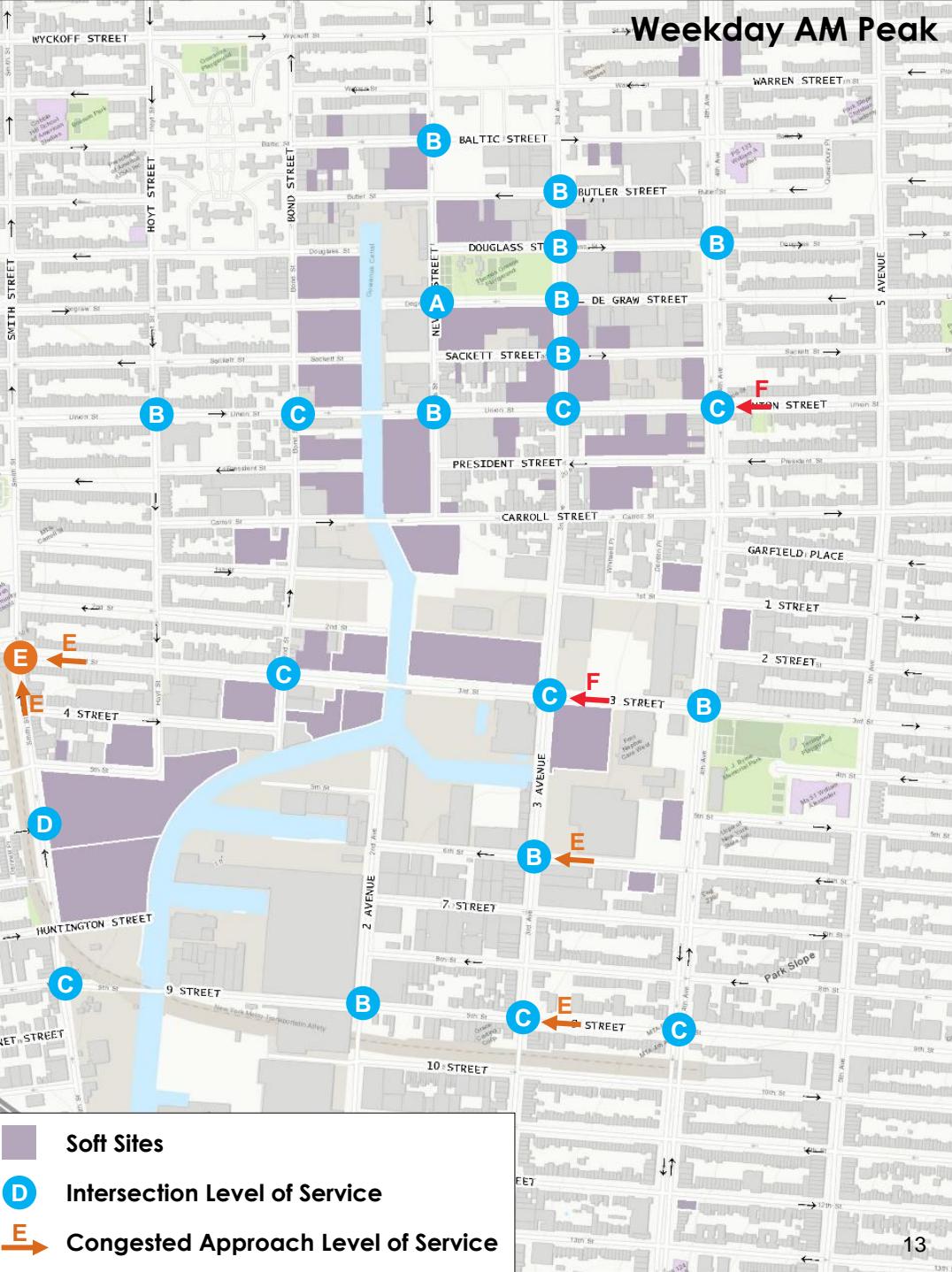


Existing Condition – AM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	C* (0.18)**	C (0.03)	-	-	-	B (0.69)	C (0.26)	B (0.42)	-			
4th Ave @ Union St (Signalized)	D (0.77)		F (0.97)			-	A (0.55)	B (0.16)	B (0.32)			
4th Ave @ 3rd St (Signalized)	D (0.74)		-			B (0.45)	A (0.63)	-	C (0.63)			
4th Ave @ 9th St (Signalized)	D (0.42)	D (0.42)	C (0.09)	D (0.30)	D (0.71)	D (0.38)	B (0.16)	B (0.76)	-	C (0.56)		
3rd Ave @ Butler St (Signalized)	-			C (0.30)			B (0.39)	-	-	C (0.45)		
3rd Ave @ Douglass St (Signalized)	C (0.10)			-			-	B (0.37)	C (0.40)	-		
3rd Ave @ Degraw St (Signalized)	-			C (0.54)			B (0.27)	-	-	B (0.36)		
3rd Ave @ Sackett St (Signalized)	C (0.11)			-			-	B (0.30)	B (0.42)	-		
3rd Ave @ Union St (Signalized)	D (0.61)		D (0.44)	C (0.12)			-	B (0.47)	B (0.31)	-		
3rd Ave @ 3rd St (Signalized)	D (0.37)	D (0.70)		F (1.03)			C (0.76)	A (0.64)	A (0.10)	B (0.42)		
3rd Ave @ 6th St (Signalized)	-			E (0.74)			A (0.47)	-	-	B (0.42)		
3rd Ave @ 9th St (Signalized)	E (0.52)	D (0.42)	D (0.23)	F (0.95)	D (0.17)	B (0.24)	A (0.46)	B (0.16)	B (0.46)	-		
Nevins St @ Baltic St (Unsignalized)	B (0.36)			-			-	-	B (0.32)			
Nevins St @ Degraw St (Unsignalized)	A (0.00)			A (0.08)			-	-	A (0.07)			
Nevins St @ Union St (Signalized)	-	A (0.34)					-	B (0.17)	B (0.14)	-		
2nd Ave @ 9th St (Signalized)	B (0.20)	B (0.32)	B (0.12)	C (0.81)			B (0.37)	-	B (0.28)			
Bond St @ Union St (Signalized)	C (0.69)	-		-			-	B (0.70)	-			
Bond St @ 3rd St (Signalized)	B (0.43)	-	-	B (0.45)	C (0.89)		B (0.38)	-	-			
Hoyt St @ Union St (Signalized)	-	C (0.69)		-			-	-	B (0.45)	-		
Smith St @ 3rd St (Signalized)	-		-	E (0.99)			-	E (1.01)	-			
Smith St @ Luquer St (Unsignalized)	D (0.43)			-			-	-	-			
Smith St @ 9th St (Signalized)	-		-	B (0.72)	D (0.84)		B (0.57)	C (0.60)	-			

