



# CLINTON AVENUE

## SAFETY AND MOBILITY IMPROVEMENTS

New York City Department of Transportation

Presented by the Bicycle and Greenway Program on May 17, 2016 to Community Board 2 T&PS Committee



## PRESENTATION OVERVIEW

### (1) Neighborhood Transportation Issues

- Bike Network
- Vehicular Network

### (2) Clinton Avenue

- Pedestrian Environment
- Safety
- Opportunities

### (3) Proposal

- One-way Conversion
- Protected Bike Lanes
- Intersection Safety Improvements
- Loading Zones
- Bike Connection to Vanderbilt Ave
- Potential New Crossings at Atlantic Ave

### (4) Summary

#### Project Goals:

Create **family-friendly** north-south protected bike route as **alternative to Vanderbilt Ave** shared lanes to accommodate growing number of cyclists

Establish Clinton Ave as a street that serves the **safety and mobility needs of all roadway users**



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**NEIGHBORHOOD  
TRANSPORTATION  
OVERVIEW**

**1**

## PROJECT AREA

*Fort Greene / Clinton Hill neighborhood has many local destinations: schools, colleges, churches, and commercial districts*

### Project Extents:

- **Clinton Ave:** Flushing Ave to Gates Ave
- **Gates Ave:** Clinton Ave to Vanderbilt Ave

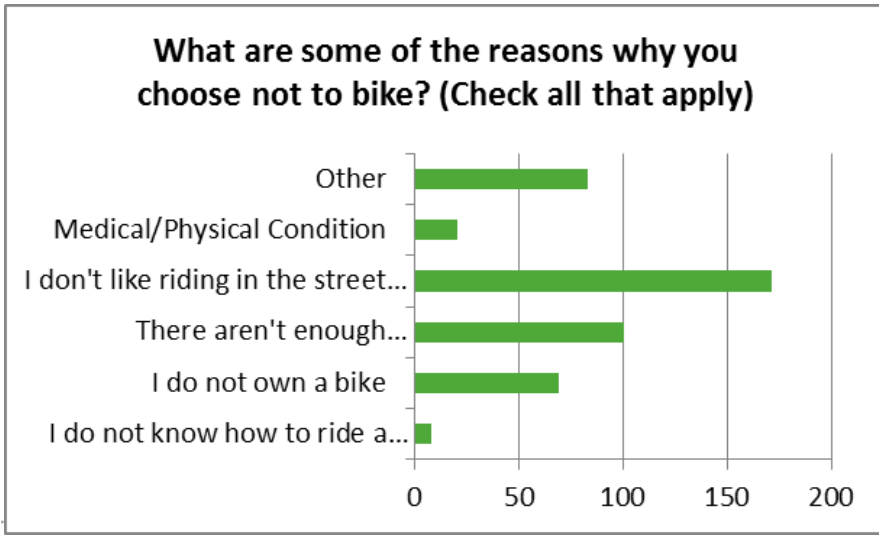
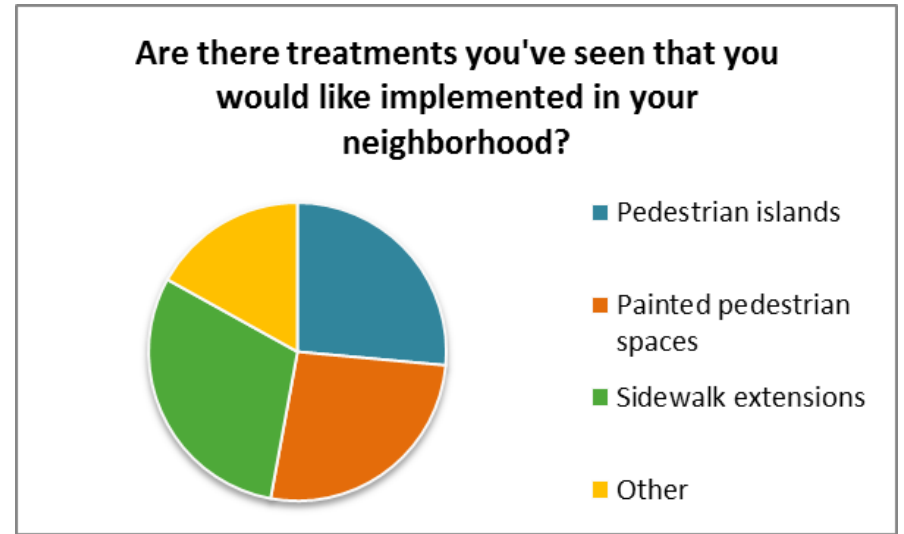
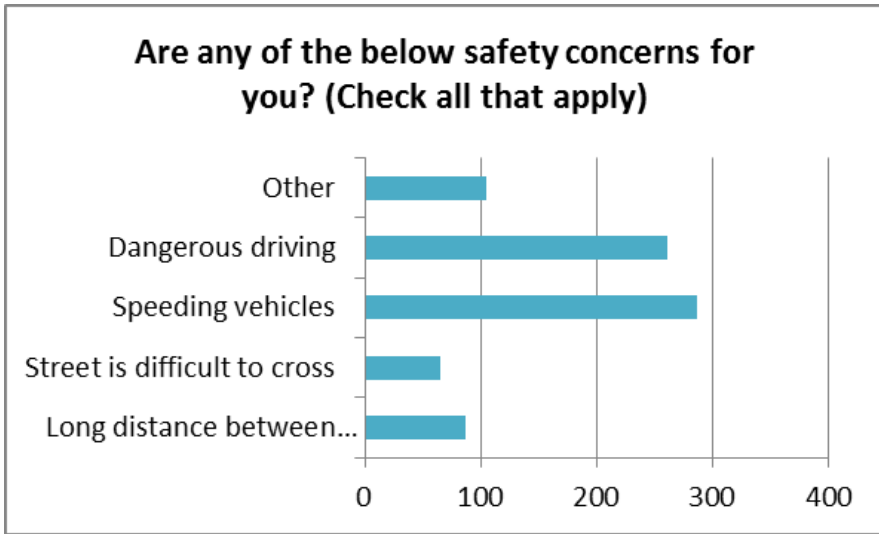


## COMMUNITY OUTREACH

- **Engaged over 1,000 people at 16 outreach events** conducted at 12 locations near project site between **April 12 and April 27**
- **Surveyed 430+ people**  
80% pedestrians, 20% cyclists
- **Distributed 1,446 informational cards**
- **Received more than 1,096 responses to on-line surveys**  
(Compiled April 7 to May 17 for presentation)
- Held stakeholder meetings with
  - St Joseph's College
  - Pratt Institute
  - Brooklyn Navy Yard
  - Fort Greene Association / Society for Clinton Hill
  - Elected Officials
  - FDNY



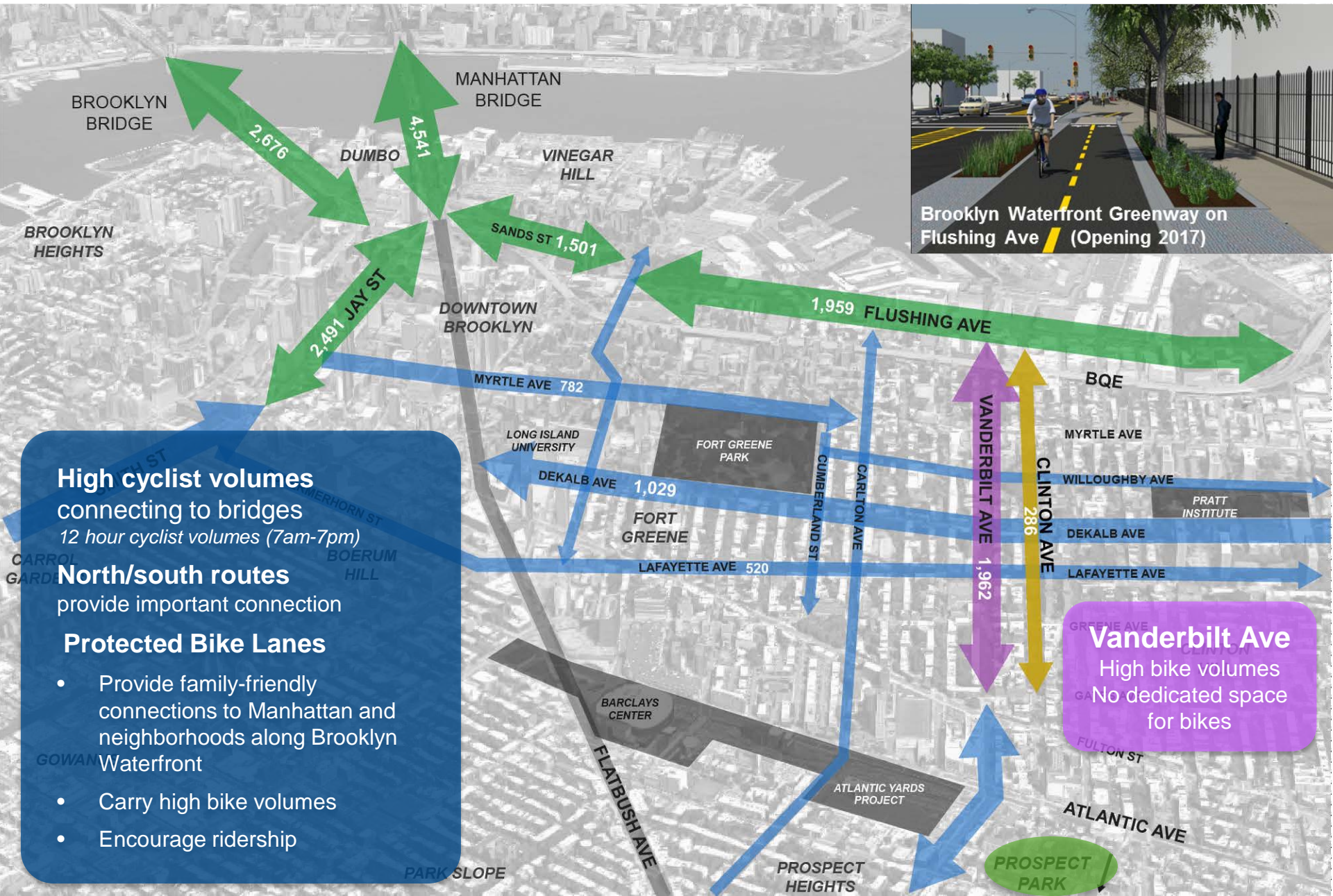
# COMMUNITY OUTREACH - Survey



**1,528 Survey Responses**

- In person: 432**  
(Events held between 04/12 – 04/27)
  - Pedestrians – 347**
  - Cyclists - 85**
- Online Portal: 1,096**  
(Online Portal open between 04/07 – 05/17)
  - Pedestrians – 503**
  - Cyclists - 503**

