

Brooklyn Cruise Terminal: Rapid Traffic Assessment

MSC Meraviglia Port of Call Days

August 2023



Congestion and Safety Concerns on MSC Meraviglia Port of Call Days

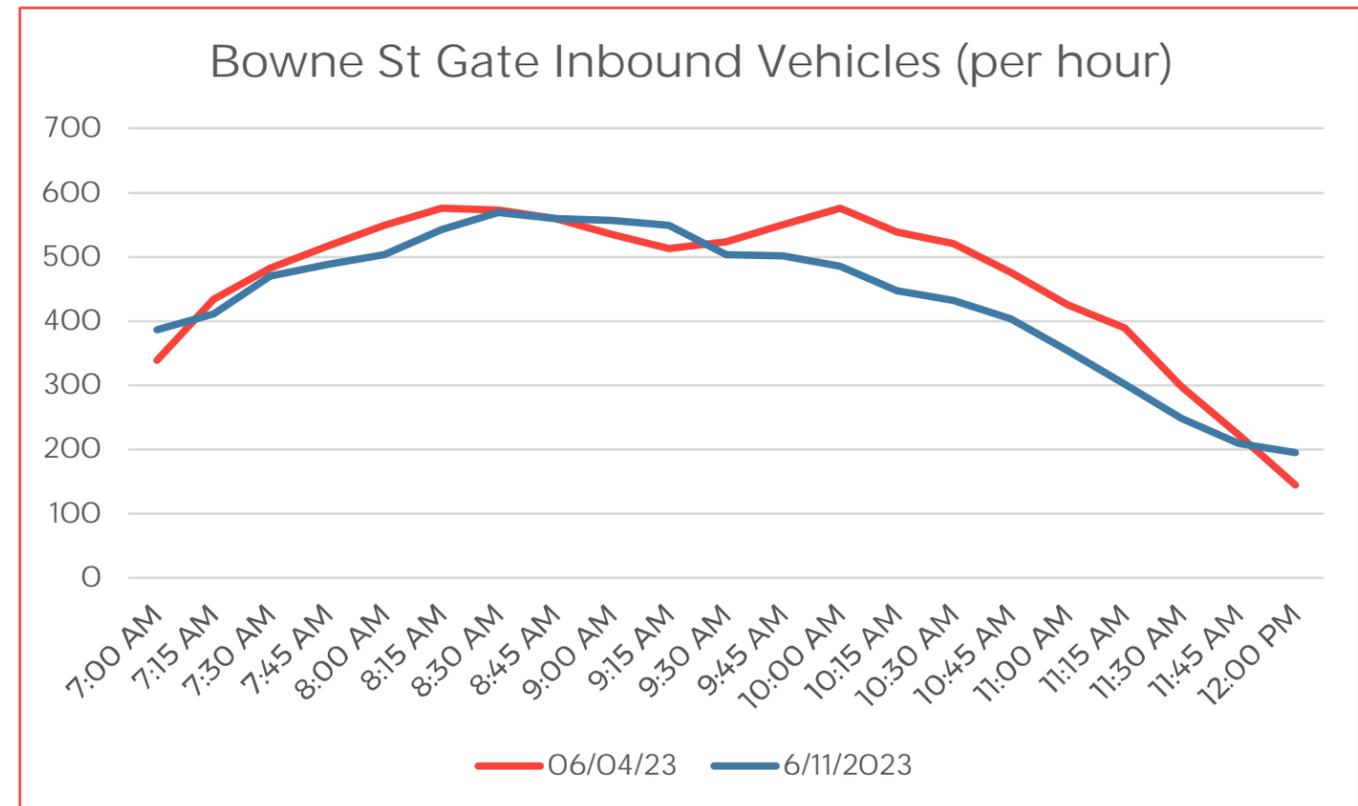
- Excessive congestion on roadways in Red Hook for multiple hours on Sunday mornings
 - Van Brunt Street and Bowne Street - gridlocked
- Vehicle incursions along Brooklyn Waterfront Greenway
 - Imlay Street
 - Conover Street
- Increased noise within residential neighborhoods
- GPS problems, routing vehicles to incorrect BCS ingress points
 - Wolcott Street gate (Exit Only)
 - Ferris Street gate (Closed on Port of Call days)