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

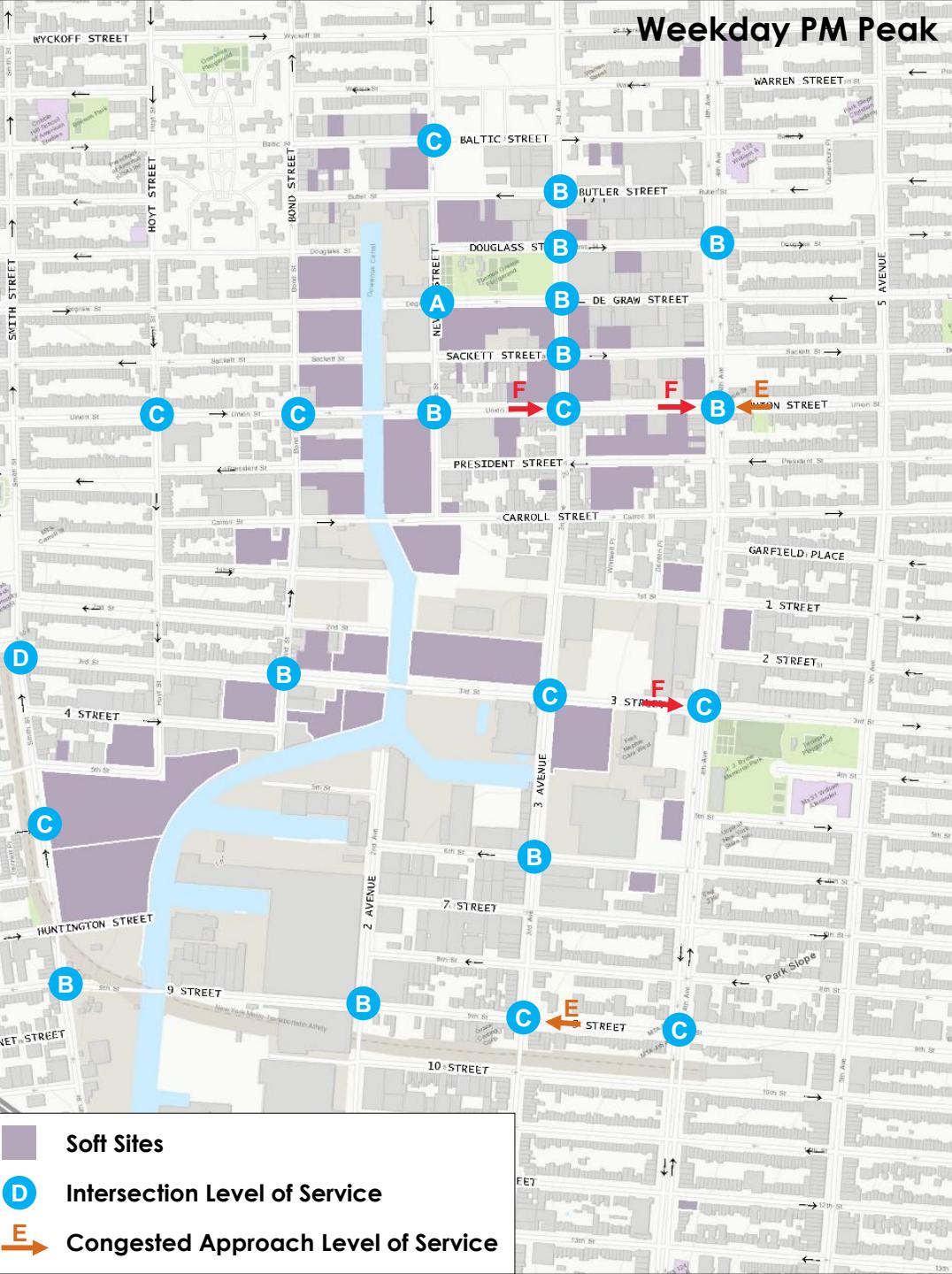


Existing Condition – PM LOS

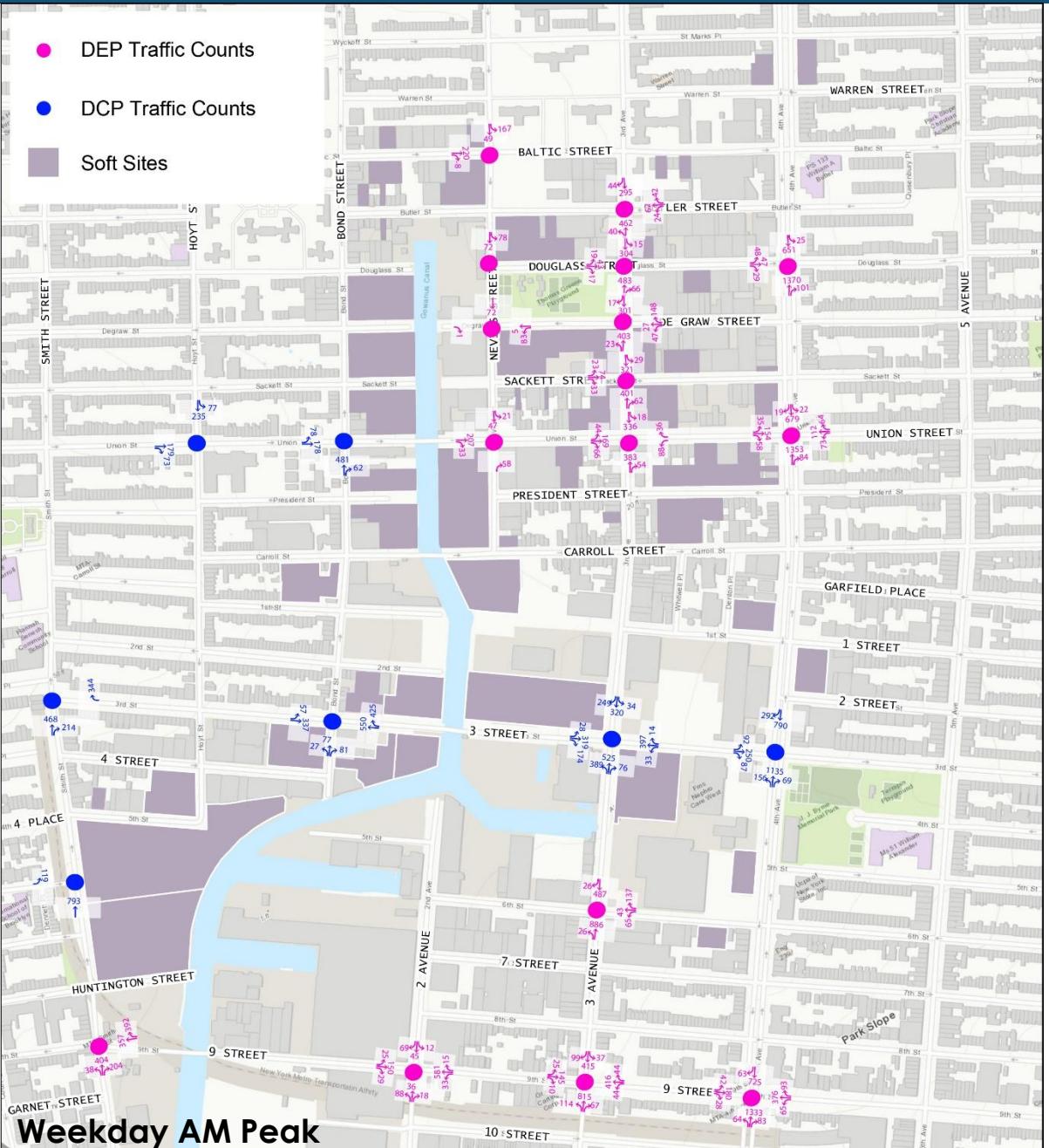
Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	D* (0.42)**	C (0.21)	-	-	-	B (0.53)	B (0.22)	A (0.55)	-			
4th Ave @ Union St (Signalized)	E (0.88)	-	F (0.98)	-	-	B (0.57)	B (0.17)	A (0.56)	-			
4th Ave @ 3rd St (Signalized)	F (0.97)	-	-	-	B (0.48)	B (0.57)	-	-	B (0.80)	-		
4th Ave @ 9th St (Signalized)	D (0.48)	D (0.56)	D (0.31)	D (0.63)	D (0.57)	D (0.37)	C (0.15)	C (0.71)	-	C (0.79)	-	
3rd Ave @ Butler St (Signalized)	-	-	-	D (0.57)	-	B (0.60)	-	-	-	A (0.44)	-	
3rd Ave @ Douglass St (Signalized)	-	D (0.44)	-	-	-	B (0.53)	-	A (0.42)	-	-		
3rd Ave @ Degraw St (Signalized)	-	-	-	D (0.38)	-	B (0.50)	-	-	-	A (0.38)	-	
3rd Ave @ Sackett St (Signalized)	-	D (0.49)	-	-	-	B (0.57)	-	A (0.51)	-	-		
3rd Ave @ Union St (Signalized)	F (1.00)	-	D (0.55)	C (0.12)	-	B (0.54)	-	A (0.39)	-	-		
3rd Ave @ 3rd St (Signalized)	D (0.38)	E (0.89)	-	D (0.66)	-	D (0.86)	C (0.83)	B (0.18)	B (0.63)	-		
3rd Ave @ 6th St (Signalized)	-	-	-	D (0.50)	-	B (0.39)	-	-	-	A (0.72)	-	
3rd Ave @ 9th St (Signalized)	D (0.39)	D (0.71)	-	D (0.39)	E (0.76)	D (0.09)	B (0.13)	B (0.39)	B (0.28)	A (0.51)	-	
Nevins St @ Baltic St (Unsignalized)	-	B (0.56)	-	-	-	-	-	-	C (0.62)	-		
Nevins St @ Degraw St (Unsignalized)	-	A (0.01)	-	-	A (0.05)	-	-	-	A (0.31)	-		
Nevins St @ Union St (Signalized)	-	B (0.52)	-	-	-	-	-	B (0.10)	B (0.35)	-		
2nd Ave @ 9th St (Signalized)	B (0.09)	B (0.41)	-	B (0.07)	B (0.56)	-	B (0.32)	-	B (0.37)	-		
Bond St @ Union St (Signalized)	-	D (0.89)	-	-	-	-	B (0.71)	-	-	-		
Bond St @ 3rd St (Signalized)	-	B (0.64)	-	-	A (0.37)	B (0.70)	-	B (0.41)	-	-		
Hoyt St @ Union St (Signalized)	-	D (0.95)	-	-	-	-	-	-	B (0.62)	-		
Smith St @ 3rd St (Signalized)	-	-	-	-	C (0.68)	-	D (0.94)	-	-	-		
Smith St @ Luquer St (Unsignalized)	-	C (0.29)	-	-	-	-	-	-	-	-		
Smith St @ 9th St (Signalized)	-	-	-	-	B (0.61)	B (0.33)	C (0.64)	C (0.71)	-	-		

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

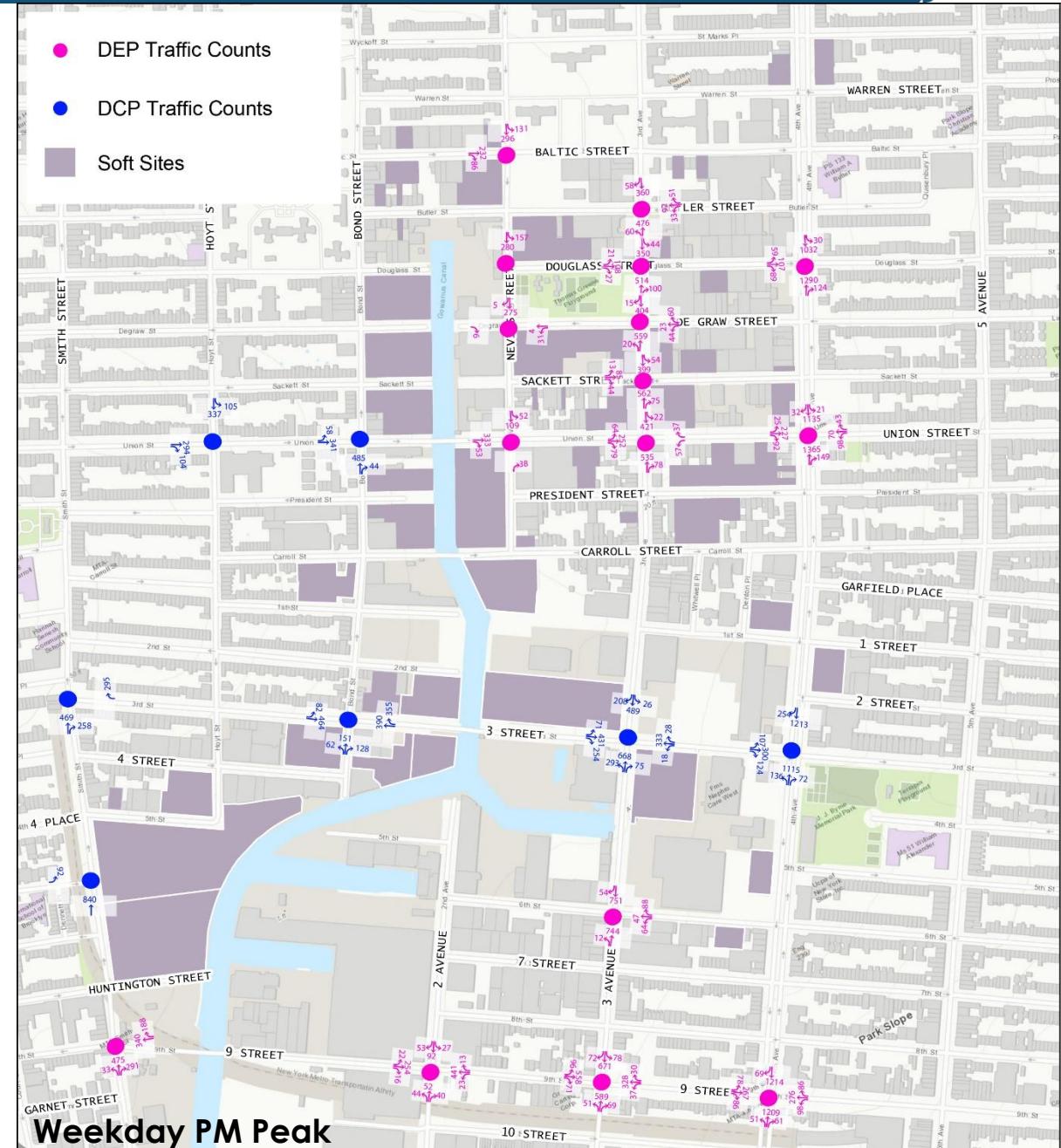
** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)