## BICYCLE NETWORK



**High cyclist volumes connecting to bridges**  
12 hour cyclist volumes (7am-7pm)

**North/south routes**  
provide important connection

**Protected Bike Lanes**

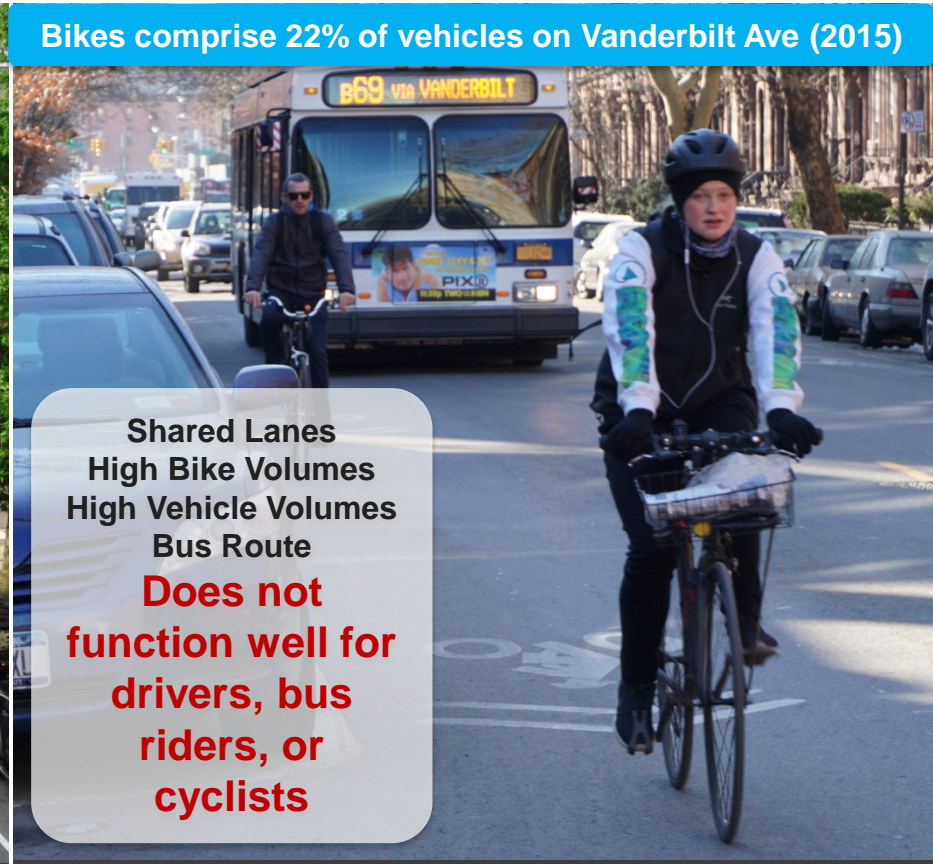
- Provide family-friendly connections to Manhattan and neighborhoods along Brooklyn Waterfront
- Carry high bike volumes
- Encourage ridership

**Vanderbilt Ave**  
High bike volumes  
No dedicated space for bikes

# BICYCLE NETWORK – Existing Conditions on Vanderbilt Ave



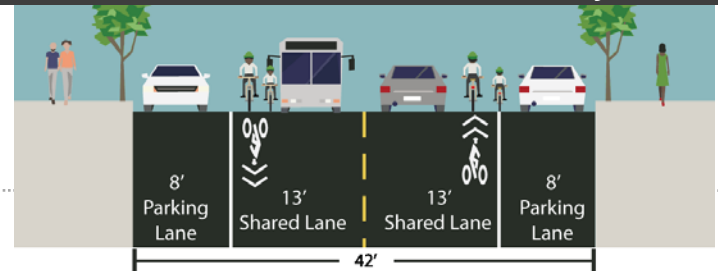
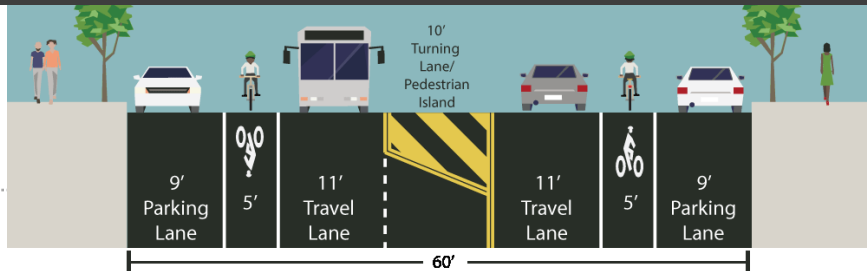
**South of Atlantic Avenue**  
*Dedicated Lanes*



Bikes comprise 22% of vehicles on Vanderbilt Ave (2015)

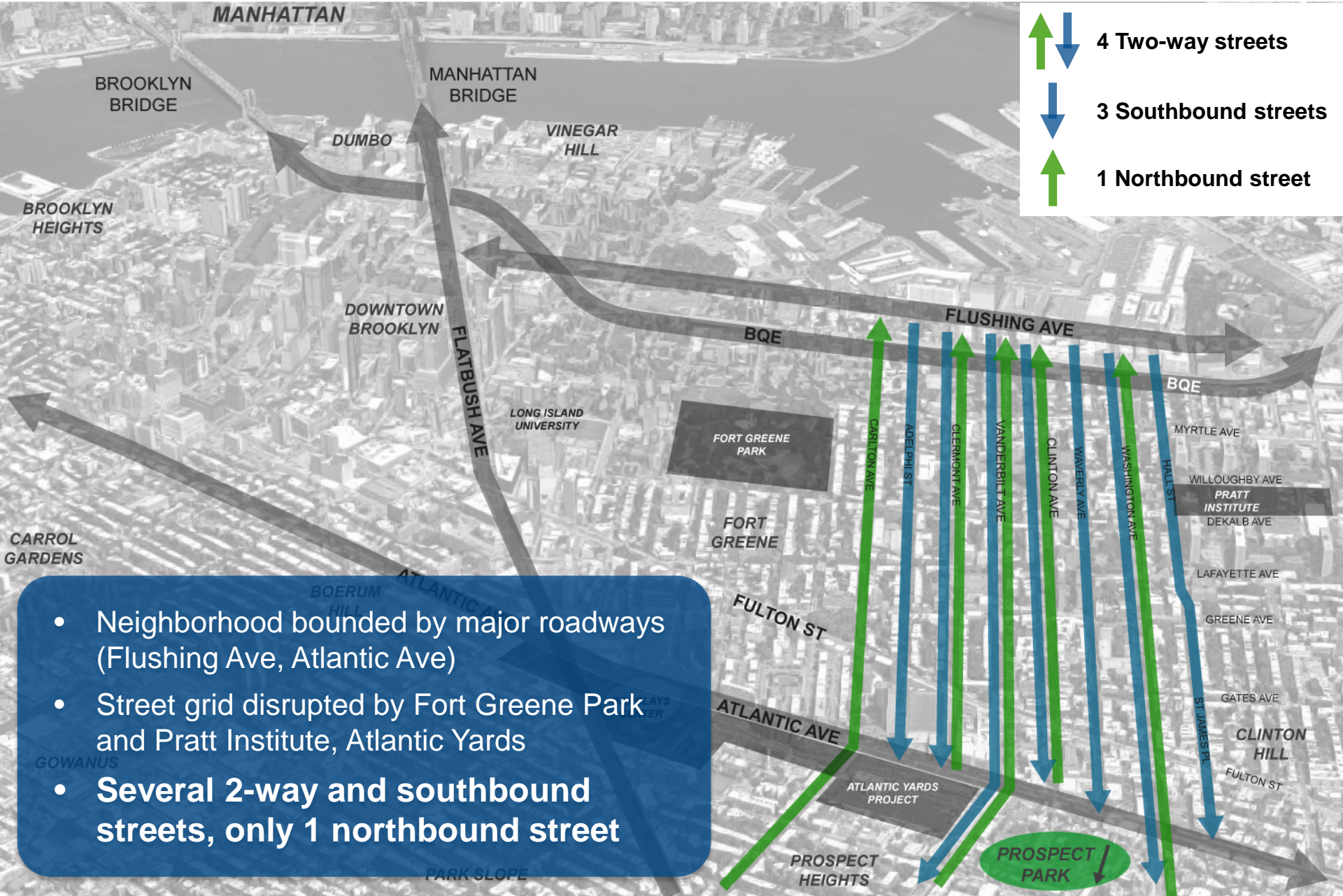
Shared Lanes  
High Bike Volumes  
High Vehicle Volumes  
Bus Route  
**Does not function well for drivers, bus riders, or cyclists**

**North of Gates Avenue**  
*Bike/Vehicles Share Roadway*





# VEHICULAR NETWORK – North/South Routes



- Neighborhood bounded by major roadways (Flushing Ave, Atlantic Ave)
- Street grid disrupted by Fort Greene Park and Pratt Institute, Atlantic Yards
- **Several 2-way and southbound streets, only 1 northbound street**

# STREET SPACE ALLOCATION

Carlton Ave

Adelphi St

Clermont Ave

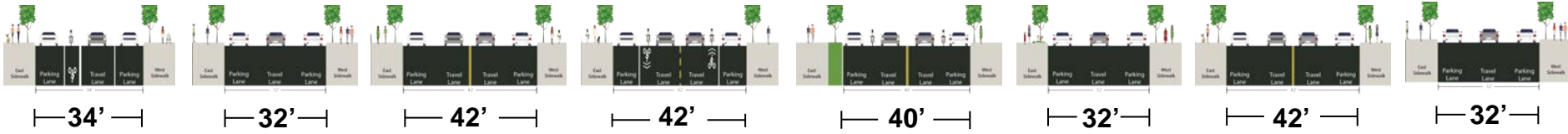
Vanderbilt Ave

Clinton Ave

Waverly Ave

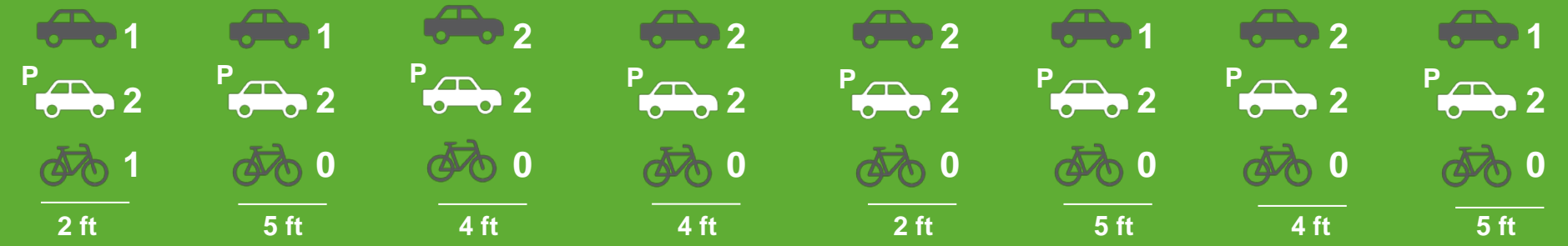
Washington Ave

St James Pl



## Number of Lanes Dedicated to Driving, Parking, and Cycling

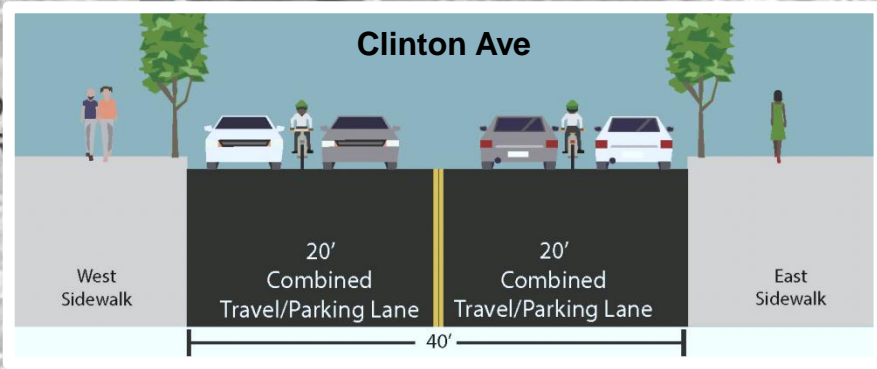
Street width remaining after accounting for existing uses