June 2023 Rapid Response

- Data Collection (traffic count vendor)
 - Sunday 06/04
 - Manual vehicle counts at cruise terminal access points
 - Video observations of cruise terminal frontage
 - Sunday 06/11
 - Turning movement counts (Miovision cameras): 12 locations
 - Saturday 06/10 - Sunday 06/18
 - Automatic traffic recorders (ATRs): 4 locations
- Field Observations (WSP Staff)
 - Three Sundays (06/04, 06/11, 06/18)
- NYPD Traffic Enforcement Agents (TEAs) and Sam Schwartz Traffic Managers (TMs)

Data Collection Results - Inbound

- Bowne Street Gate
 - 06/04: Ingress peak occurred from 10:00 - 11:00 AM = 576 vehicles inbound
 - 06/11: Ingress peak occurred from 9:15 - 10:15 AM = 546 vehicles inbound
 - Detour of southbound Van Brunt Street inbound vehicles to Commerce St and Imlay Street observed on 06/11 between 9:45 AM and 11:00 AM
 - After 11:00 AM, inbound vehicles decrease to approximately 350-425 vehicles per hour



- Peak Truck Volumes (Average of 06/11 & 06/18)
 - NB Imlay St: 53 Trucks (11:00 AM - 12:00 PM)
 - SB Van Brunt St: 30 trucks (10:00 AM - 11:00 AM)
 - NB Van Brunt St: 9 trucks (10:00 AM - 11:00 AM)