Future Scenario – Traffic Volume



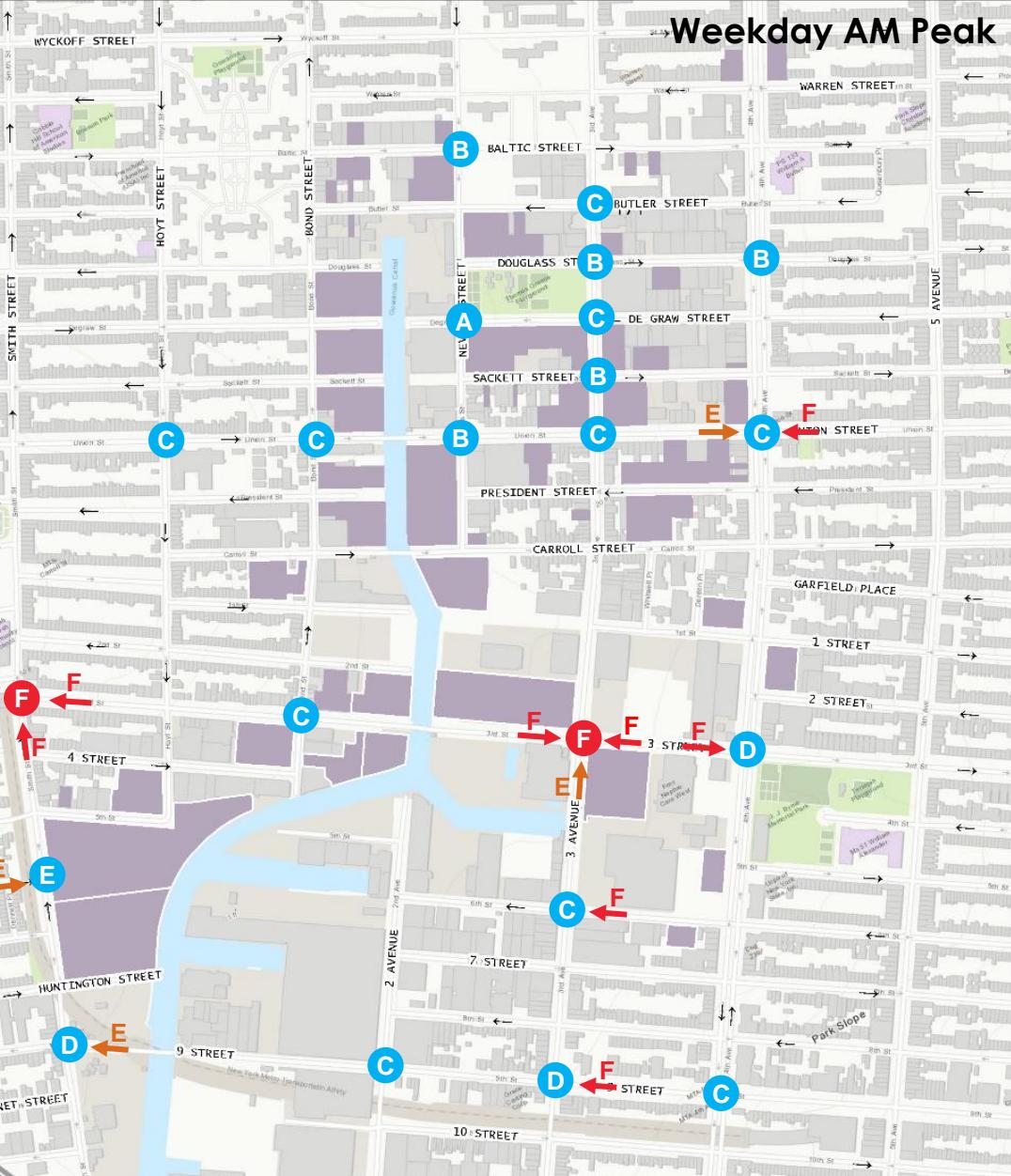
Weekday AM Peak



Weekday PM Peak

Future Scenario – AM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	C* (0.20)**	C (0.07)	-	-	-	-	B (0.76)	-	-	C (0.34)	B (0.49)	-
4th Ave @ Union St (Signalized)	E (0.94)	-	F (1.11)	-	-	-	A (0.61)	-	-	B (0.20)	B (0.40)	-
4th Ave @ 3rd St (Signalized)	F (1.27)	-	-	-	-	-	C (0.59)	A (0.67)	-	-	C (0.83)	-
4th Ave @ 9th St (Signalized)	E (0.62)	D (0.44)	C (0.10)	D (0.32)	E (0.84)	D (0.39)	C (0.22)	B (0.81)	-	-	C (0.67)	-
3rd Ave @ Butler St (Signalized)	-	-	-	C (0.29)	-	-	B (0.45)	-	-	-	C (0.60)	-
3rd Ave @ Douglass St (Signalized)	C (0.14)	-	-	-	-	-	B (0.43)	-	-	C (0.56)	-	-
3rd Ave @ Degraw St (Signalized)	-	-	-	D (0.60)	-	-	B (0.32)	-	-	-	B (0.50)	-
3rd Ave @ Sackett St (Signalized)	C (0.32)	-	-	-	-	-	B (0.34)	-	-	C (0.55)	-	-
3rd Ave @ Union St (Signalized)	D (0.74)	-	D (0.50)	C (0.12)	-	-	B (0.53)	-	-	B (0.43)	-	-
3rd Ave @ 3rd St (Signalized)	E (0.58)	F (1.39)	-	F (5.28)	-	F (1.23)	A (0.69)	-	-	A (0.11)	B (0.61)	-
3rd Ave @ 6th St (Signalized)	-	-	-	F (0.97)	-	A (0.51)	-	-	-	-	B (0.57)	-
3rd Ave @ 9th St (Signalized)	E (0.55)	D (0.44)	D (0.25)	F (1.14)	D (0.18)	B (0.40)	A (0.50)	-	-	B (0.20)	B (0.60)	-
Nevins St @ Baltic St (Unsignalized)	B (0.37)	-	-	-	-	-	-	-	-	B (0.37)	-	-
Nevins St @ Degraw St (Unsignalized)	A (0.00)	-	A (0.14)	-	-	-	-	-	-	A (0.11)	-	-
Nevins St @ Union St (Signalized)	-	B (0.44)	-	-	-	-	B (0.18)	-	-	B (0.19)	-	-
2nd Ave @ 9th St (Signalized)	B (0.24)	B (0.34)	B (0.12)	D (0.97)	-	B (0.38)	-	-	-	B (0.29)	-	-
Bond St @ Union St (Signalized)	C (0.78)	-	-	-	-	-	C (0.84)	-	-	-	-	-
Bond St @ 3rd St (Signalized)	C (0.84)	-	-	B (0.74)	D (0.95)	-	C (0.50)	-	-	-	-	-
Hoyt St @ Union St (Signalized)	-	C (0.78)	-	-	-	-	-	-	-	B (0.60)	-	-
Smith St @ 3rd St (Signalized)	-	-	-	F (1.22)	-	F (1.52)	-	-	-	-	-	-
Smith St @ Luquer St (Unsignalized)	E (0.62)	-	-	-	-	-	-	-	-	-	-	-
Smith St @ 9th St (Signalized)	-	-	-	C (0.80)	F (1.13)	C (0.79)	C (0.63)	-	-	-	-	-



Soft Sites

Intersection Level of Service

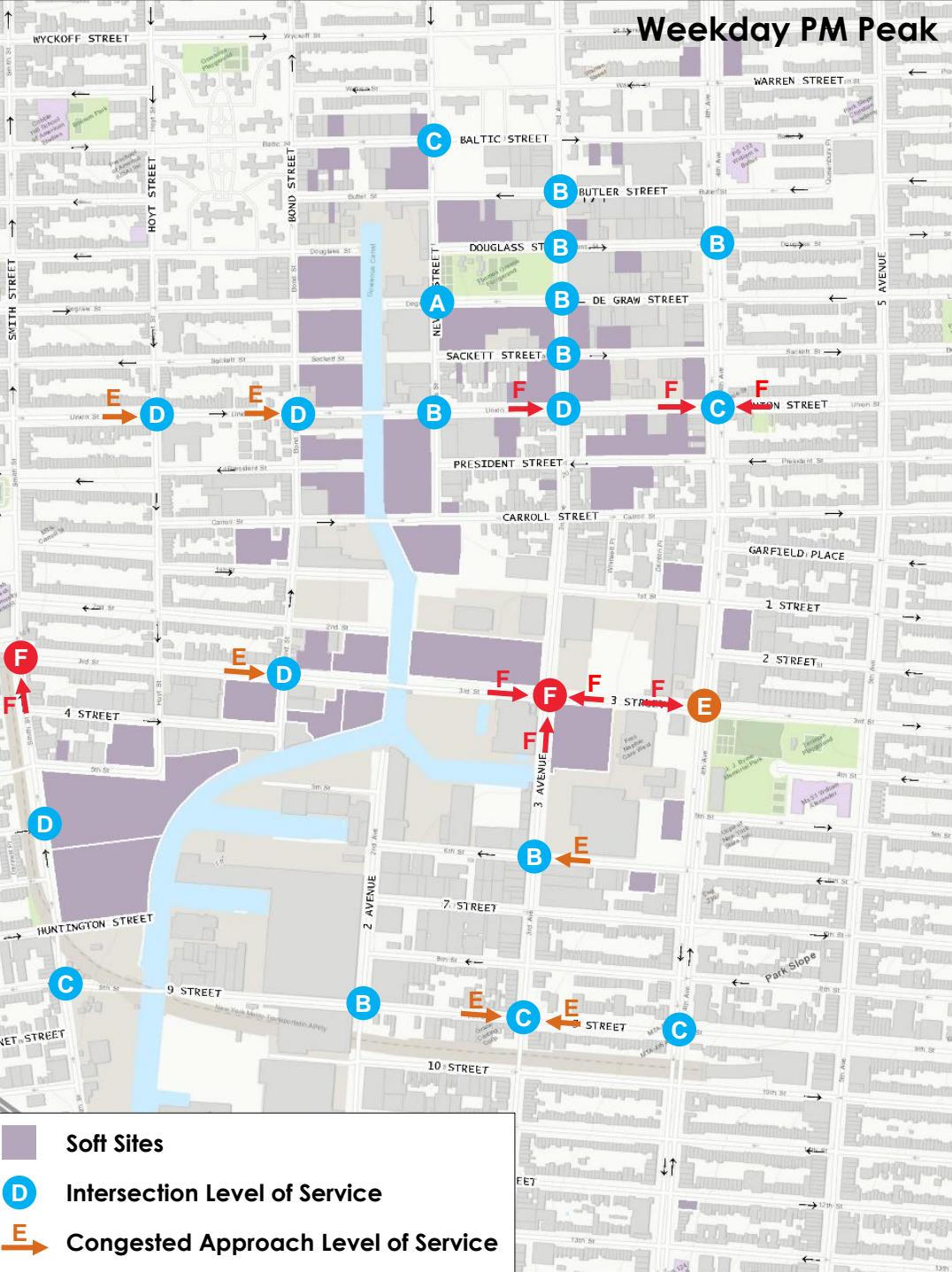
Congested Approach Level of Service

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

Future Scenario – PM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	D* (0.46)**	C (0.26)	-	-	-	B (0.58)	B (0.27)	A (0.60)	-			
4th Ave @ Union St (Signalized)	F (0.99)	-	F (1.12)	-	-	B (0.62)	B (0.21)	A (0.63)				
4th Ave @ 3rd St (Signalized)	F (1.47)	-	-	-	C (0.60)	B (0.62)	-	-	C (0.94)			
4th Ave @ 9th St (Signalized)	D (0.58)	D (0.61)	D (0.32)	E (0.71)	D (0.68)	D (0.38)	C (0.20)	C (0.77)	-	C (0.87)		
3rd Ave @ Butler St (Signalized)	-	-	-	D (0.69)	-	B (0.69)	-	-	A (0.56)			
3rd Ave @ Douglass St (Signalized)	D (0.44)	-	-	-	-	B (0.53)	A (0.42)	-				
3rd Ave @ Degraw St (Signalized)	-	-	-	D (0.47)	-	B (0.58)	-	-	A (0.46)			
3rd Ave @ Sackett St (Signalized)	D (0.49)	-	-	-	-	B (0.64)	A (0.61)	-				
3rd Ave @ Union St (Signalized)	F (1.11)	-	E (0.65)	C (0.12)	-	B (0.62)	A (0.45)	-				
3rd Ave @ 3rd St (Signalized)	D (0.54)	F (1.26)	-	F (1.41)	F (1.42)	D (0.94)	B (0.28)	B (0.75)				
3rd Ave @ 6th St (Signalized)	-	-	-	E (0.72)	-	B (0.44)	-	-	B (0.86)			
3rd Ave @ 9th St (Signalized)	E (0.56)	E (0.74)	D (0.43)	E (0.91)	D (0.10)	B (0.24)	B (0.44)	B (0.38)	B (0.60)			
Nevins St @ Baltic St (Unsignalized)	B (0.55)	-	-	-	-	C (0.70)						
Nevins St @ Degraw St (Unsignalized)	A (0.01)	-	-	A (0.06)	-	-	-	A (0.37)				
Nevins St @ Union St (Signalized)	-	B (0.64)	-	-	-	-	B (0.10)	B (0.44)	-			
2nd Ave @ 9th St (Signalized)	B (0.12)	B (0.43)	B (0.07)	B (0.69)	-	B (0.33)	-	B (0.38)				
Bond St @ Union St (Signalized)	E (1.02)	-	-	-	-	C (0.90)	-	-				
Bond St @ 3rd St (Signalized)	E (1.06)	-	-	B (0.56)	C (0.77)	C (0.81)	-	-				
Hoyt St @ Union St (Signalized)	-	E (1.05)	-	-	-	-	-	B (0.74)	-			
Smith St @ 3rd St (Signalized)	-	-	-	D (0.91)	-	F (1.52)	-	-				
Smith St @ Luquer St (Unsignalized)	D (0.41)	-	-	-	-	-	-	-				
Smith St @ 9th St (Signalized)	-	-	-	B (0.67)	B (0.49)	C (0.84)	C (0.74)	-				