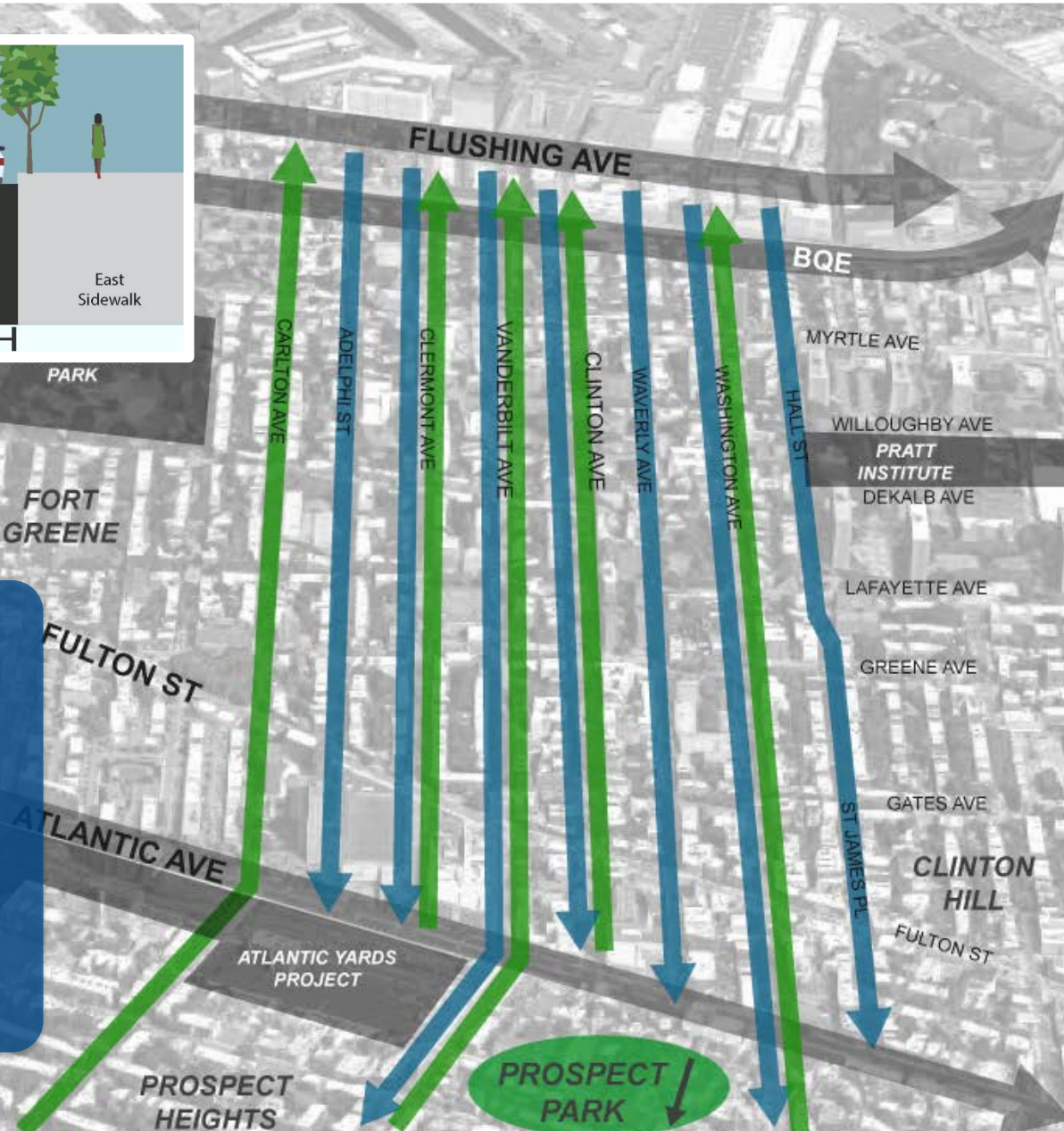
**There is no space to install protected north-south bike lanes in neighborhood without removing travel lane or parking lane**

- One-way protected bike lane typically requires 8-9 feet
- Two-way protected bike lane typically requires 10-12 feet

# VEHICULAR NETWORK – Clinton Ave



- **Does not go through** past Atlantic Ave
- **Relatively low volumes**
- **Close to bike lanes** on Vanderbilt Ave
- **Sufficient width** to accommodate redesign



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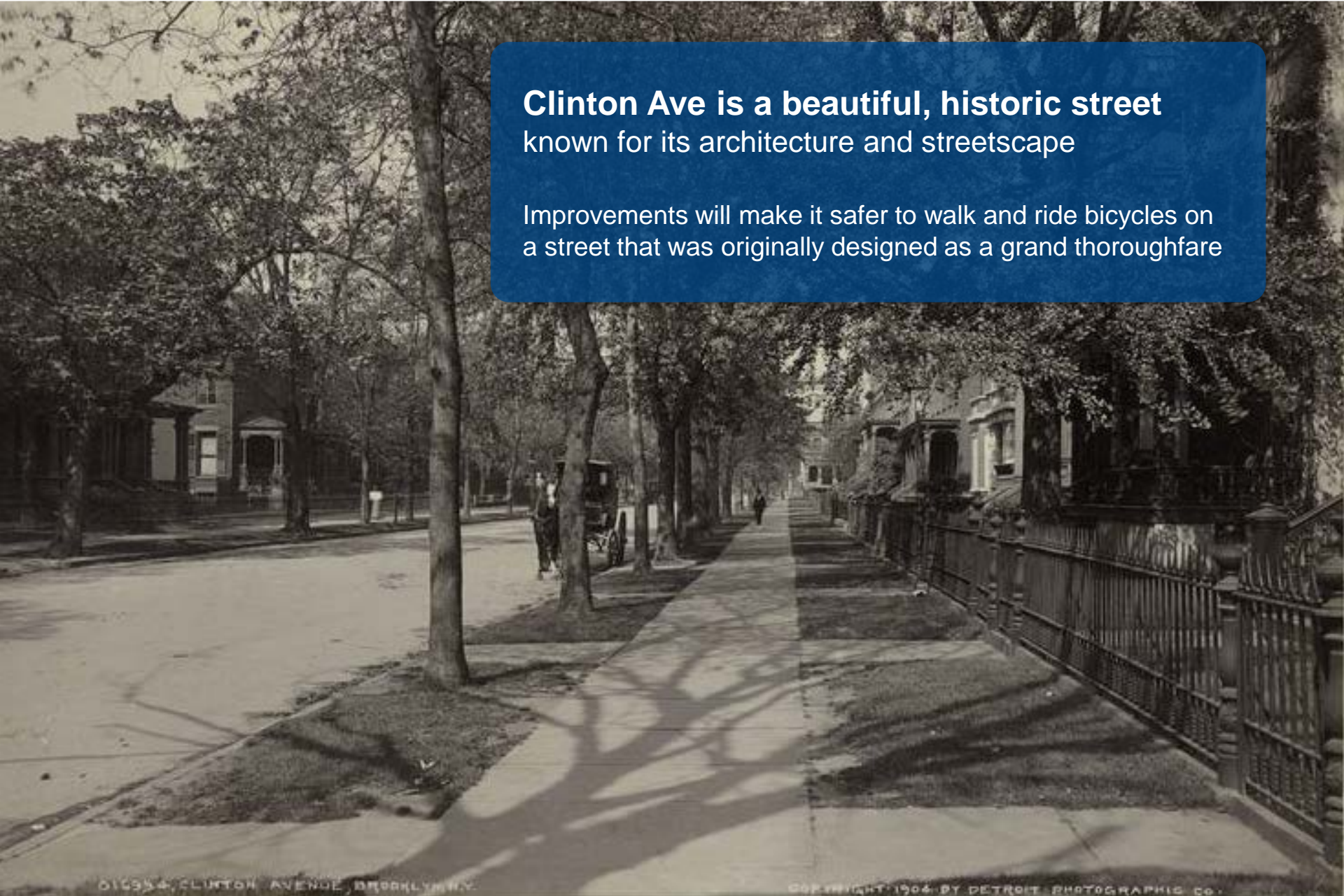
CLINTON AVE  
CONTEXT

2

## PEDESTRIAN ENVIRONMENT – Historic Setting

**Clinton Ave is a beautiful, historic street**  
known for its architecture and streetscape

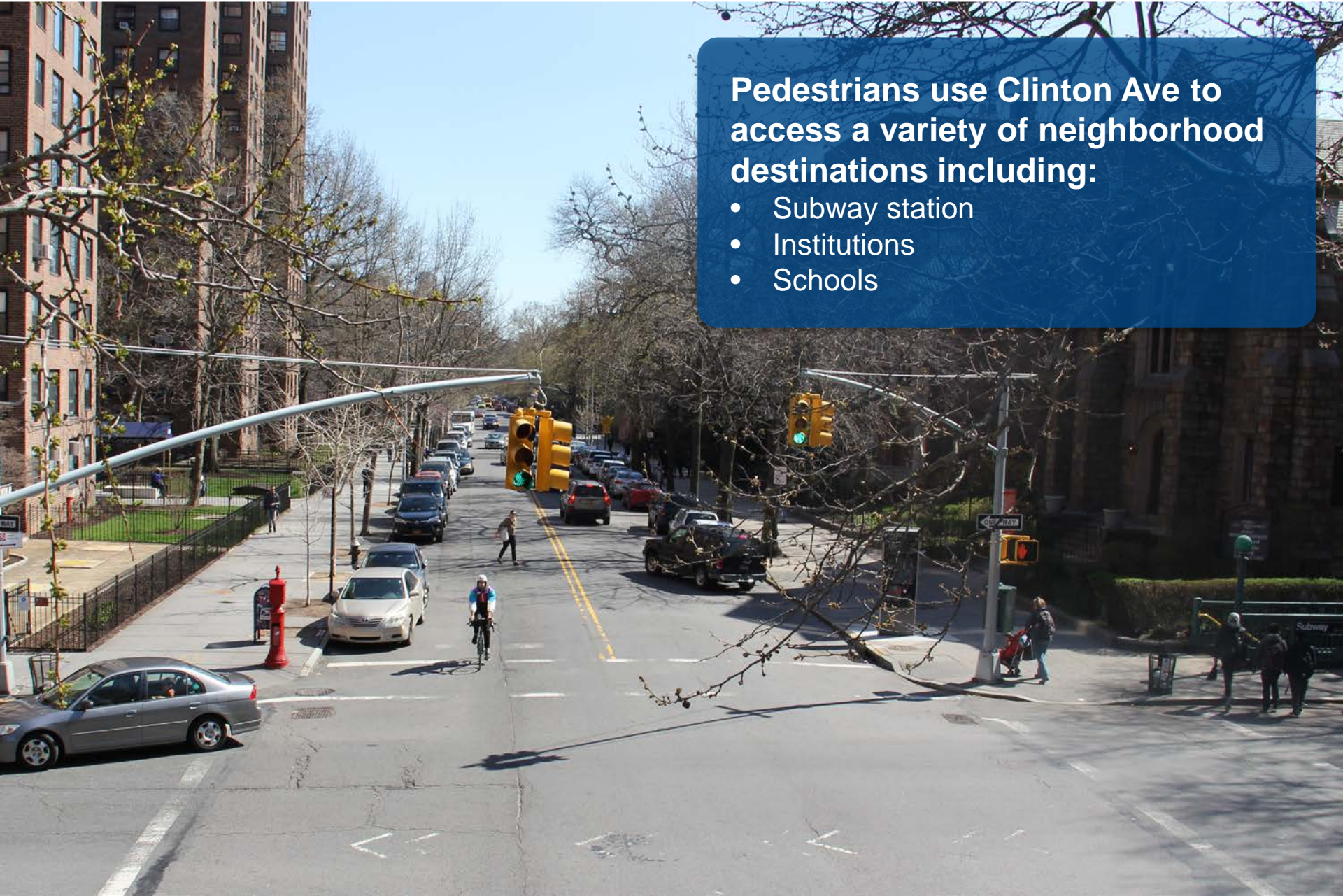
Improvements will make it safer to walk and ride bicycles on  
a street that was originally designed as a grand thoroughfare



## PEDESTRIAN ENVIRONMENT – Neighborhood Destinations

**Pedestrians use Clinton Ave to access a variety of neighborhood destinations including:**

- Subway station
- Institutions
- Schools



## SAFETY – Issues on Clinton Ave

- Relatively low volumes and excess width lead to **speeding and erratic driving**  
**24% of off-peak northbound vehicles were speeding**
- Lack of dedicated bike space encourages **riding on sidewalk and wrong-way riding**
- Wide street **creates long pedestrian crossings**

**2 cyclists and 3 Motor Vehicle Occupants severely injured**  
in the project area 2010-2014



# SAFETY – Neighborhood Bike Safety



## Vanderbilt Ave

- Main north/south bike route in neighborhood
- 1,900+ cyclists counted in 12 hour day