Data Collection Results - Outbound

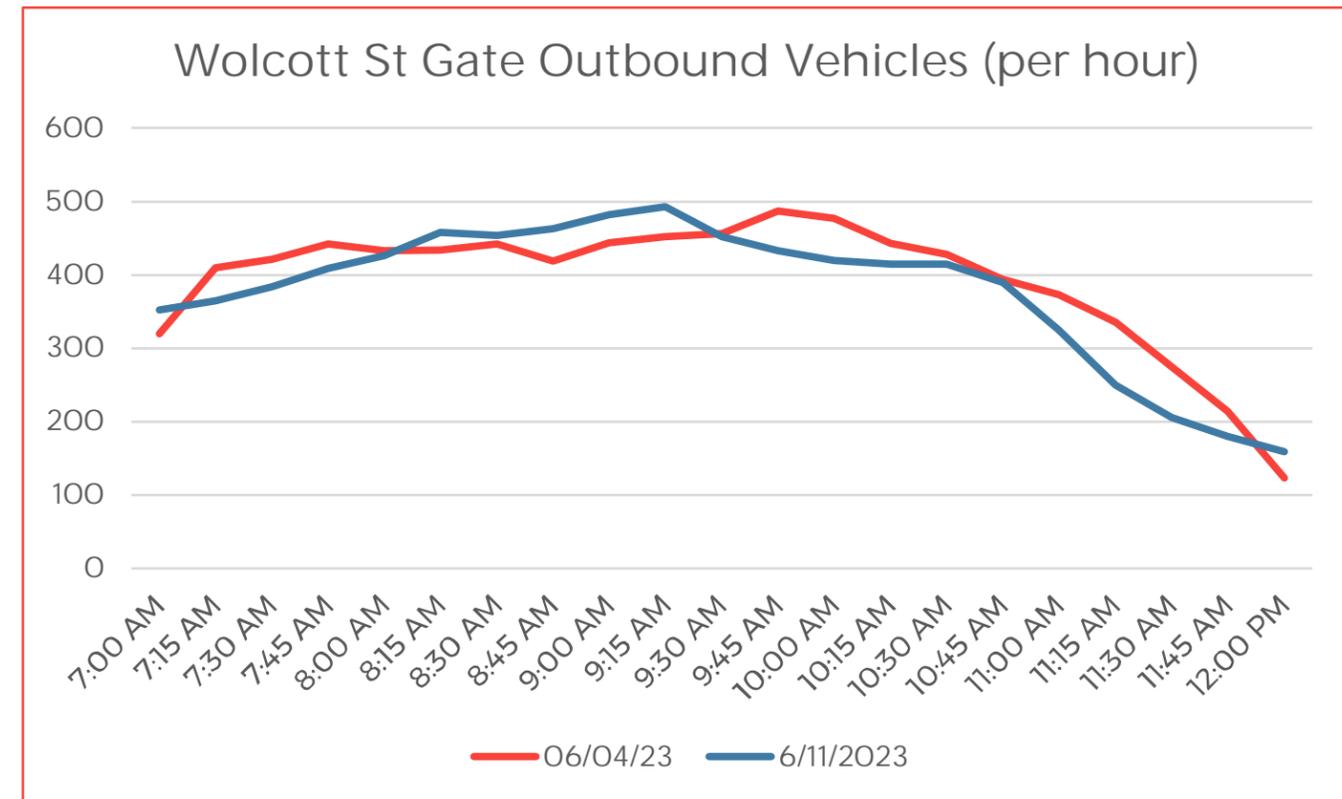
— Wolcott Street Gate

— 06/04: Egress peak occurs from 9:45 - 10:45 AM = 487 vehicles outbound

— > 400 vehicles per hour observed between 7:15 AM and 10:30 AM

— 06/11: Egress peak occurs from 9:15 - 10:15 AM = 493 vehicles outbound

— > 400 vehicles per hour observed between 7:45 AM and 11:30 AM

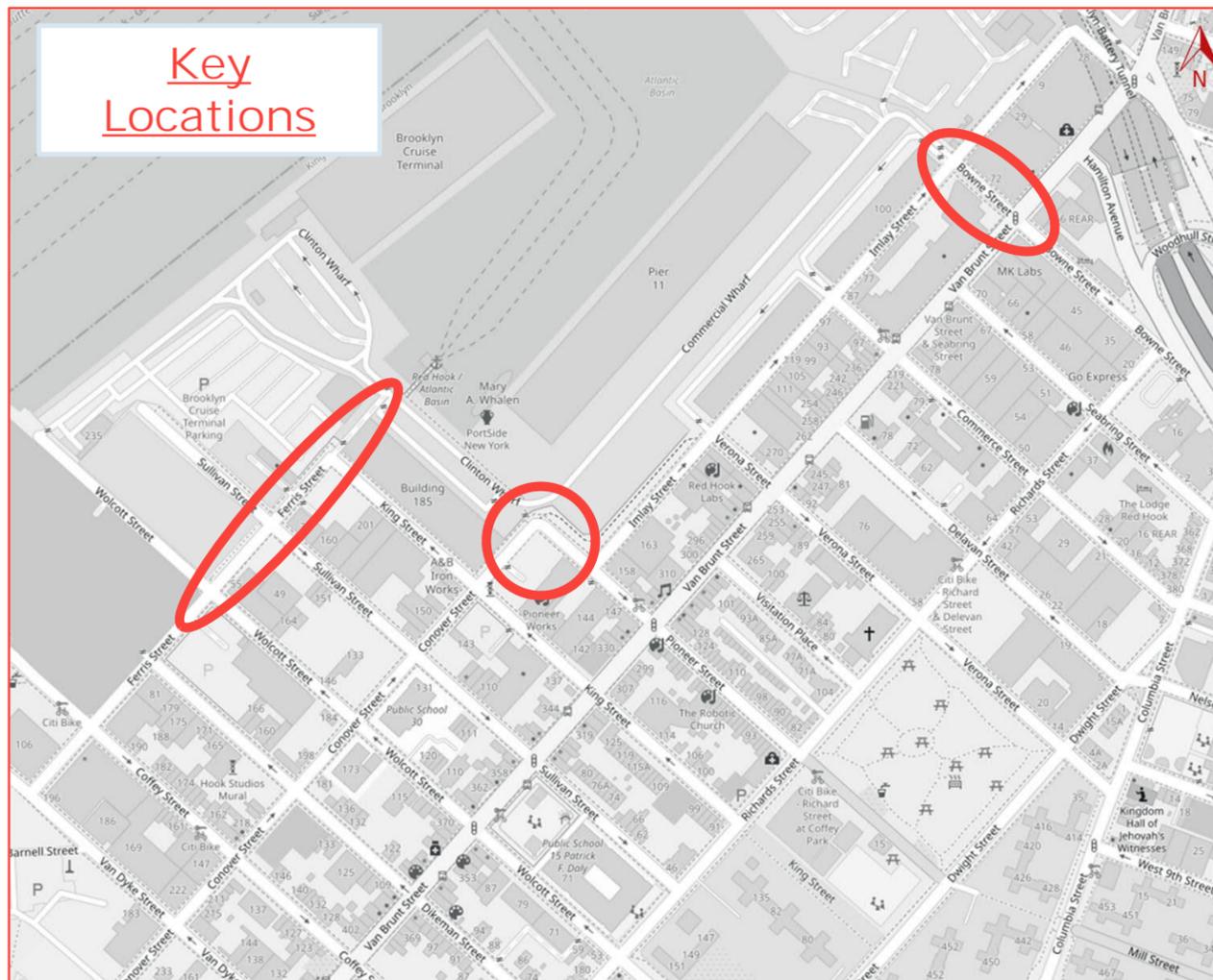


Field Observations

- Three consecutive port of call days (Sundays 06/04, 06/11, 06/18)
 - 7:00 AM - 12:00 PM
- Brooklyn Cruise Terminal (Internal)
- Red Hook (External)
 1. Van Brunt Street and Bowne Street
 2. Imlay Street and Bowne Street
 3. Conover Street and Pioneer Street
 4. Conover Street and King Street
 5. Ferris Street and Sullivan Street
 6. Ferris Street and Wolcott Street



Immediate / Trial Improvements - External