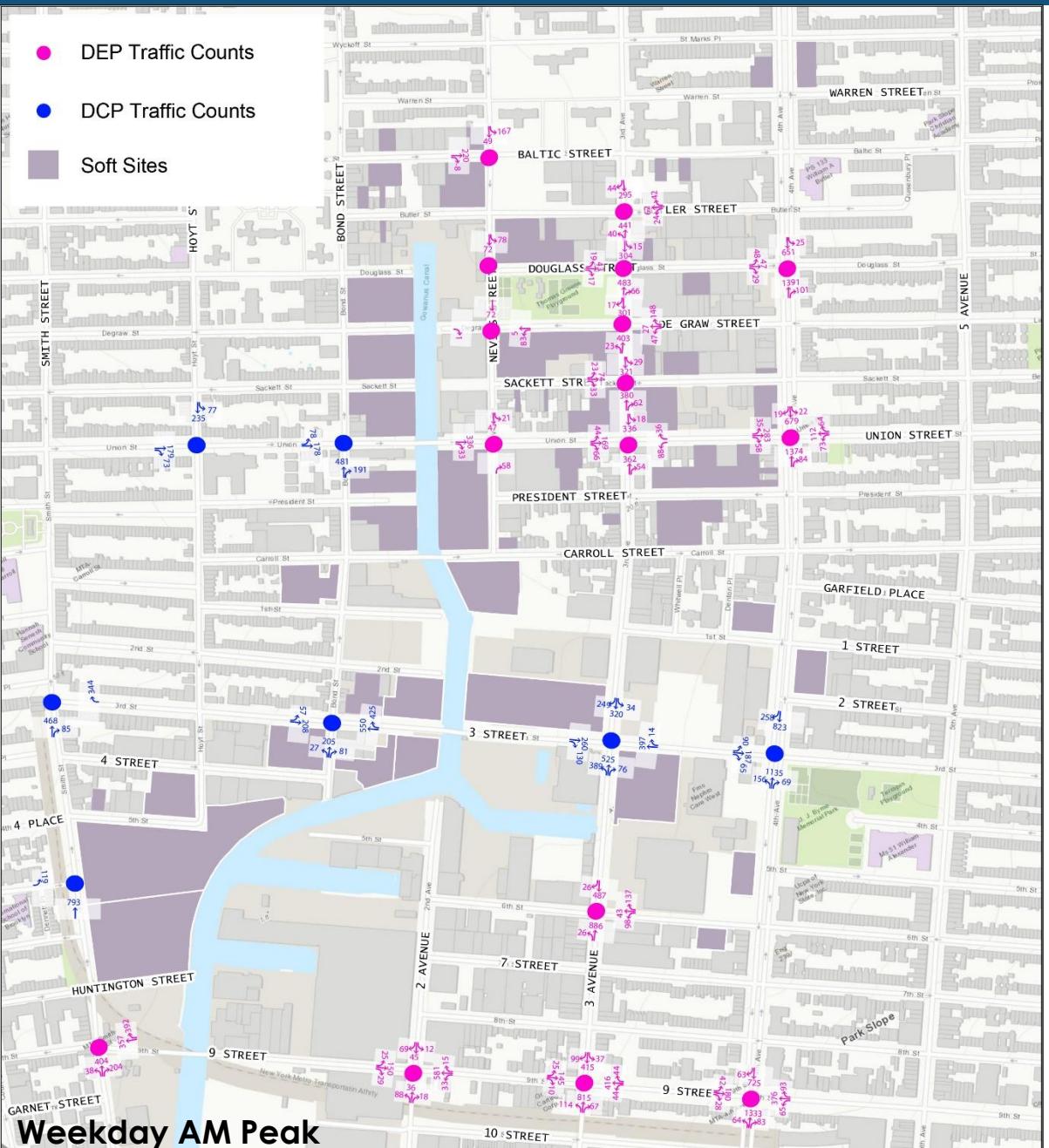


* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

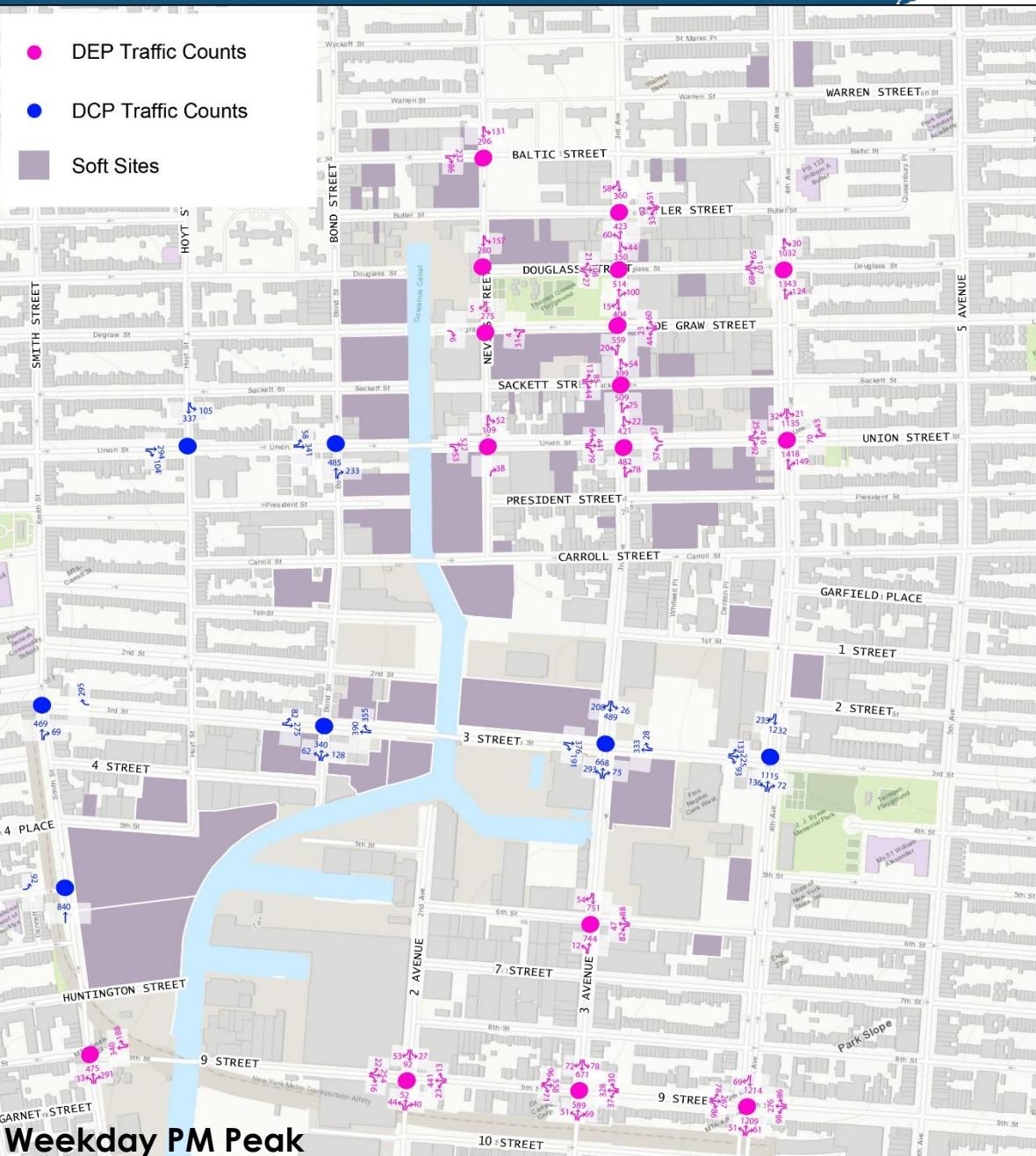
With Improvements – Traffic Volume

- DEP Traffic Counts
- DCP Traffic Counts
- Soft Sites



Weekday AM Peak

- DEP Traffic Counts
- DCP Traffic Counts
- Soft Sites



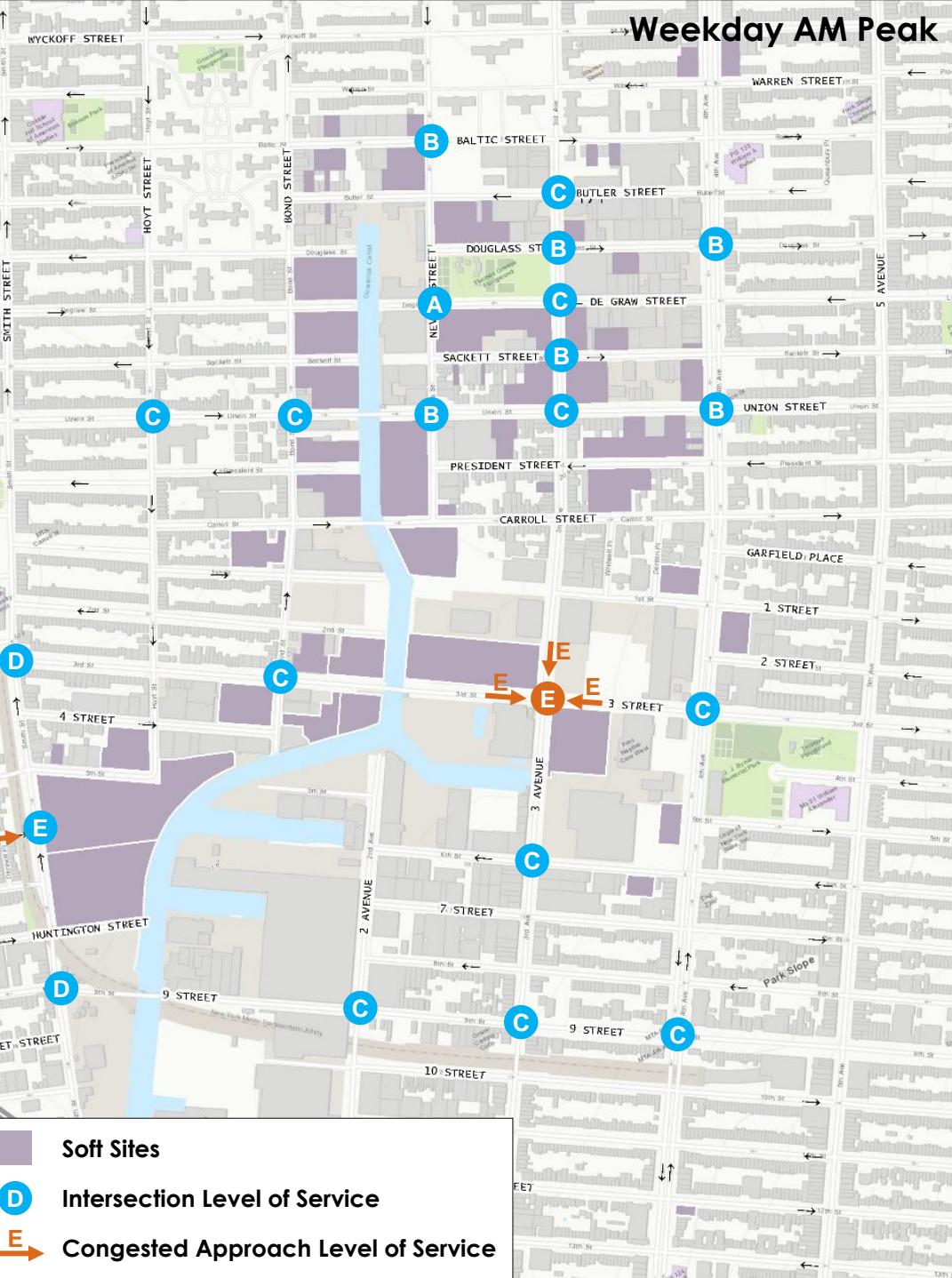
Weekday PM Peak

With Improvements – AM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	C* (0.20)**	C (0.07)	-	-	-	B (0.77)	C (0.36)	B (0.49)	-			
4th Ave @ Union St (Signalized)	D (0.67)		D (0.52)	-		A (0.62)	B (0.21)	B (0.40)				
4th Ave @ 3rd St (Signalized)	D (0.83)		-	C (0.71)	B (0.74)	-	-	D (0.89)				
4th Ave @ 9th St (Signalized)	E (0.62)	D (0.44)	C (0.10)	D (0.32)	E (0.84)	D (0.39)	C (0.22)	B (0.81)	-	C (0.67)		
3rd Ave @ Butler St (Signalized)	-		C (0.29)		B (0.43)	-	-	-	C (0.60)			
3rd Ave @ Douglass St (Signalized)	C (0.14)		-	-	B (0.43)		C (0.56)	-				
3rd Ave @ Degraw St (Signalized)	-		D (0.60)		B (0.32)	-	-	-	B (0.50)			
3rd Ave @ Sackett St (Signalized)	C (0.32)		-	-	B (0.33)		C (0.55)	-				
3rd Ave @ Union St (Signalized)	D (0.82)		C (0.46)	C (0.10)	-	B (0.60)	C (0.50)	-				
3rd Ave @ 3rd St (Signalized)	-	E (0.89)		E (0.88)	F (1.10)	B (0.74)	C (0.16)	E (0.96)				
3rd Ave @ 6th St (Signalized)	-		D (0.77)		B (0.60)	-	-	-	C (0.66)			
3rd Ave @ 9th St (Signalized)	D (0.31)	C (0.32)	C (0.17)	D (0.83)	C (0.12)	C (0.56)	B (0.60)	C (0.26)	C (0.71)			
Nevins St @ Baltic St (Unsignalized)	B (0.37)		-	-	-	-	B (0.37)					
Nevins St @ Degraw St (Unsignalized)	A (0.00)		A (0.14)		-	-	A (0.11)					
Nevins St @ Union St (Signalized)	-	B (0.66)		-	-	B (0.18)	B (0.19)	-				
2nd Ave @ 9th St (Signalized)	B (0.24)	B (0.34)	B (0.12)	D (0.97)		B (0.38)		B (0.29)				
Bond St @ Union St (Signalized)	C (0.78)	-	-	-	-	B (0.72)	B (0.40)	-				
Bond St @ 3rd St (Signalized)	B (0.61)	-	-	B (0.74)	D (0.95)	C (0.80)		-				
Hoyt St @ Union St (Signalized)	-	C (0.78)		-	-	-	B (0.60)	-				
Smith St @ 3rd St (Signalized)	-		-	D (0.96)	-	D (0.97)	B (0.35)	-				
Smith St @ Luquer St (Unsignalized)	E (0.62)		-	-	-	-	-	-				