**11 cyclists severely injured**  
Vanderbilt Ave, 2010-2014



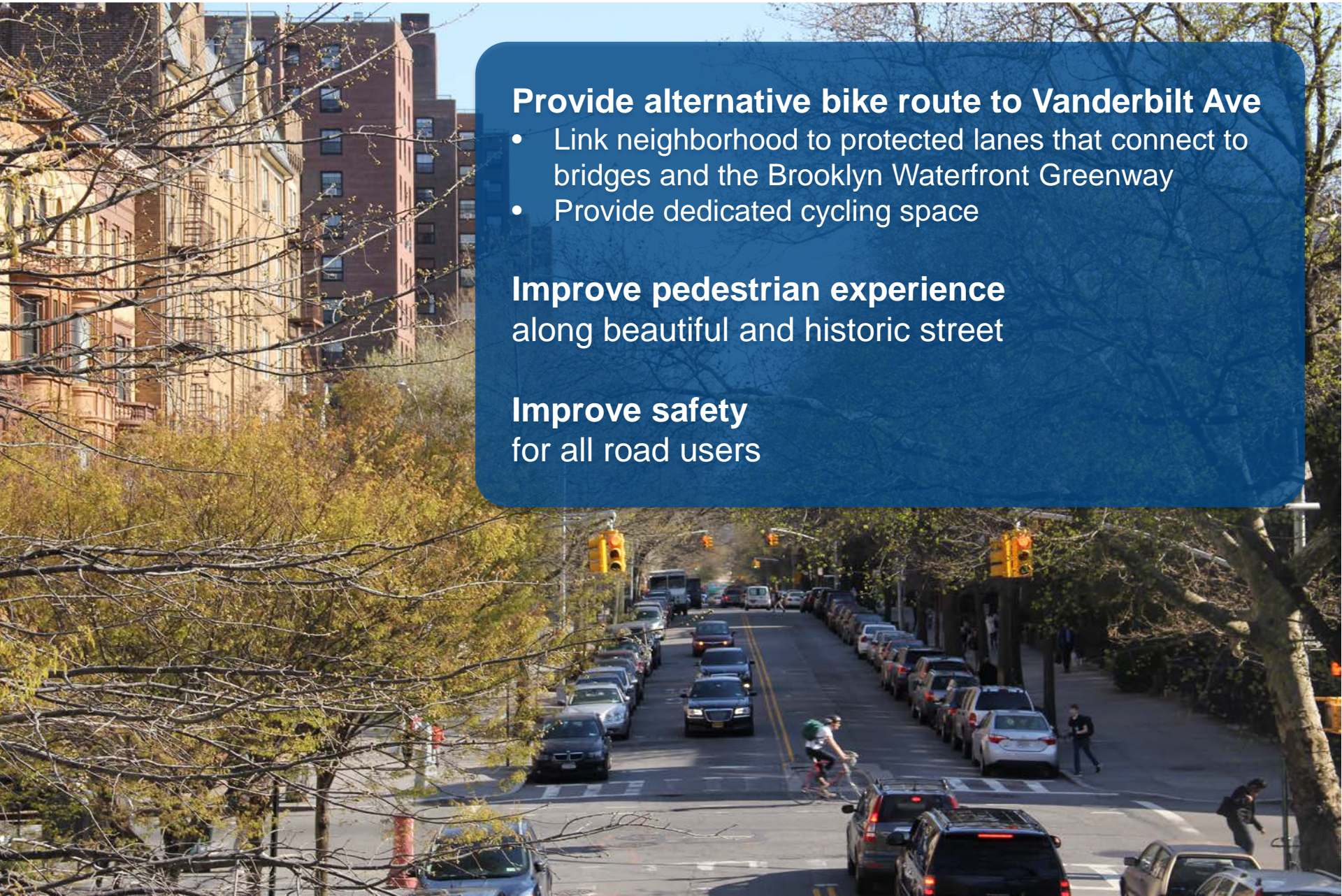
## OPPORTUNITIES FOR TRANSPORTATION IMPROVEMENTS

### **Provide alternative bike route to Vanderbilt Ave**

- Link neighborhood to protected lanes that connect to bridges and the Brooklyn Waterfront Greenway
- Provide dedicated cycling space

**Improve pedestrian experience**  
along beautiful and historic street

**Improve safety**  
for all road users



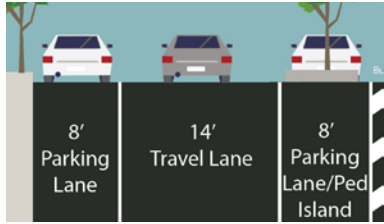
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PROPOSED  
IMPROVEMENTS

3

# PROPOSAL OVERVIEW

 (1) One-way Conversion



(4) Loading Zones



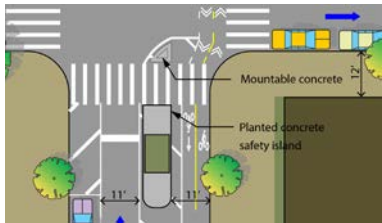
 (2) Two-way Protected Bike Lane



 (5) Bike Connection to Vanderbilt Ave



 (3) Intersection Safety Improvements



 (6) Potential Crossings at Atlantic Ave

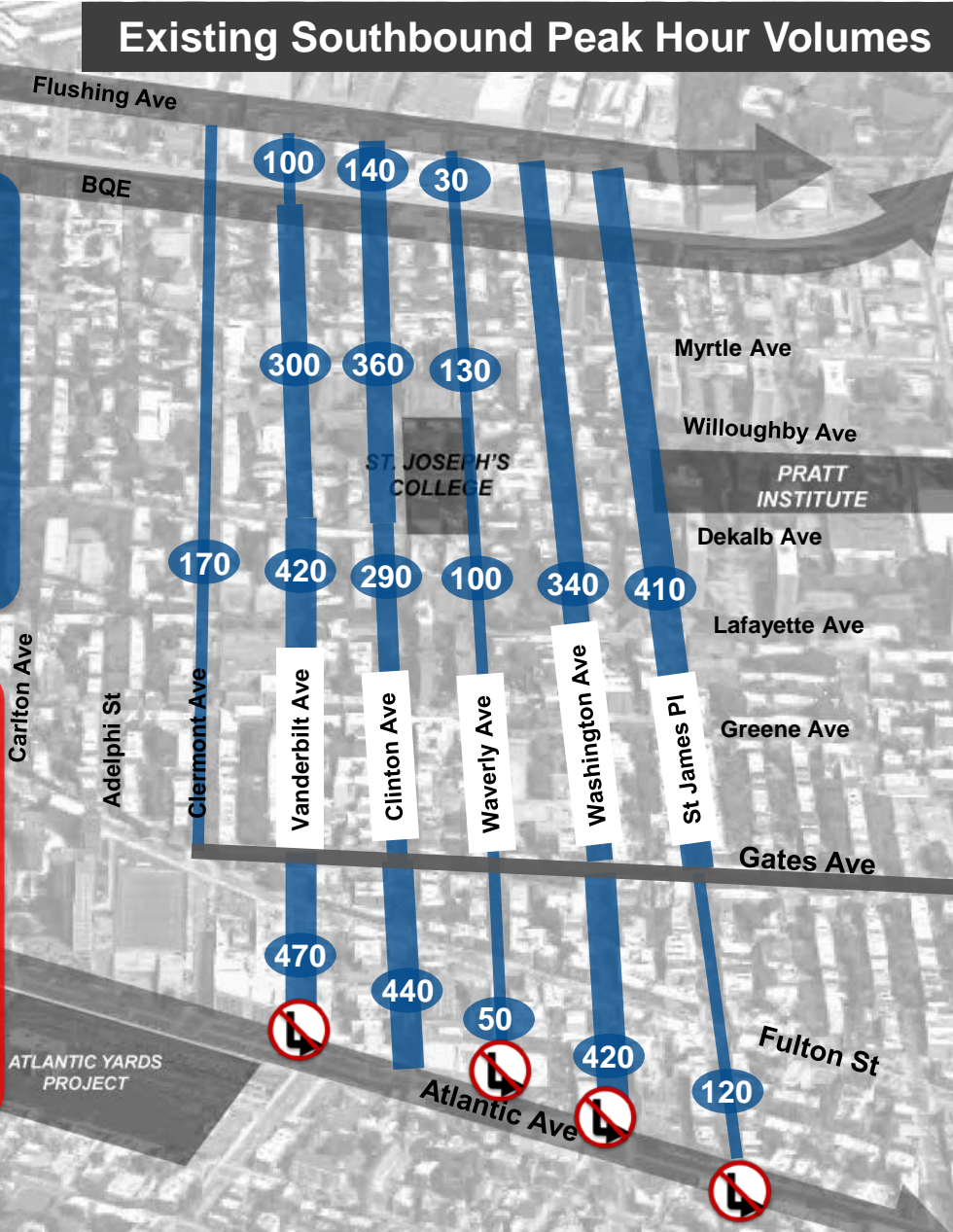


# (1) ONE-WAY CONVERSION – Existing Traffic Distribution

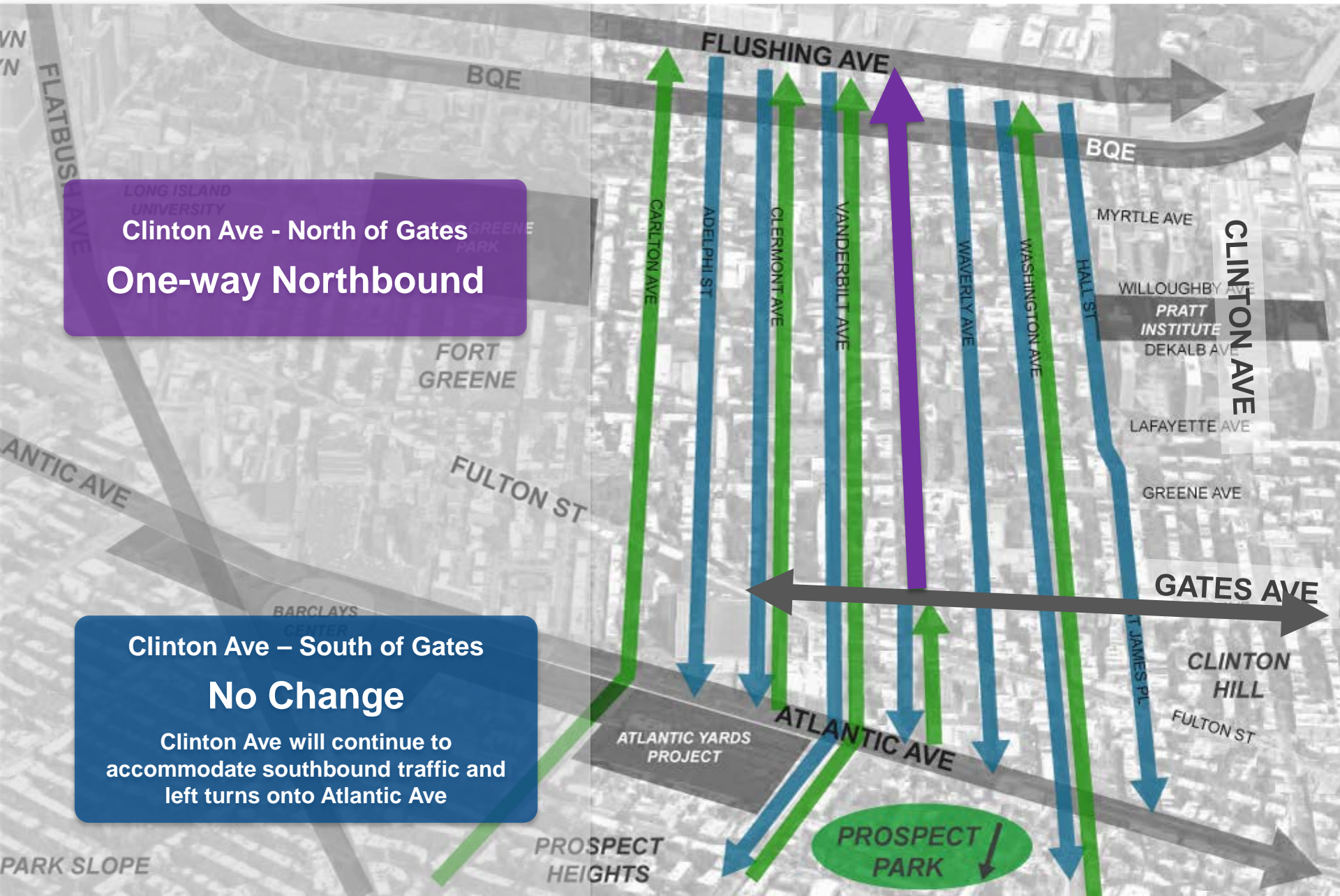
## Existing Southbound Peak Hour Volumes