- Identification of key locations
 - Bowne Street gate
 - Pioneer Street pedestrian gate
 - Misguided vehicles at incorrect entry points
 - Wolcott Street gate, Ferris Street gate

Key Location - Bowne Street Gate

- Sole vehicular entry point for Terminal
- Entry from multiple directions
 - Westbound Bowne Street
 - Northbound Imlay Street
- Exit from facility for non-Cruise Terminal vehicular traffic
- Brooklyn Waterfront Greenway crosses driveway path



Key Location - Bowne Street Gate

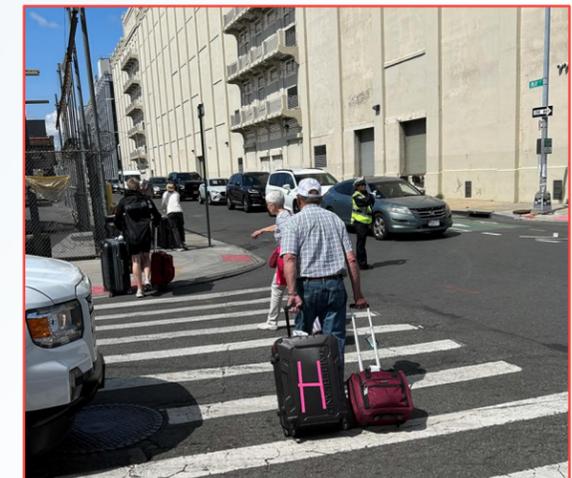
- Van Brunt Street and Bowne Street: gridlock experienced frequently during peak period
 - Van Brunt Street through traffic (northbound and southbound) experiences heavy delays
- Imlay Street and Bowne Street: multiple conflicting movements
- Bowne Street: minimal storage capacity