Smith St @ 9th St (Signalized)	-		-	C (0.77)	F (1.08)	C (0.83)	C (0.67)	-				

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

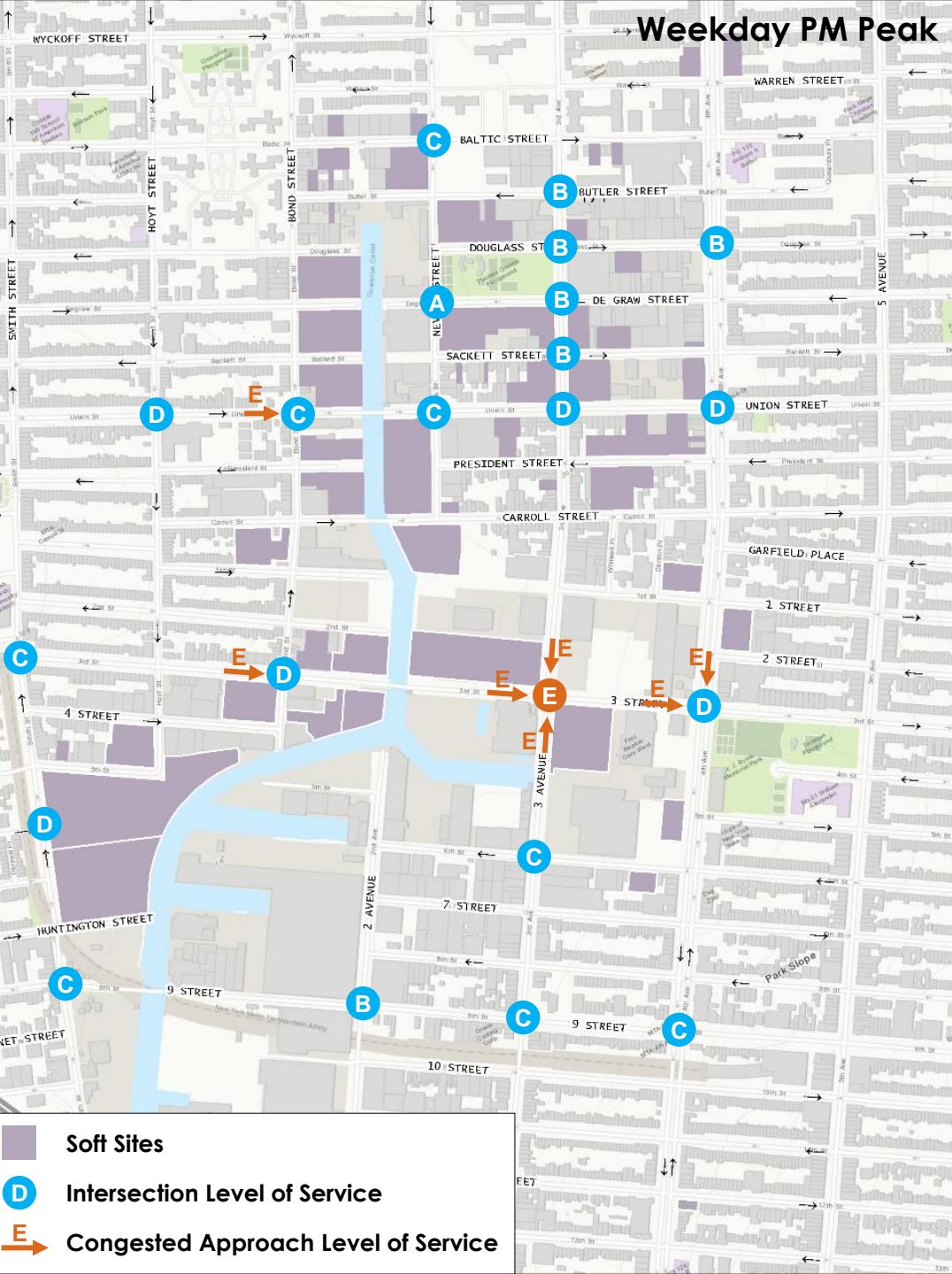


With Improvements – PM LOS

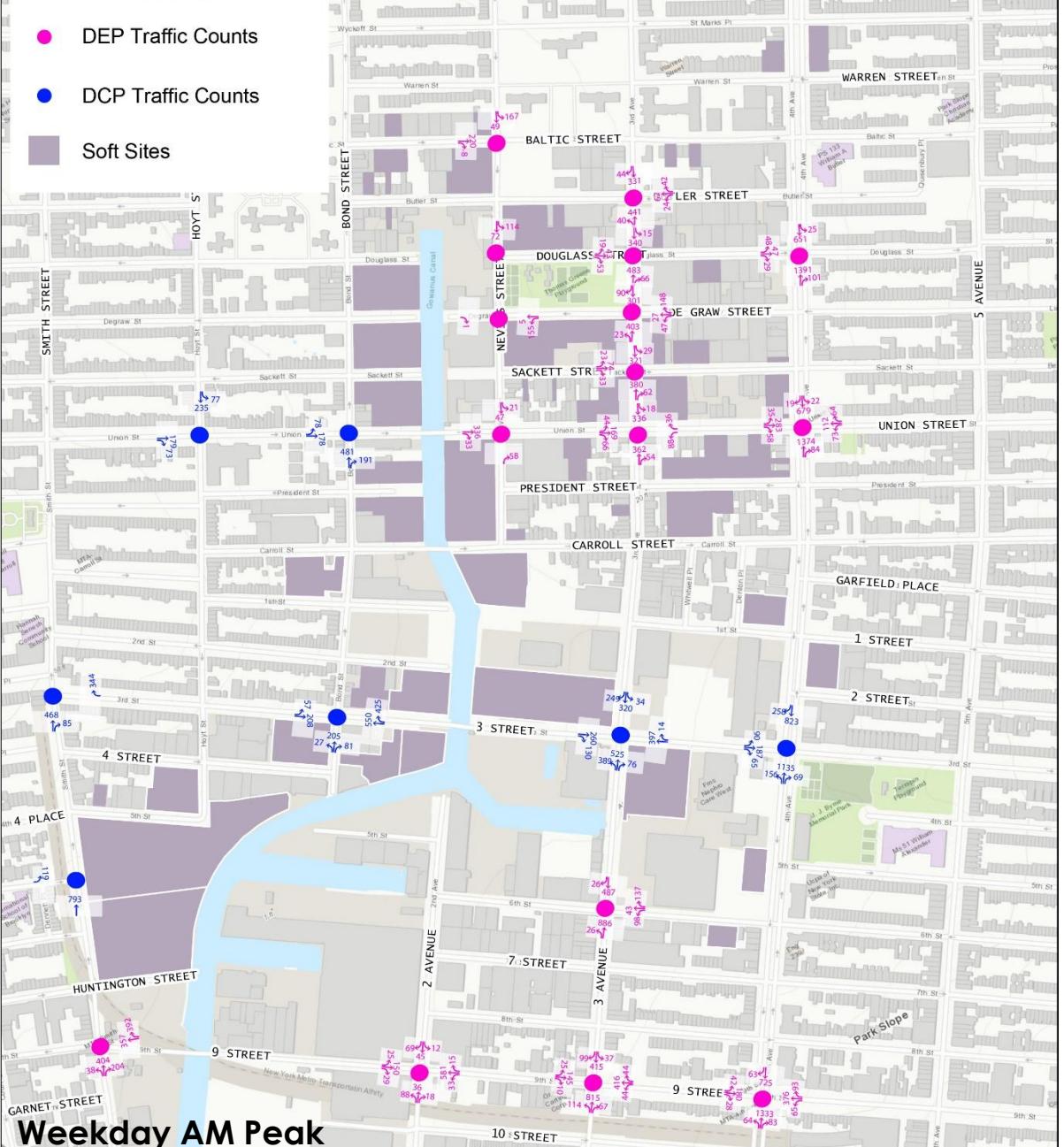
Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	D* (0.46)**	C (0.27)	-	-	-	B (0.60)	B (0.30)	A (0.60)	-			
4th Ave @ Union St (Signalized)	D (0.95)	-	B (0.20)	-	-	D (0.98)	D (0.43)	D (0.94)	-			
4th Ave @ 3rd St (Signalized)	E (0.94)	-	-	D (0.70)	B (0.69)	-	-	E (1.08)				
4th Ave @ 9th St (Signalized)	D (0.58)	D (0.61)	D (0.32)	E (0.71)	D (0.68)	D (0.38)	C (0.20)	C (0.77)	-	C (0.87)		
3rd Ave @ Butler St (Signalized)	-	-	D (0.69)	B (0.63)	-	-	-	-	A (0.56)			
3rd Ave @ Douglass St (Signalized)	D (0.48)	-	-	-	B (0.60)	-	A (0.51)	-	-			
3rd Ave @ Degraw St (Signalized)	-	-	D (0.47)	B (0.58)	-	-	-	-	A (0.46)			
3rd Ave @ Sackett St (Signalized)	D (0.49)	-	-	-	B (0.59)	-	A (0.60)	-	-			
3rd Ave @ Union St (Signalized)	C (0.83)	B (0.26)	B (0.06)	-	D (0.91)	-	D (0.82)	-	-			
3rd Ave @ 3rd St (Signalized)	-	E (0.97)	D (0.68)	F (1.08)	D (0.92)	C (0.24)	E (1.00)	-	-			
3rd Ave @ 6th St (Signalized)	-	-	D (0.69)	B (0.46)	-	-	-	-	C (0.90)			
3rd Ave @ 9th St (Signalized)	D (0.39)	D (0.65)	D (0.31)	E (0.80)	C (0.08)	B (0.27)	B (0.46)	C (0.41)	B (0.63)			
Nevins St @ Baltic St (Unsignalized)	B (0.55)	-	-	-	-	-	C (0.70)	-	-			
Nevins St @ Degraw St (Unsignalized)	A (0.01)	-	A (0.06)	-	-	-	A (0.37)	-	-			
Nevins St @ Union St (Signalized)	-	C (0.94)	-	-	-	-	B (0.10)	B (0.44)	-			
2nd Ave @ 9th St (Signalized)	B (0.12)	B (0.43)	B (0.07)	B (0.69)	B (0.33)	B (0.38)						
Bond St @ Union St (Signalized)	E (0.97)	-	-	-	-	C (0.86)	B (0.44)	-	-			
Bond St @ 3rd St (Signalized)	E (0.98)	-	-	B (0.64)	D (0.90)	D (0.96)	-	-	-			
Hoyt St @ Union St (Signalized)	-	D (0.95)	-	-	-	-	C (0.80)	-	-			
Smith St @ 3rd St (Signalized)	-	-	-	D (0.91)	-	C (0.76)	B (0.21)	-	-			
Smith St @ Luquer St (Unsignalized)	D (0.41)	-	-	-	-	-	-	-	-			
Smith St @ 9th St (Signalized)	-	-	-	B (0.67)	B (0.49)	C (0.84)	C (0.74)	-	-			