**North of Gates Ave**  
Southbound traffic is lighter and evenly distributed  
*Vanderbilt, Clinton, Washington aves and St James Pl have similar peak hour volumes (300-400 vehicles)*

**South of Gates Ave**  
Southbound traffic is heavier approaching Atlantic Ave  
*Clinton Ave peak hour volume increases to 444 vehicles*  
*88% of vehicles on Clinton Ave turn left on Atlantic Ave*



# (1) ONE-WAY CONVERSION – Proposed Street Network



**Clinton Ave - North of Gates**  
**One-way Northbound**

**Clinton Ave - South of Gates**  
**No Change**  
Clinton Ave will continue to accommodate southbound traffic and left turns onto Atlantic Ave

# (1) ONE-WAY CONVERSION – Potential Traffic Distribution Scenarios

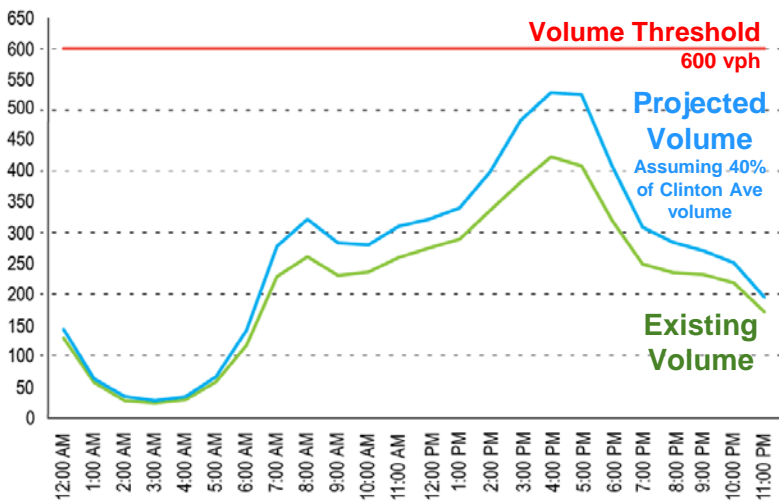
CLINTON AVE

Southbound Streets  
WEST OF CLINTON AVE

Adelphi St

Clermont Ave

Vanderbilt Ave



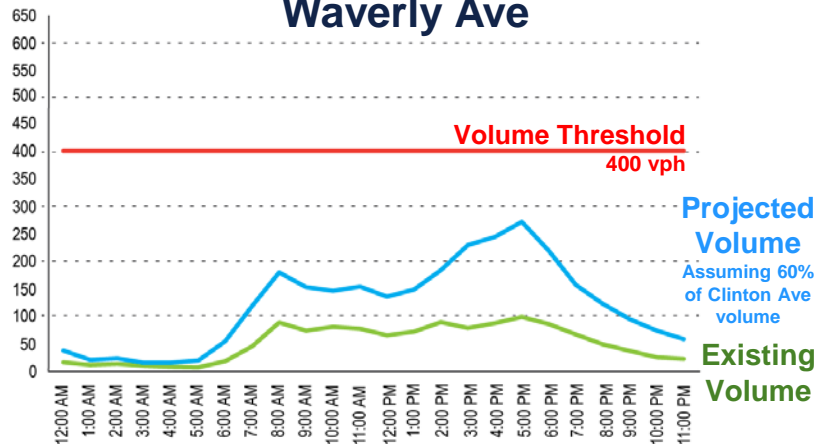
Multiple alternative southbound streets

Maximum Expected Volume Diversion on proximate southbound streets

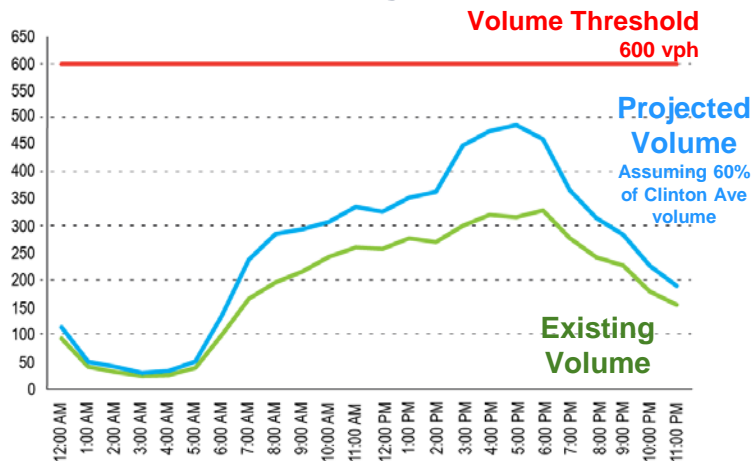
West of Clinton Ave – 40%  
East of Clinton Ave 60%

Southbound Streets  
EAST OF CLINTON AVE

Waverly Ave



Washington Ave

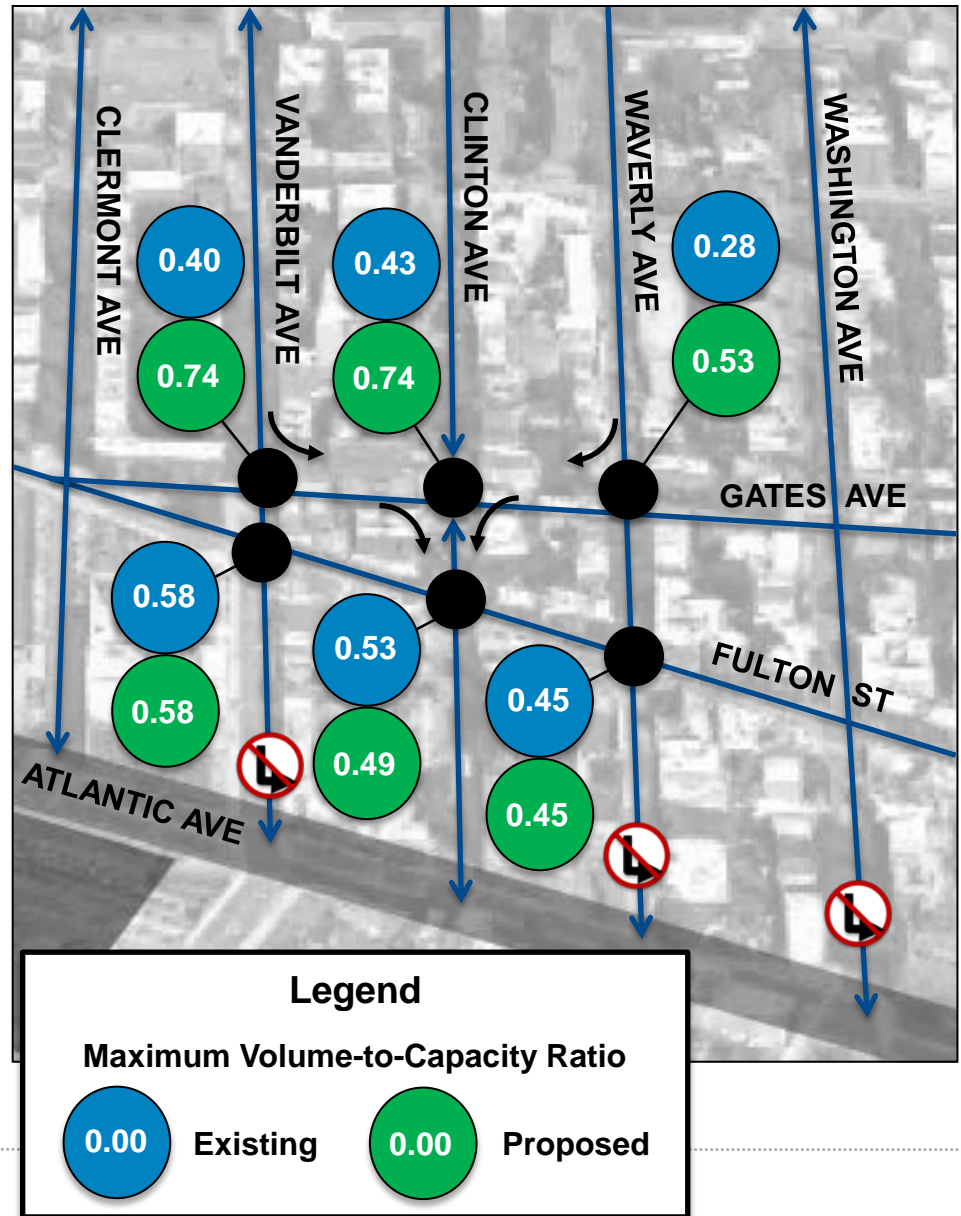


Hall St/St James Pl

# (1) ONE-WAY CONVERSION – Traffic Analysis

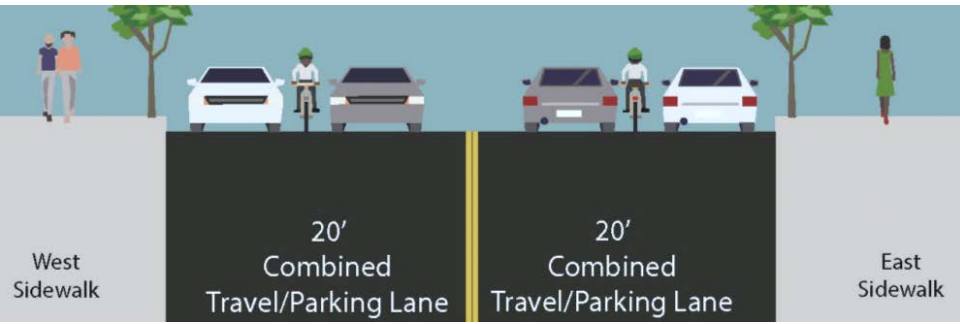
## South of Gates Ave

- Southbound vehicles will likely use Gates Ave to return to Clinton Ave and head east on Atlantic Ave
- **Intersection analysis** shows that additional vehicle volumes can be processed
- **Signal timing change** at Gates Ave can accommodate increase in vehicles turning onto Clinton Ave



## (2) TWO-WAY PROTECTED BIKE LANE

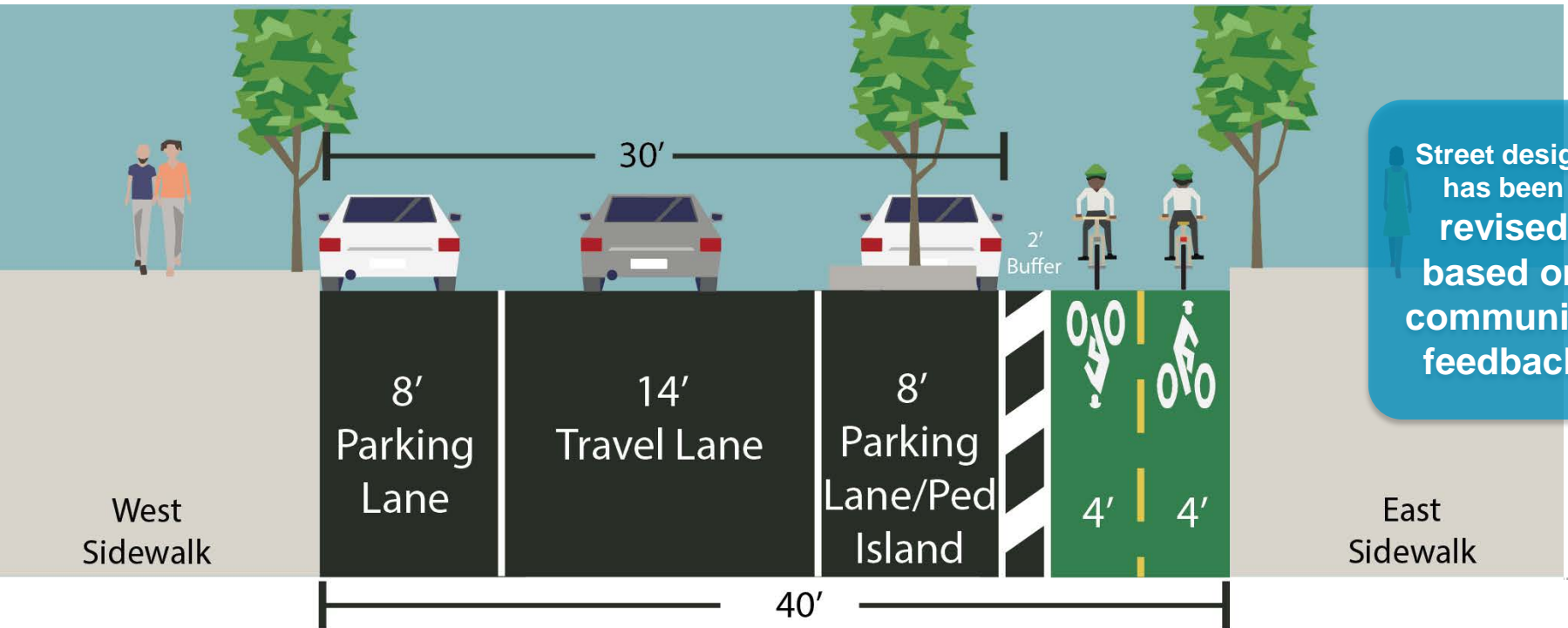
### Existing



### Protected Bike Lane

- Separates bikes from vehicular traffic
- Accommodates high cyclist volumes
- Provides family-friendly connection to Brooklyn Waterfront Greenway and bridges to Manhattan