Bowne St & Van Brunt St (looking northeast)



Bowne St & Imlay St (looking east)



Bowne St & Imlay St (looking south)

Key Location - Bowne Street Gate

- Proposed Solution: Reroute Southbound Van Brunt Street traffic
 - Proposed Route
 - Southbound right onto Commerce Street
 - Westbound right onto Imlay Street
 - Inbound Northbound Van Brunt Street traffic utilizes Westbound Bowne Street
- Benefits
 - Increases storage capacity for inbound cruise terminal traffic
 - Simplified movements at Imlay Street and Bowne Street



Key Location – Pioneer Street Pedestrian Gate

- “Unofficial” Pick-Up and Drop-Off location along frontage of Conover Street and Pioneer Street
 - Private vehicles and For-Hire vehicles (FHVs)
- Drop-offs include vehicles that had initially been routed to incorrect entry gates



Key Location - Pioneer Street Pedestrian Gate

- Vehicle incursions within Brooklyn Waterfront Greenway
 - Subsequently this was mitigated via deployment of cones
- Vehicular pick-up and drop off occurring at all curbside frontages and within the travel way
- Heavy pedestrian activity within crosswalk adjacent to the Pioneer St pedestrian access gate



Conover St (looking south)



Pioneer St (looking east)



Conover St (looking south)

Key Location – Pioneer Street Pedestrian Gate

- Proposed Solutions: Active traffic management
 - Cones stop vehicular incursions to Brooklyn Waterfront Greenway
 - Recommend installing delineators to replace traffic cones
 - Prevent vehicles from lingering along curbside frontage and from blocking the flow of traffic
- Benefits
 - Improved pedestrian safety
 - Decreased traffic congestion



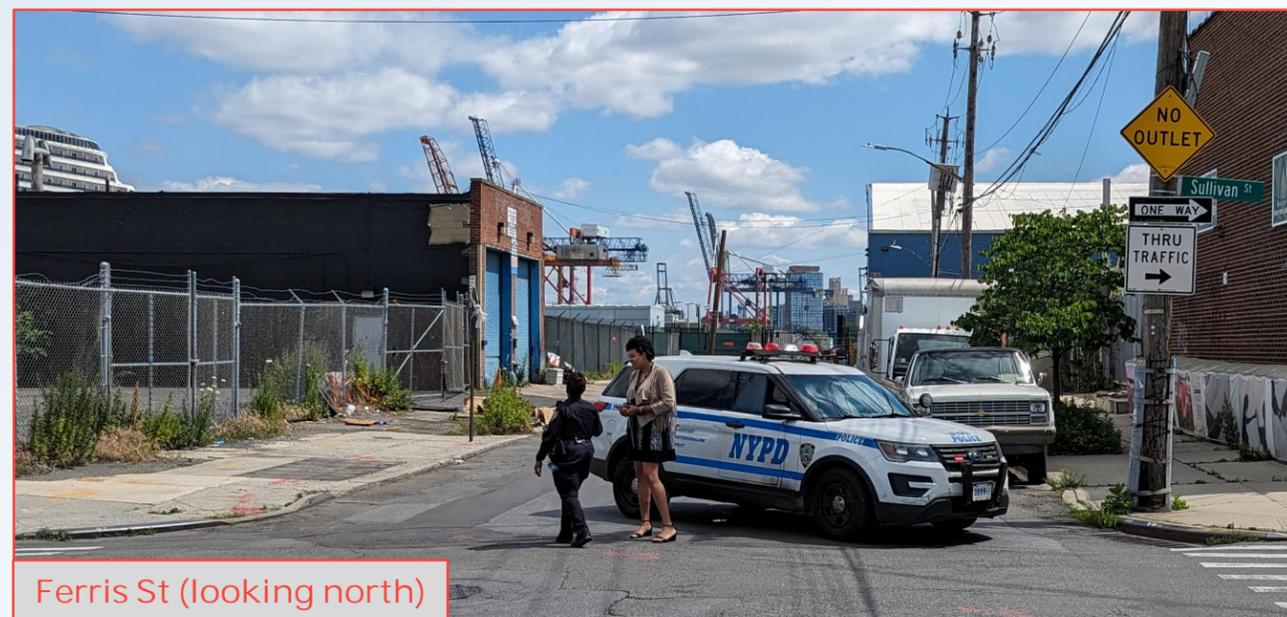
Key Location - Errant Vehicles and Incorrect Brooklyn Cruise Terminal Entry Points