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)



Nevins Closure (50&50 Scenario) – Traffic Volume

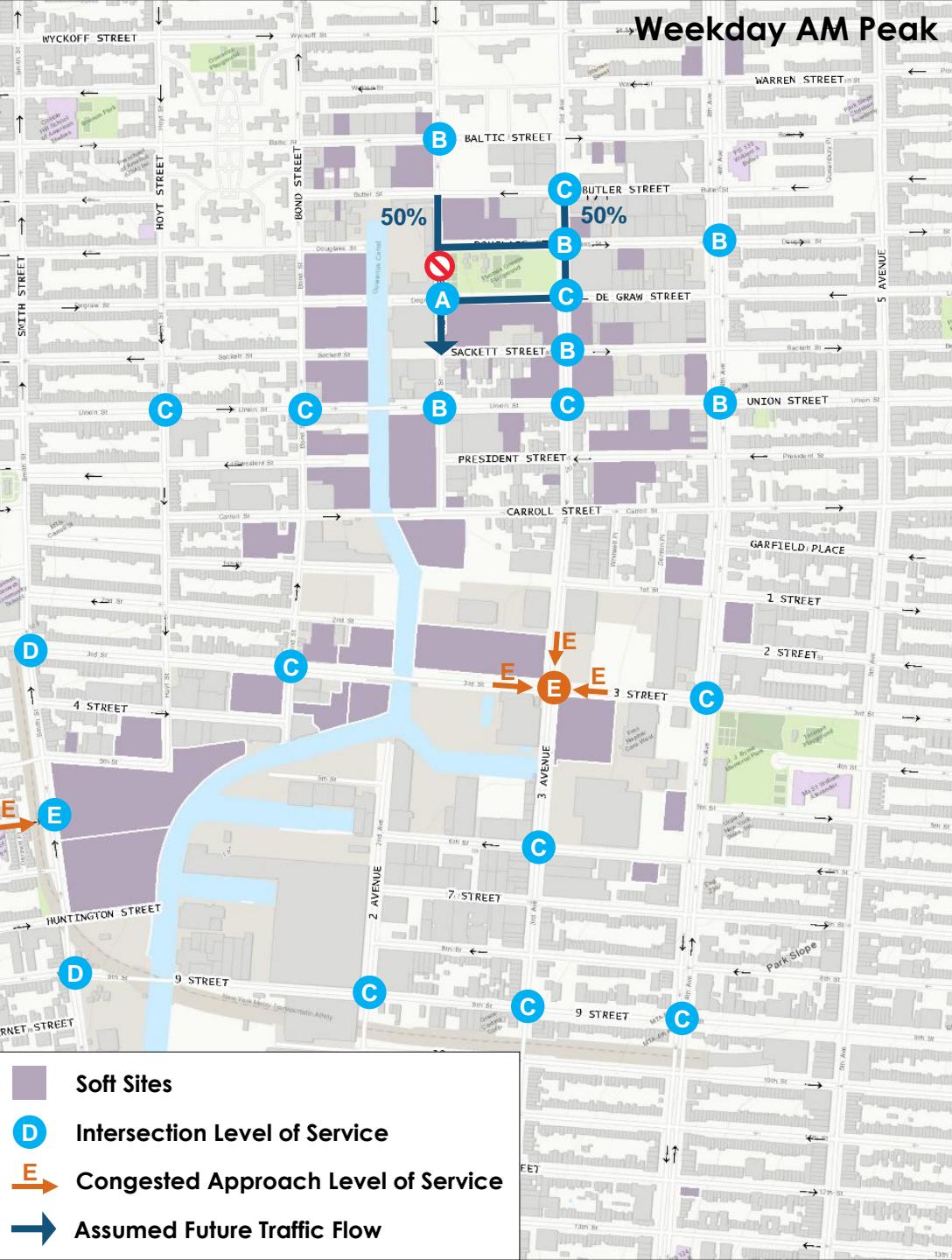


Nevins Closure (50&50 Scenario) – AM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	C* (0.20)**	C (0.07)	-	-	-	-	B (0.77)	C (0.36)	B (0.49)	-	-	-
4th Ave @ Union St (Signalized)	D (0.67)	-	-	D (0.52)	-	-	A (0.62)	B (0.21)	B (0.40)	-	-	-
4th Ave @ 3rd St (Signalized)	D (0.83)	-	-	-	-	-	C (0.71)	B (0.74)	-	D (0.89)	-	-
4th Ave @ 9th St (Signalized)	E (0.62)	D (0.44)	C (0.10)	D (0.32)	E (0.84)	D (0.39)	C (0.22)	B (0.81)	-	C (0.67)	-	-
3rd Ave @ Butler St (Signalized)	-	-	-	C (0.29)	-	-	B (0.44)	-	-	C (0.66)	-	-
3rd Ave @ Douglass St (Signalized)	C (0.10)	C (0.12)	-	-	-	-	B (0.43)	C (0.62)	-	-	-	-
3rd Ave @ Degraw St (Signalized)	-	-	-	D (0.60)	-	-	B (0.32)	-	-	C (0.65)	-	-
3rd Ave @ Sackett St (Signalized)	C (0.32)	-	-	-	-	-	B (0.33)	C (0.55)	-	-	-	-
3rd Ave @ Union St (Signalized)	-	D (0.82)	-	C (0.46)	C (0.10)	-	-	B (0.60)	C (0.50)	-	-	-
3rd Ave @ 3rd St (Signalized)	-	E (0.89)	-	E (0.88)	-	F (1.10)	B (0.74)	C (0.16)	E (0.96)	-	-	-
3rd Ave @ 6th St (Signalized)	-	-	-	D (0.77)	-	-	B (0.60)	-	-	C (0.66)	-	-
3rd Ave @ 9th St (Signalized)	D (0.31)	C (0.32)	C (0.17)	D (0.83)	C (0.12)	C (0.56)	B (0.60)	C (0.26)	C (0.71)	-	-	-
Nevins St @ Baltic St (Unsignalized)	-	B (0.37)	-	-	-	-	-	-	B (0.37)	-	-	-
Nevins St @ Degraw St (Unsignalized)	-	A (0.00)	-	A (0.24)	-	-	-	-	-	-	-	-
Nevins St @ Union St (Signalized)	-	B (0.66)	-	-	-	-	-	B (0.18)	B (0.19)	-	-	-
2nd Ave @ 9th St (Signalized)	B (0.24)	B (0.34)	B (0.12)	D (0.97)	-	-	B (0.38)	-	B (0.29)	-	-	-
Bond St @ Union St (Signalized)	C (0.78)	-	-	-	-	-	-	B (0.72)	B (0.40)	-	-	-
Bond St @ 3rd St (Signalized)	B (0.61)	-	-	B (0.74)	D (0.95)	-	C (0.80)	-	-	-	-	-
Hoyt St @ Union St (Signalized)	-	C (0.78)	-	-	-	-	-	-	B (0.60)	-	-	-
Smith St @ 3rd St (Signalized)	-	-	-	-	D (0.96)	-	-	D (0.97)	B (0.35)	-	-	-
Smith St @ Luquer St (Unsignalized)	E (0.62)	-	-	-	-	-	-	-	-	-	-	-
Smith St @ 9th St (Signalized)	-	-	-	C (0.77)	F (1.08)	-	C (0.83)	C (0.67)	-	-	-	-