### Proposed



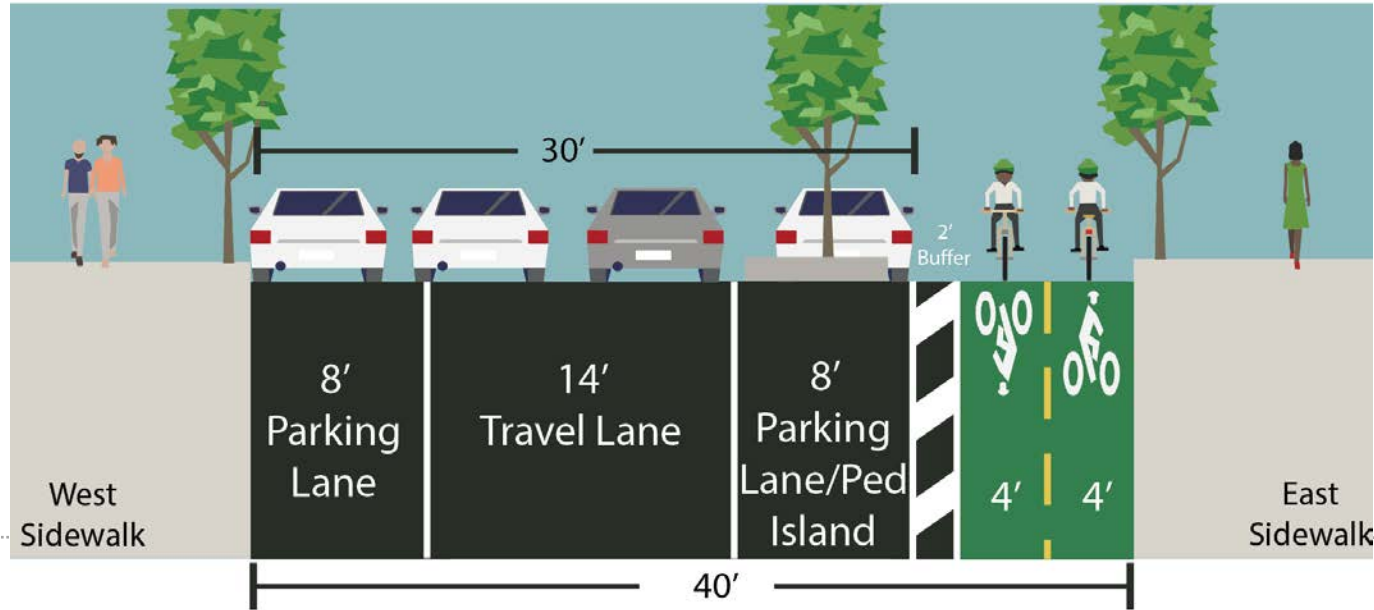
Street design has been revised based on community feedback



## (2) TWO-WAY PROTECTED BIKE LANE – Street Width Functionality



30 feet is a standard NYC street width that allows through movements and some loading/unloading



### (3) LOADING ZONES

Loading zones can be added to improve curb access at select locations including:

- Saint Joseph's College  
*already requested*
- Entrances at Clinton Hill Co-Ops
- Self Storage
- Access-a-Ride Drop-off/Pick-up Locations



**Unloading from a moving lane is not ideal**  
***Access-a-Ride customers must pass through parked cars***

## (4) INTERSECTION SAFETY IMPROVEMENTS

### 1 One-way Conversion

- Reduces the number of conflicts between vehicles, pedestrians, and cyclists

### 2 Pedestrian Safety Islands

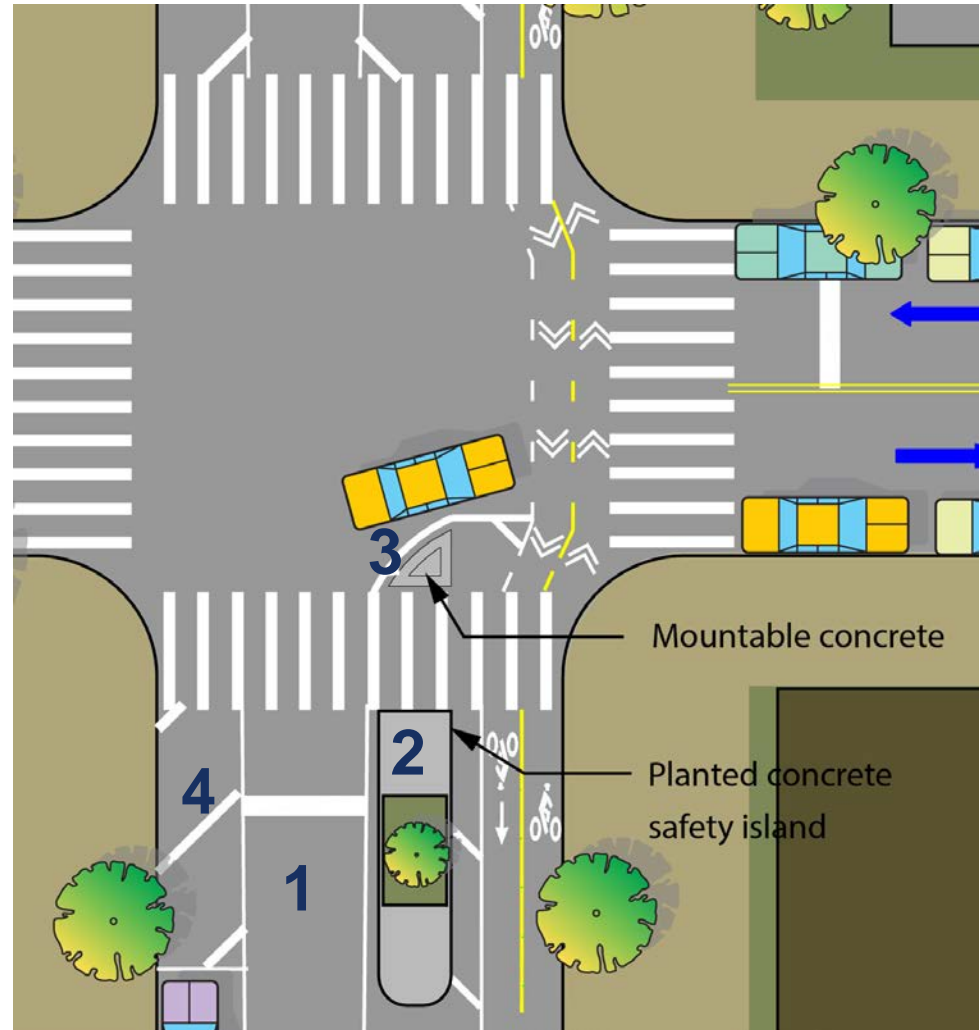
- Shorten crossing distance
- Provide planting opportunities

### 3 Mountable Concrete Safety Islands

- Reduce speed of turning vehicles while maintaining emergency vehicle access

### 4 Daylighting

- Improves visibility of pedestrians in crosswalks for turning vehicles



# PROPOSED DESIGN RENDERING FOR CLINTON AVE

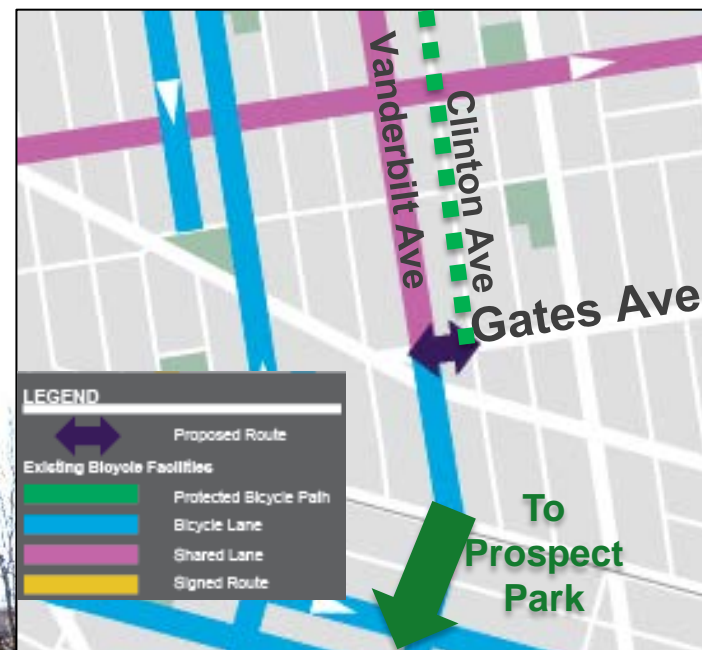
Clinton Ave will serve the safety and mobility needs of all roadway users



## (5) BIKE CONNECTION TO VANDERBILT AVE

### Gates Ave

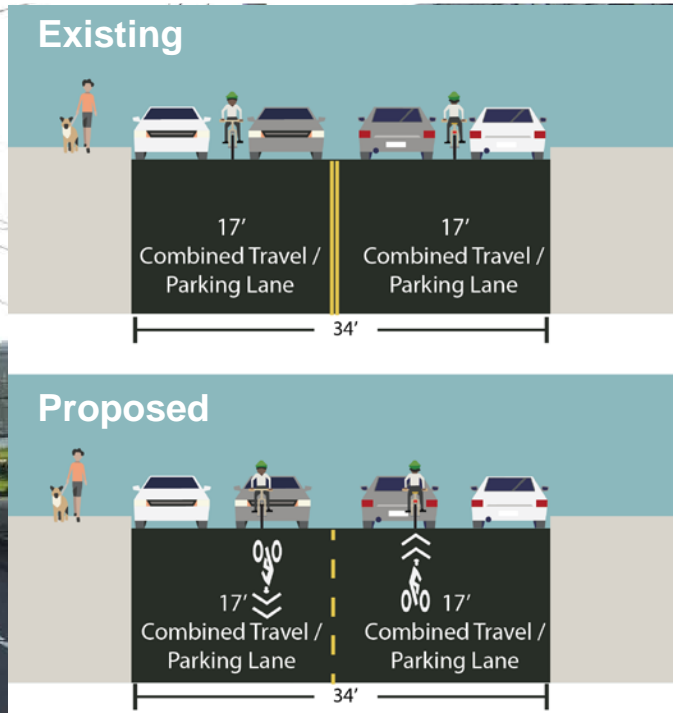
- Direct, short connection from Clinton Ave to Vanderbilt Ave bike lanes and Prospect Park
- Low volume street
- Bus route ends at Classon Ave



# (5) BIKE CONNECTION TO VANDERBILT AVE



- ### Shared Lanes
- Appropriate treatment for this location
  - No changes to moving lanes or parking