- Bowne Street is the only ingress point for the terminal
 - Wolcott Street is utilized for egress only on MSC Meraviglia Port of Call days
 - Ferris Street is closed on Port of Call days
- Errant vehicles increase congestion on low-volume roadways
 - Vehicles are lost and confused, as the area isn't signed for Terminal ingress
 - Likely increases pick-up and drop-off activity along Pioneer Street



Key Location - Errant Vehicles and Incorrect Brooklyn Cruise Terminal Entry Points

- Proposed Solution: GPS Updates
 - Google Maps, Waze, Apple Maps - Updated to route inbound vehicles to Bowne Street Gate
 - Uber and Lyft GPS systems updated as well
- Benefit
 - Decreased driver confusion, congestion, and noise in the vicinity of the Wolcott Street gate and Ferris Street gate
 - Decreased traffic along Conover Street and Pioneer Street is likely to decrease curbside activity along Pioneer Street
- Note: With additional inbound vehicles correctly routed to Bowne Street, there will be increased pressure to ensure traffic at the ingress gate moves efficiently.



Ferris St (looking north)

Signing Improvements: Ferris St and Sullivan St

- Reinstall supplementary “Thru Traffic” sign
- Add supplementary “No Outlet” sign
- Additionally, recommend converting Ferris St, between King St and Sullivan St to one-way southbound
 - Google Maps already indicates this
 - “Do Not Enter” signs would replace existing signing