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

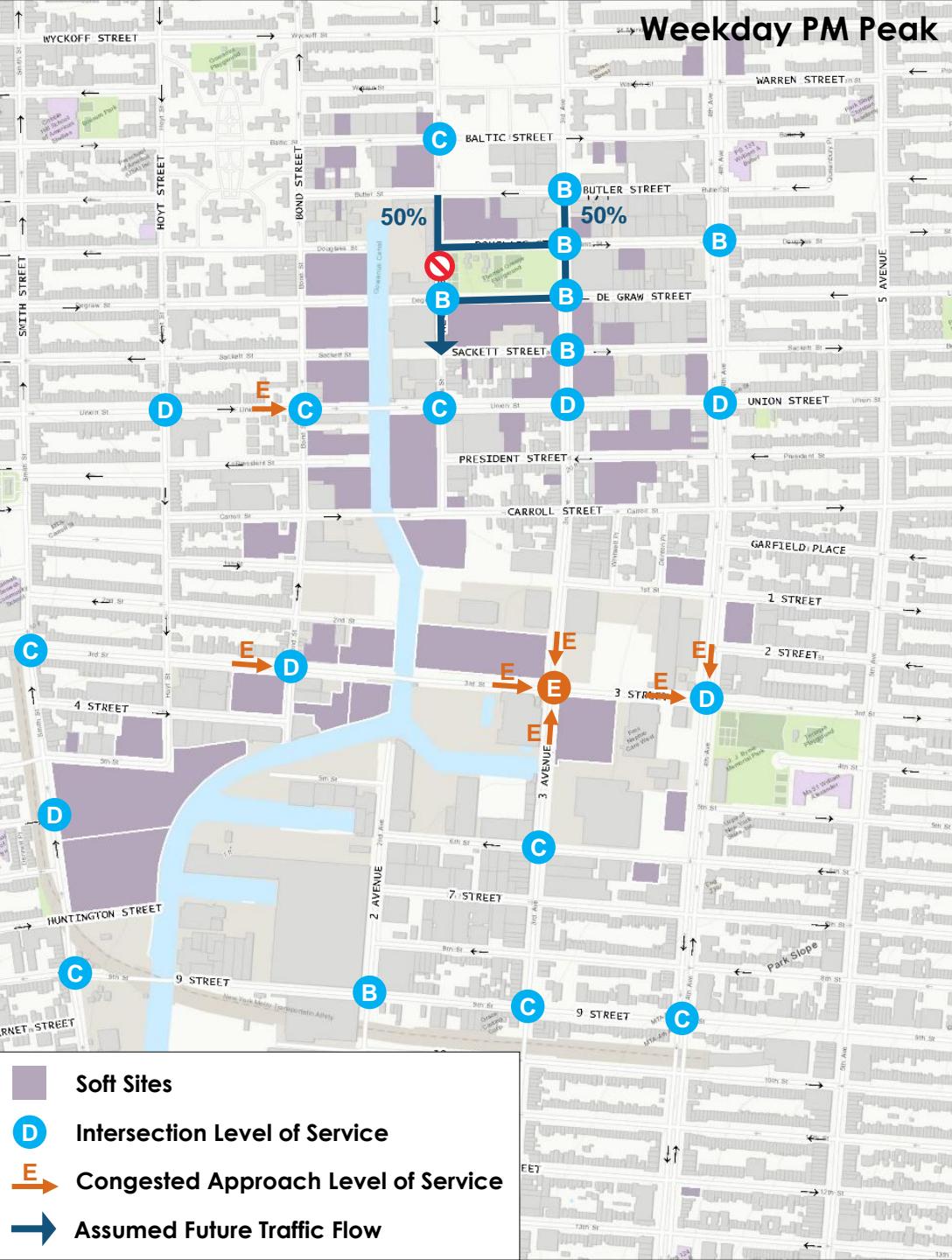


Nevins Closure (50&50 Scenario) – PM LOS

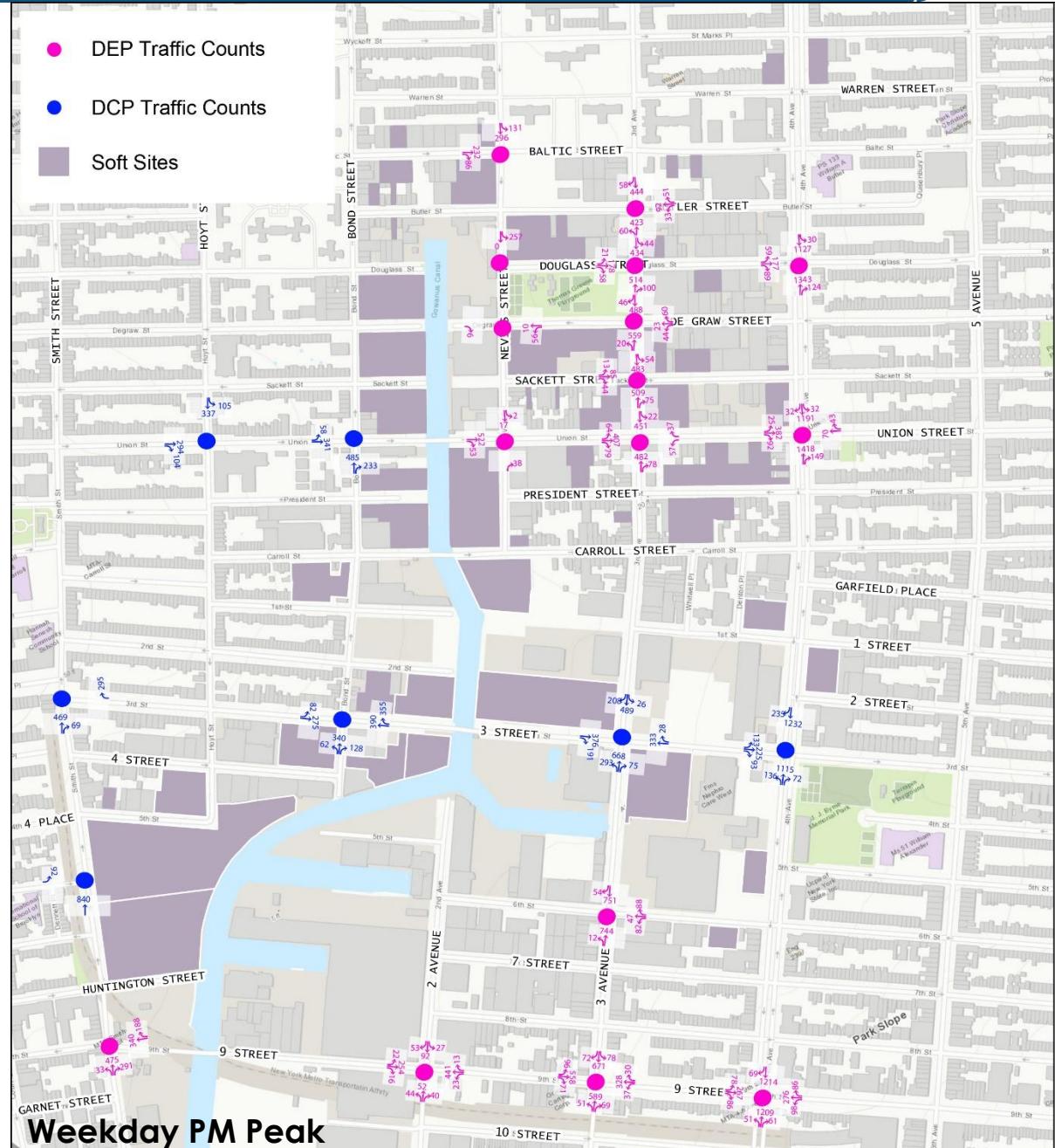
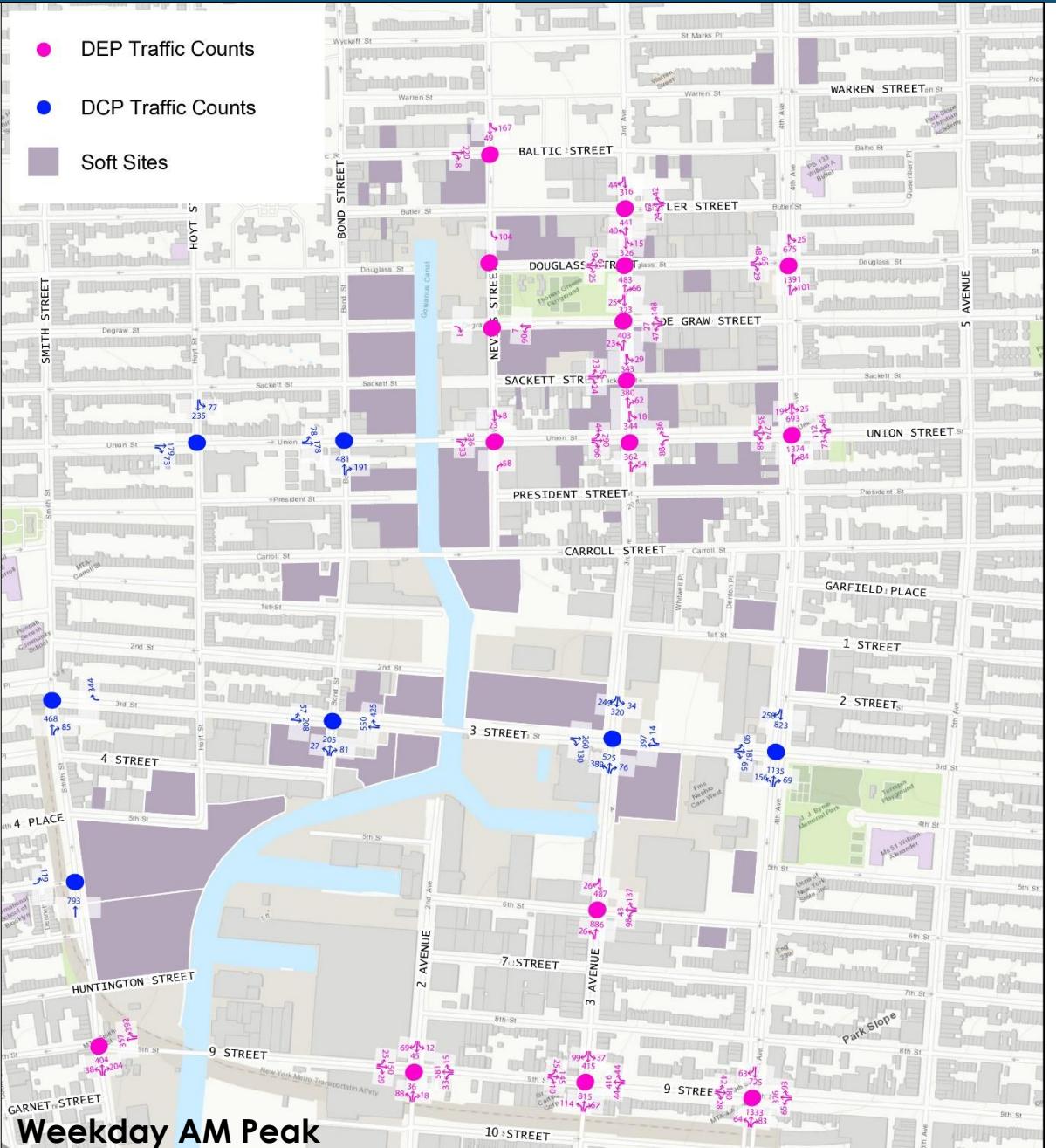
Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	D* (0.46)**	C (0.27)	-	-	-	B (0.60)	B (0.30)	A (0.60)	-			
4th Ave @ Union St (Signalized)	D (0.95)	-	B (0.20)	-	-	D (0.98)	D (0.43)	D (0.94)	-			
4th Ave @ 3rd St (Signalized)	E (0.94)	-	-	-	D (0.70)	B (0.69)	-	-	E (1.08)			
4th Ave @ 9th St (Signalized)	D (0.58)	D (0.61)	D (0.32)	E (0.71)	D (0.68)	D (0.38)	C (0.20)	C (0.77)	-	C (0.87)		
3rd Ave @ Butler St (Signalized)	-	-	-	D (0.69)	-	B (0.65)	-	-	B (0.74)			
3rd Ave @ Douglass St (Signalized)	D (0.41)	D (0.61)	-	-	-	B (0.60)	A (0.67)	-	-			
3rd Ave @ Degraw St (Signalized)	-	-	-	D (0.47)	-	B (0.59)	-	-	B (0.88)			
3rd Ave @ Sackett St (Signalized)	D (0.49)	-	-	-	-	B (0.59)	A (0.60)	-	-			
3rd Ave @ Union St (Signalized)	C (0.83)	-	B (0.26)	B (0.06)	-	D (0.91)	D (0.82)	-	-			
3rd Ave @ 3rd St (Signalized)	-	E (0.97)	-	D (0.68)	F (1.08)	D (0.92)	C (0.24)	E (1.00)	-			
3rd Ave @ 6th St (Signalized)	-	-	-	D (0.69)	-	B (0.46)	-	-	C (0.90)			
3rd Ave @ 9th St (Signalized)	D (0.39)	D (0.65)	D (0.31)	E (0.80)	C (0.08)	B (0.27)	B (0.46)	C (0.41)	B (0.63)			
Nevins St @ Baltic St (Unsignalized)	B (0.55)	-	-	-	-	-	C (0.70)	-	-			
Nevins St @ Degraw St (Unsignalized)	A (0.01)	-	-	B (0.46)	-	-	-	-	-			
Nevins St @ Union St (Signalized)	-	C (0.94)	-	-	-	-	B (0.10)	B (0.44)	-			
2nd Ave @ 9th St (Signalized)	B (0.12)	B (0.43)	B (0.07)	B (0.69)	-	B (0.33)	-	B (0.38)	-			
Bond St @ Union St (Signalized)	E (0.97)	-	-	-	-	-	C (0.86)	B (0.44)	-			
Bond St @ 3rd St (Signalized)	E (0.98)	-	-	B (0.64)	D (0.90)	-	D (0.96)	-	-			
Hoyt St @ Union St (Signalized)	-	D (0.95)	-	-	-	-	-	C (0.80)	-			
Smith St @ 3rd St (Signalized)	-	-	-	D (0.91)	-	-	C (0.76)	B (0.21)	-			
Smith St @ Luquer St (Unsignalized)	D (0.41)	-	-	-	-	-	-	-	-			
Smith St @ 9th St (Signalized)	-	-	-	B (0.67)	B (0.49)	C (0.84)	C (0.74)	-	-			