## (6) POTENTIAL NEW CROSSINGS AT ATLANTIC AVE



### **New signal and median redesign would enable left turns**

- Waverly Ave to Atlantic Ave
- St James Pl to Atlantic Ave

### **New crosswalk and pedestrian signal would create safe crossing**

at desire line between Clinton Hill and Prospect Heights

## PROJECT SUMMARY

### Clinton Ave – Gates Ave to Flushing Ave

- Conversion to one-way northbound
  - Traffic will divert to other southbound streets
  - No change south of Gates Ave
- Two-way protected bike lane
  - Alternative route to Vanderbilt Ave
  - Greater capacity for high cyclist volumes
  - Family-friendly connection to bridges and greenway
  - Reduced bicycle traffic on Vanderbilt Ave
- Intersection Safety Improvements
  - Fewer conflicts with one-way street
  - Pedestrian safety islands shorten crossings
  - Mountable safety islands slow turning vehicles
- Loading Zones
  - Improve curb access at select locations

### Gates Ave – Clinton Ave to Vanderbilt Ave

- Shared lanes establish one block connection

### Waverly Ave/St James Pl at Atlantic Ave

- Potential new signal and median changes
  - Enable left turns onto Atlantic Ave
  - Create safe pedestrian crossing between Clinton Hill and Prospect Heights





# THANK YOU!

## Questions?



NYC DOT



NYC DOT

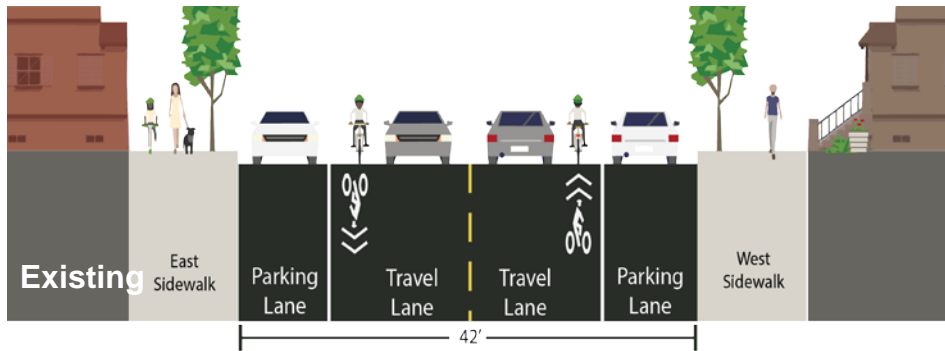


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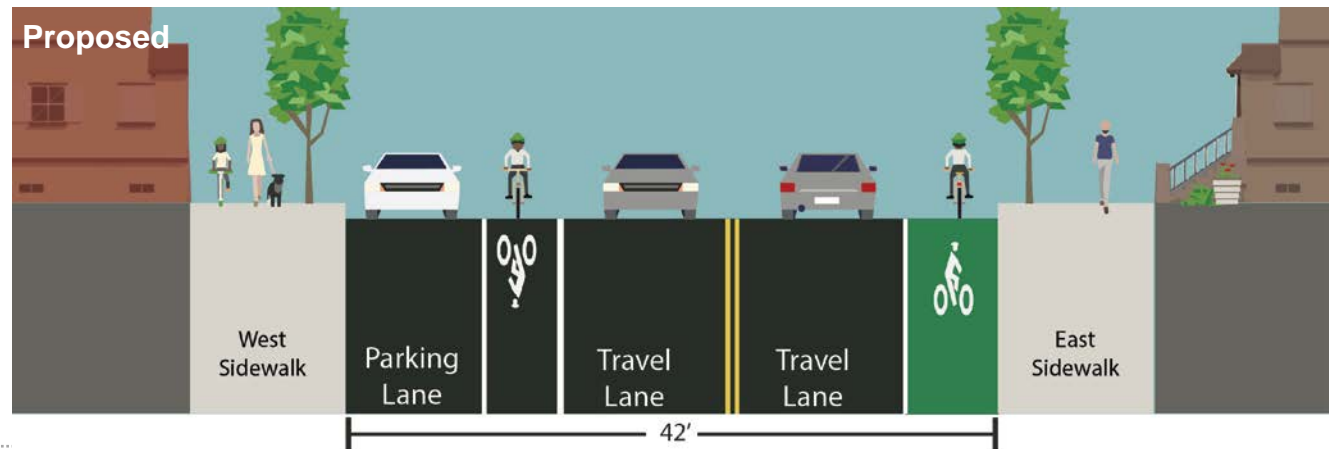
NYC DOT

# ALTERNATIVES – Vanderbilt

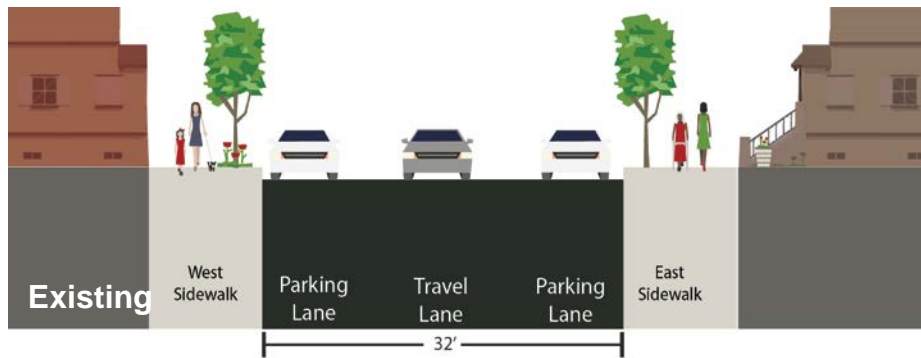


## Vanderbilt Ave

- Busses make a protected lane very difficult
- Any dedicated lane requires removal of all parking on one side

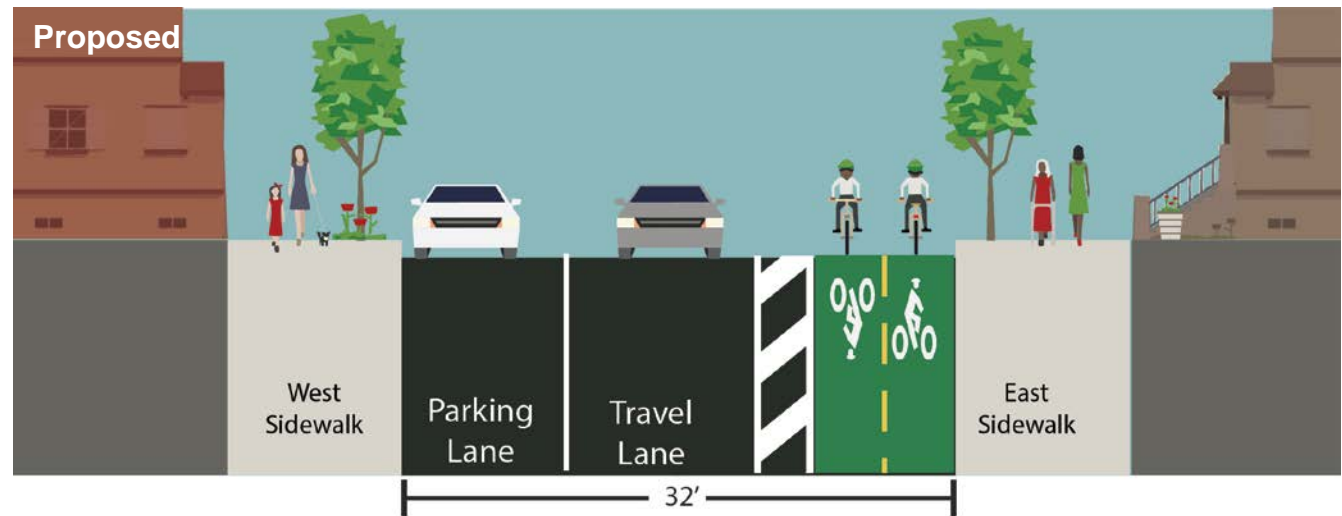


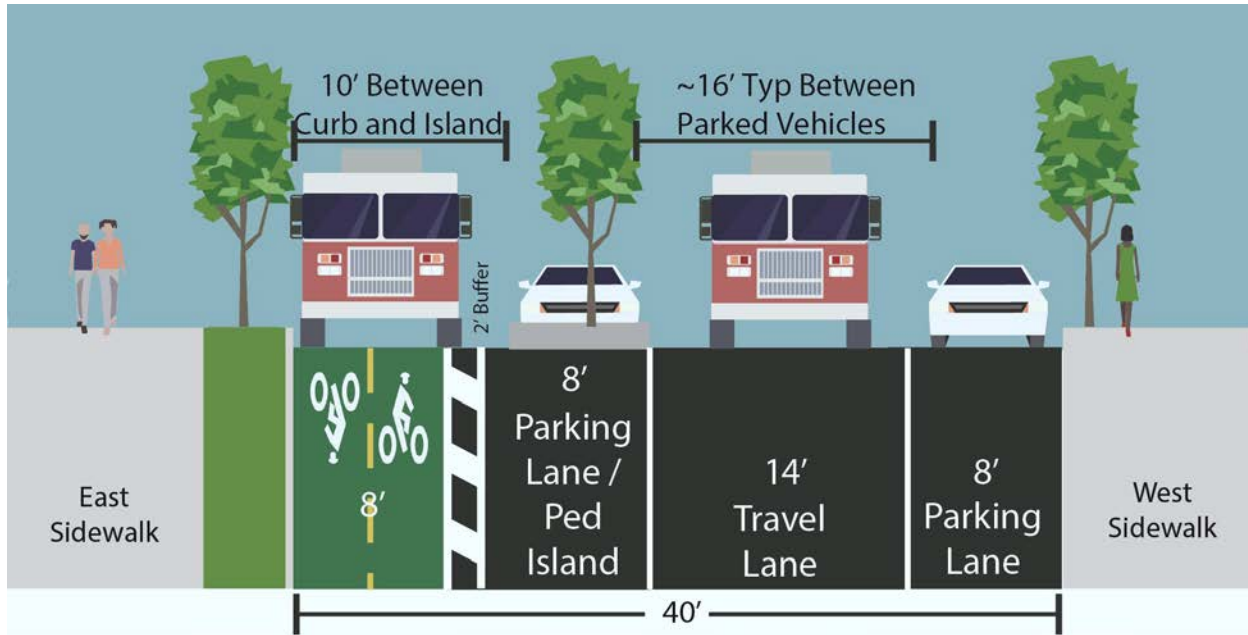
# ALTERNATIVES – Waverly



## Waverly Ave

- Protected lane is difficult given width
- Dedicated lanes in both directions require removal of parking





## All DOT Proposals are Reviewed by FDNY

- Emergency vehicle access is maintained or improved

# Traffic Data - Gates

Vanderbilt Ave at Gates Ave  
Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing									Proposed with no timing changes									Proposed with 90 sec cycle at Clinton/Gates								
	Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach		
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS			
WB Gates Ave	LTR-1	40/3/2	L = 0	0.16	15.7	B	15.7	B	LTR-1	40/3/2	L = 0	0.14	15.5	B	15.5	B	LTR-1	40/3/2	L = 0	0.14	31.6	C	31.6	C			
			T = 129								T = 114								T = 114								
			R = 0								R = 0								R = 0								
NB Vanderbilt Ave	LTR-1	40/3/2	L = 18	0.47	6.8	A	6.8	A	LTR-1	40/3/2	L = 18	0.47	6.8	A	6.8	A	LTR-1	40/3/2	L = 18	0.47	6.8	A	6.8	A			
			T = 247								T = 247								T = 247								
			R = 88								R = 88								R = 88								
SB Vanderbilt Ave	LTR-1	40/3/2	L = 3	0.40	18.8	B	18.8	B	LTR-1	40/3/2	L = 118	0.74	29.8	C	29.8	C	LTR-1	40/3/2	L = 118	0.74	29.8	C	29.8	C			
			T = 275								T = 296								T = 296								
			R = 35								R = 43								R = 43								
Overall Intersection	Delay: 13.0(s) LOS: B									Delay: 19.3(s) LOS: B									Delay: 21.2(s) LOS: C								