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

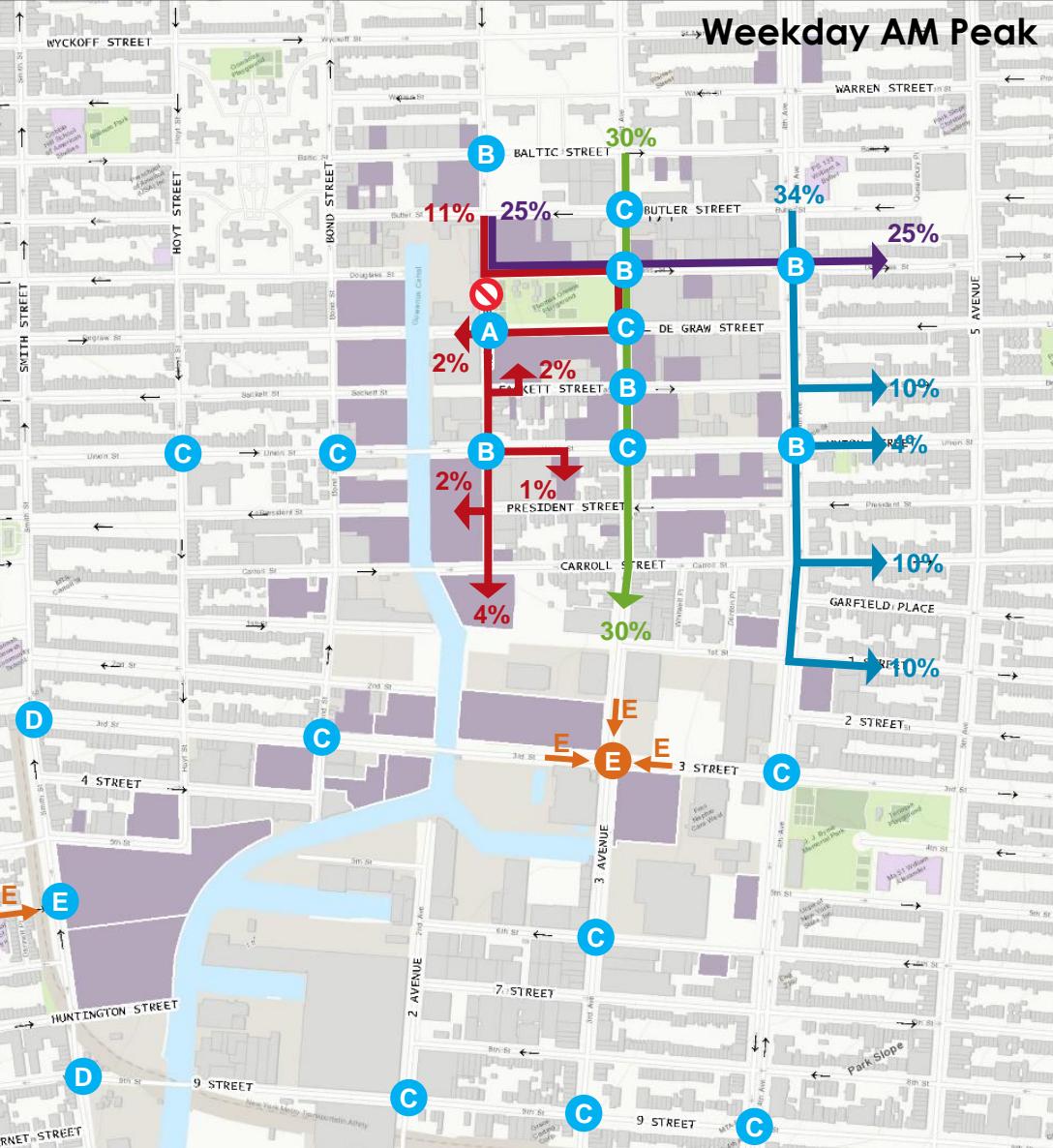


Nevins Closure (Mixed Scenario) – Traffic Volume



Nevins Closure (Mixed Scenario) – AM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound						
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right				
4th Ave @ Douglass St (Signalized)	C (0.24)			-			B (0.77)			C (0.36)	B (0.51)	-				
4th Ave @ Union St (Signalized)	D (0.66)			D (0.52)			A (0.62)			B (0.24)	B (0.40)	-				
4th Ave @ 3rd St (Signalized)	D (0.83)			-			C (0.71)	B (0.74)		-	D (0.89)	-				
4th Ave @ 9th St (Signalized)	E (0.62)	D (0.44)	C (0.10)	D (0.32)	E (0.84)	D (0.39)	C (0.22)	B (0.81)		-	C (0.67)	-				
3rd Ave @ Butler St (Signalized)	-			C (0.29)			B (0.43)			-	C (0.63)	-				
3rd Ave @ Douglass St (Signalized)	C (0.13)		C (0.05)	-			B (0.43)			C (0.59)	-	-				
3rd Ave @ Degraw St (Signalized)	-			D (0.60)			B (0.32)			-	C (0.55)	-				
3rd Ave @ Sackett St (Signalized)	C (0.26)			-			B (0.33)			C (0.58)	-	-				
3rd Ave @ Union St (Signalized)	D (0.81)			C (0.45)	C (0.10)		B (0.60)			C (0.52)	-	-				
3rd Ave @ 3rd St (Signalized)	-	E (0.89)		E (0.88)			F (1.10)	B (0.74)		C (0.16)	E (0.96)	-				
3rd Ave @ 6th St (Signalized)	-			D (0.77)			B (0.60)			-	C (0.66)	-				
3rd Ave @ 9th St (Signalized)	D (0.31)	C (0.32)		C (0.17)	D (0.83)	C (0.12)	C (0.56)	B (0.60)		C (0.26)	C (0.71)	-				
Nevins St @ Baltic St (Unsignalized)	B (0.37)			-			-			B (0.37)						
Nevins St @ Degraw St (Unsignalized)	A (0.00)			A (0.15)			-			-						
Nevins St @ Union St (Signalized)	-	B (0.66)		-			-			B (0.18)	B (0.09)	-				
2nd Ave @ 9th St (Signalized)	B (0.24)	B (0.34)		B (0.12)	D (0.97)		B (0.38)			B (0.29)						
Bond St @ Union St (Signalized)	C (0.78)		-	-			-			B (0.72)	B (0.40)	-				
Bond St @ 3rd St (Signalized)	B (0.61)		-	-		B (0.74)	D (0.95)	C (0.80)			-	-				
Hoyt St @ Union St (Signalized)	-	C (0.78)		-			-			B (0.60)						
Smith St @ 3rd St (Signalized)	-			-		D (0.96)	-		D (0.97)	B (0.35)		-				
Smith St @ Luquer St (Unsignalized)	E (0.62)			-			-			-						
Smith St @ 9th St (Signalized)	-	-		-	C (0.77)	F (1.08)	C (0.83)		C (0.67)	-						



soft Sites

Intersection Level of Service

congested Approach Level of Service

Assumed Future Traffic Flow

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

Nevins Closure (Mixed Scenario) – PM LOS

Intersection	Eastbound			Westbound			Northbound			Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4th Ave @ Douglass St (Signalized)	D* (0.64)**	C (0.27)	-	-	-	B (0.60)	B (0.30)	A (0.60)	-			
4th Ave @ Union St (Signalized)	D (0.89)	-	B (0.20)	-	-	D (0.98)	E (0.67)	D (0.99)	-			
4th Ave @ 3rd St (Signalized)	E (0.94)	-	-	D (0.70)	B (0.69)	-	-	E (1.08)	-			
4th Ave @ 9th St (Signalized)	D (0.58)	D (0.61)	D (0.32)	E (0.71)	D (0.68)	D (0.38)	C (0.20)	C (0.77)	-	C (0.87)	-	
3rd Ave @ Butler St (Signalized)	-	-	D (0.69)	B (0.64)	-	-	-	-	A (0.67)	-		
3rd Ave @ Douglass St (Signalized)	D (0.62)	D (0.21)	-	-	-	B (0.60)	A (0.61)	-	-			
3rd Ave @ Degraw St (Signalized)	-	-	D (0.47)	B (0.58)	-	-	-	-	A (0.60)	-		
3rd Ave @ Sackett St (Signalized)	C (0.12)	-	-	-	-	B (0.59)	A (0.69)	-	-			
3rd Ave @ Union St (Signalized)	C (0.78)	-	B (0.25)	B (0.06)	-	D (0.91)	D (0.88)	-	-			
3rd Ave @ 3rd St (Signalized)	-	E (0.97)	D (0.68)	F (1.08)	D (0.92)	C (0.24)	E (1.00)	-	-			
3rd Ave @ 6th St (Signalized)	-	-	D (0.69)	B (0.46)	-	-	-	-	C (0.90)	-		
3rd Ave @ 9th St (Signalized)	D (0.39)	D (0.65)	D (0.31)	E (0.80)	C (0.08)	B (0.27)	B (0.46)	C (0.41)	B (0.63)	-		
Nevins St @ Baltic St (Unsignalized)	B (0.55)	-	-	-	-	-	C (0.70)	-	-			
Nevins St @ Degraw St (Unsignalized)	A (0.01)	-	A (0.09)	-	-	-	-	-	-			
Nevins St @ Union St (Signalized)	-	C (0.94)	-	-	-	-	B (0.10)	B (0.05)	-			
2nd Ave @ 9th St (Signalized)	B (0.12)	B (0.43)	B (0.07)	B (0.69)	-	B (0.33)	-	B (0.38)	-			
Bond St @ Union St (Signalized)	E (0.97)	-	-	-	-	C (0.86)	B (0.44)	-	-			
Bond St @ 3rd St (Signalized)	E (0.98)	-	-	B (0.64)	D (0.90)	D (0.96)	-	-	-			
Hoyt St @ Union St (Signalized)	-	D (0.95)	-	-	-	-	C (0.80)	-	-			
Smith St @ 3rd St (Signalized)	-	-	-	D (0.91)	-	C (0.76)	B (0.21)	-	-			
Smith St @ Luquer St (Unsignalized)	D (0.41)	-	-	-	-	-	-	-	-			
Smith St @ 9th St (Signalized)	-	-	-	B (0.67)	B (0.49)	C (0.84)	C (0.74)	-	-			

* Lane Group Level of Service (Signalized) / Total Lane Level of Service (Unsignalized)

** Lane Group v/c Ratio (Signalized) / Degree of Utilization (Unsignalized)