# Traffic Data - Gates

## Clinton Ave at Gates Ave

Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing									Proposed with no timing changes									Proposed with 90 sec cycle at Clinton/Gates								
	Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach		
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS			
EB Gates Ave	LTR-1	37/3/2	L = 9 T = 66 R = 16	0.17	31.5	C	31.5	C	TR-1	37/3/2	L = 0 T = 92 R = 114	0.40	44.1	D	44.1	D	LTR-1	40/3/2	L = 0 T = 92 R = 114	0.14	31.6	C	31.6	C			
WB Gates Ave	LTR-1	37/3/2	L = 38 T = 110 R = 65	0.43	51.6	D	51.6	D	LT-1	37/3/2	L = 195 T = 110 R = 65	1.11	278.0	F	278.0	F	LTR-1	40/3/2	L = 195 T = 110 R = 65	0.47	6.8	A	6.8	A			
NB Clinton Ave	LTR-1	73/3/2	L = 4 T = 57 R = 11	0.07	9.9	A	9.9	A	LTR-1	73/3/2	L = 4 T = 57 R = 11	0.07	9.8	A	9.8	A	LTR-1	40/3/2	L = 4 T = 57 R = 11	0.74	29.8	C	29.8	C			
SB Clinton Ave	LTR-1	73/3/2	L = 34 T = 279 R = 15	0.31	12.3	B	12.3	B																			
Overall Intersection	Delay: 26.4(s) LOS: C									Delay: 173.8(s) LOS: F									Delay: 21.2(s) LOS: C								

# Traffic Data - Gates

**Waverly Ave at Gates Ave**  
 Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing									Proposed with no timing changes						Proposed with 90 sec cycle at Clinton/Gates											
	Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach		
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS			
EB Gates Ave	TR-1	30/3/2	L = 0	0.12	16.0	B	16.0	B	TR-1	30/3/2	L = 0	0.11	20.1	C	20.1	C	TR-1	30/3/2	L = 0	0.15	9.8	A	9.8	A			
			T = 107								T = 99								T = 159								
			R = 4								R = 4								R = 0								
WB Gates Ave	LT-1	30/3/2	L = 36	0.23	9.5	A	9.5	A	LT-1	30/3/2	L = 36	0.23	10.2	B	10.2	B	LT-1	30/3/2	L = 36	0.30	11.2	B	11.2	B			
			T = 159								T = 159								T = 159								
			R = 0								R = 0								R = 0								
SB Waverly Ave	LTR-1	20/3/2	L = 29	0.28	16.4	B	16.4	B	LTR-1	20/3/2	L = 46	0.62	25.2	C	25.2	C	LTR-1	20/3/2	L = 46	0.53	14.6	B	14.6	B			
			T = 74								T = 84								T = 84								
			R = 54								R = 211								R = 211								
Overall Intersection	Delay: 13.4(s) LOS: B									Delay: 19.8(s) LOS: B						Delay: 12.8(s) LOS: B											

# Traffic Data - Fulton

**Vanderbilt Ave at Fulton St**  
 Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing								Proposed with no timing changes						Proposed with 90 sec cycle at Clinton/Gates									
	Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach	
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS
EB Fulton St	LTR-1	48/3/2	L = 8	0.49	15.7	B	15.7	B	LTR-1	48/3/2	L = 8	0.49	15.7	B	15.7	B	LTR-1	48/3/2	L = 8	0.49	15.7	B	15.7	B
			T = 375								T = 375								T = 375					
			R = 77								R = 77								R = 77					
WB Fulton St	LTR-1	48/3/2	L = 14	0.27	7.4	A	7.4	A	LTR-1	48/3/2	L = 14	0.27	7.4	A	7.4	A	LTR-1	48/3/2	L = 14	0.27	7.4	A	7.4	A
			T = 204								T = 204								T = 204					
			R = 29								R = 29								R = 29					
NB Vanderbilt Ave	L-1, TR-1	32/3/2	L = 39	0.11	20.7	C	27.4	C	L-1, TR-1	32/3/2	L = 39	0.12	20.9	C	27.4	C	L-1, TR-1	32/3/2	L = 39	0.12	20.9	C	27.4	C
			T = 316								T = 316								T = 316					
			R = 47								R = 47								R = 47					
SB Vanderbilt Ave	L-1, TR-1	32/3/2	L = 36	0.15	4.9	A	6.8	A	L-1, TR-1	32/3/2	L = 36	0.15	6.2	A	8.5	A	L-1, TR-1	32/3/2	L = 36	0.15	6.2	A	8.5	A
			T = 238								T = 259								T = 259					
			R = 1								R = 1								R = 1					
Overall Intersection	Delay: 15.8(s) LOS: B								Delay: 19.3(s) LOS: B						Delay: 16.1(s) LOS: B									



# Traffic Data - Fulton

## Clinton Ave at Fulton St

Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing								Proposed with no timing changes								Proposed with 90 sec cycle at Clinton/Gates							
	Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach	
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS
EB Fulton St	LTR-1	48/3/2	L = 3	0.49	8.7	A	8.7	A	LTR-1	48/3/2	L = 3	0.49	8.5	A	8.5	A	LTR-1	48/3/2	L = 3	0.49	8.5	A	8.5	A
			T = 361								T = 361								T = 361					
			R = 94								R = 94								R = 94					
WB Fulton St	LTR-1	48/3/2	L = 12	0.28	7.7	A	7.7	A	LTR-1	48/3/2	L = 12	0.28	7.7	A	7.7	A	LTR-1	48/3/2	L = 12	0.28	7.7	A	7.7	A
			T = 232								T = 232								T = 232					
			R = 15								R = 15								R = 15					
NB Clinton Ave	LTR-1	32/3/2	L = 8	0.20	21.3	C	21.3	C	LTR-1	32/3/2	L = 8	0.20	21.3	C	21.3	C	LTR-1	32/3/2	L = 8	0.20	21.3	C	21.3	C
			T = 54								T = 54								T = 54					
			R = 54								R = 54								R = 54					
SB Clinton Ave	LTR-1	32/3/2	L = 10	0.53	30.7	C	30.7	C	LTR-1	32/3/2	L = 10	0.49	28.8	C	28.8	C	LTR-1	32/3/2	L = 10	0.49	9.1	A	9.1	A
			T = 316								T = 292								T = 292					
			R = 7								R = 7								R = 7					
Overall Intersection	Delay: 16.0(s) LOS: B								Delay: 15.1(s) LOS: B								Delay: 9.8(s) LOS: A							

# Traffic Data - Fulton

## Waverly Ave at Fulton St

Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing									Proposed with no timing changes						Proposed with 90 sec cycle at Clinton/Gates											
	Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach			Operational Details			Lane Group			Approach		
	Mvmt	G/A/R	Volumes (V/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (V/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (V/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS			
EB Fulton St	TR-1	48/3/2	L = 0	0.45	7.2	A	7.2	A	TR-1	48/3/2	L = 0	0.45	7.2	A	7.2	A	TR-1	48/3/2	L = 0	0.45	7.2	A	7.2	A			
			T = 399								T = 399								T = 399								
			R = 26								R = 26								R = 26								
WB Fulton St	LT-1	48/3/2	L = 37	0.33	13.2	B	13.2	B	LT-1	48/3/2	L = 37	0.33	13.2	B	13.2	B	LT-1	48/3/2	L = 37	0.33	13.2	B	13.2	B			
			T = 251								T = 251								T = 251								
			R = 0								R = 0								R = 0								
SB Waverly Ave	LTR-1	32/3/2	L = 50	0.18	21.0	C	21.0	C	LTR-1	32/3/2	L = 50	0.20	21.2	C	21.2	C	LTR-1	32/3/2	L = 50	0.20	21.2	C	21.2	C			
			T = 56								T = 66								T = 66								
			R = 8								R = 8								R = 8								
Overall Intersection	Delay: 11.2(s) LOS: B									Delay: 11.4(s) LOS: B						Delay: 11.3(s) LOS: B											

# Traffic Data - Atlantic

**Vanderbilt Ave at Atlantic Ave**  
**Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)**

Approach	Existing								Proposed with no timing changes								Proposed with 90 sec cycle at Clinton/Gates							
	Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach	
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS
EB Atlantic Ave	T-3, R-1	51/3/2	L=0	0.58	214.6	F	193.1	F	T-3, R-1	51/3/2	L=0	0.58	214.6	F	193.1	F	T-3, R-1	51/3/2	L=0	0.58	214.6	F	193.1	F
			T=1207								T=1207													
			R=153								R=153													
WB Atlantic Ave	L-1, T-2, TR-1	64/3/2*	L=95	0.42	12.4	B	190.7	F	L-1, T-2, TR-1	64/3/2*	L=95	0.42	12.1	B	190.4	F	L-1, T-2, TR-1	64/3/2*	L=95	0.42	12.1	B	190.4	F
			T=1262								T=1249													
			R=68								R=68													
NB Vanderbilt Ave	L-1, T-1, R-1	46/3/2**	L=87	0.25	26.1	C	29.5	C	L-1, T-1, R-1	46/3/2**	L=87	0.25	26.2	C	29.5	C	L-1, T-1, R-1	46/3/2**	L=87	0.25	26.2	C	29.5	C
			T=334								T=334													
			R=52								R=52													
SB Vanderbilt Ave	T-1, TR-1	33/3/2	L=0	0.35	36.3	D	36.3	D	T-1, TR-1	33/3/2	L=0	0.38	36.7	D	36.7	D	T-1, TR-1	33/3/2	L=0	0.38	36.7	D	36.7	D
			T=299								T=307													
			R=30								R=43													
<b>Overall Intersection</b>	<b>Delay: 156.2(s) LOS: F</b>								<b>Delay: 155.3(s) LOS: F</b>								<b>Delay: 155.3(s) LOS: F</b>							

# Traffic Data - Atlantic

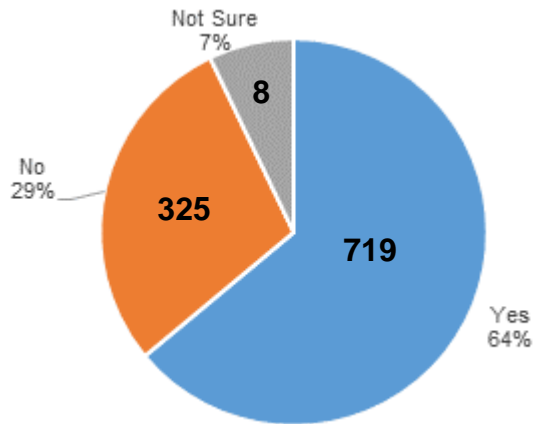
## Clinton Ave at Atlantic Ave

Traffic Analysis Summary (PM Peak: 5:00pm-6:00pm)

Approach	Existing								Proposed with no timing changes							Proposed with 90 sec cycle at Clinton/Gates								
	Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach		Operational Details			Lane Group			Approach	
	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS	Mvmt	G/A/R	Volumes (v/h)	V/C Ratio	Delay (s)	LOS	Approach Delay (s)	Approach LOS
EB Atlantic Ave	T-3	52/3/2	L = 0	0.59	243.5	F	243.5	F	T-3	52/3/2	L = 0	0.59	243.5	F	243.5	F	T-3	52/3/2	L = 0	0.59	243.5	F	243.5	F
			T = 1259								T = 1259								T = 1259					
			R = 0								R = 0								R = 0					
WB Atlantic Ave	T-2, TR-1	52/3/2	L = 0	0.71	44.2	D	44.2	D	T-2, TR-1	52/3/2	L = 0	0.71	44.5	D	44.5	D	T-2, TR-1	52/3/2	L = 0	0.71	44.5	D	44.5	D
			T = 1374								T = 1385								T = 1385					
			R = 115								R = 115								R = 115					
SB Clinton Ave	LR-1	50/3/2*	L = 371	0.60	31.6	C	31.6	C	LR-1	50/3/2*	L = 371	0.56	30.5	C	30.5	C	LR-1	50/3/2*	L = 371	0.56	30.5	C	30.5	C
			T = 0								T = 0								T = 0					
			R = 51								R = 27								R = 27					
Overall Intersection	Delay: 121.7(s) LOS: F								Delay: 122.1(s) LOS: F							Delay: 122.1(s) LOS: F								

# COMMUNITY OUTREACH - Survey

Do you support the project as proposed?



Do you support the project as proposed?		
Yes	719	64%
No	325	29%
Not Sure	80	7%
<b>TOTAL</b>	<b>1124</b>	<b>100%</b>



90<sup>th</sup> St (between 3<sup>rd</sup> Ave and 2<sup>nd</sup> Ave)