Ferris St (looking north) - 2022



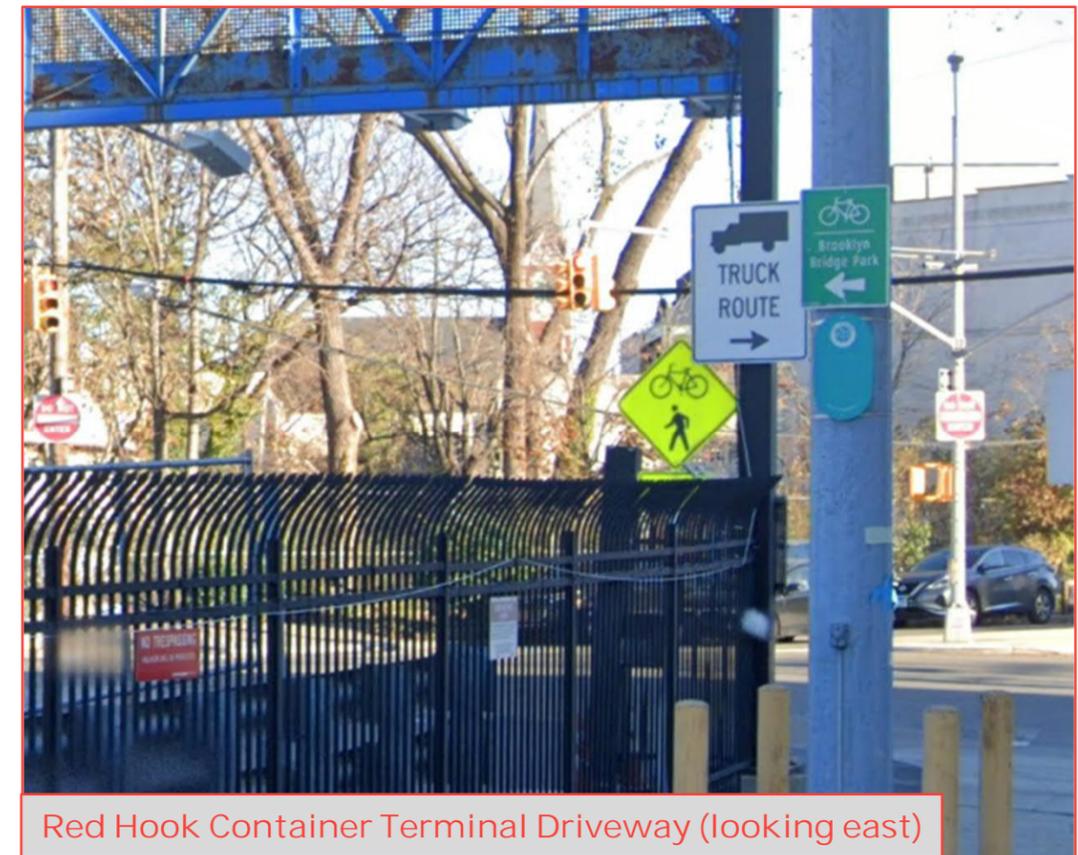
Ferris St (looking north) - 2019

Signing Improvements: Bowne St Gate Outbound

- Install multi-use path warning signs with arrow plaques (W11-15; W16-7P)
 - Fluorescent yellow-green; similar signs are installed at Red Hook Container Terminal driveway



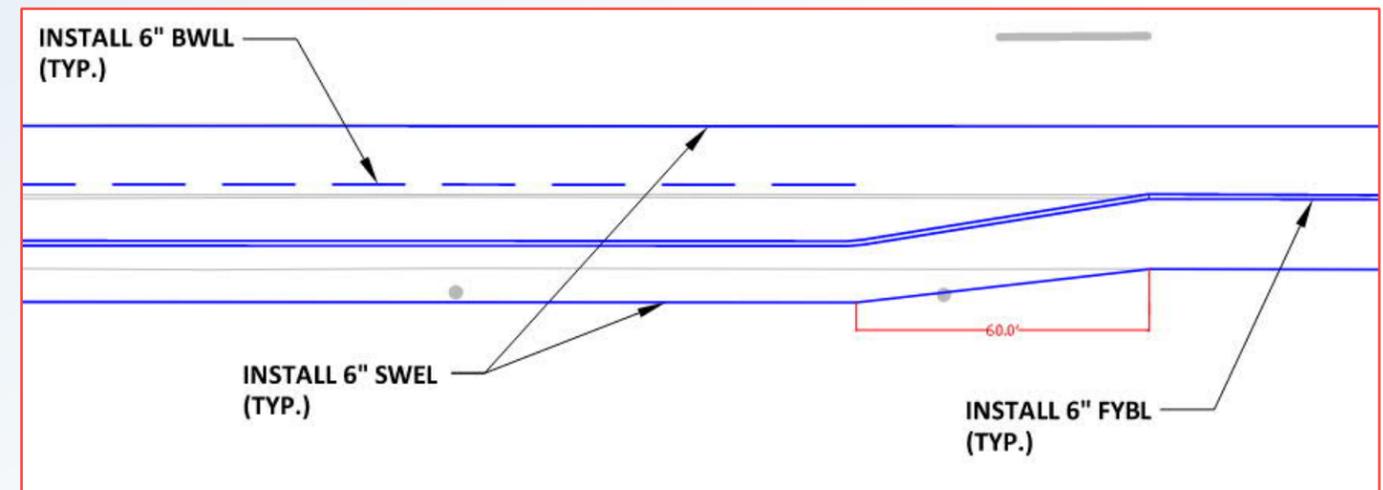
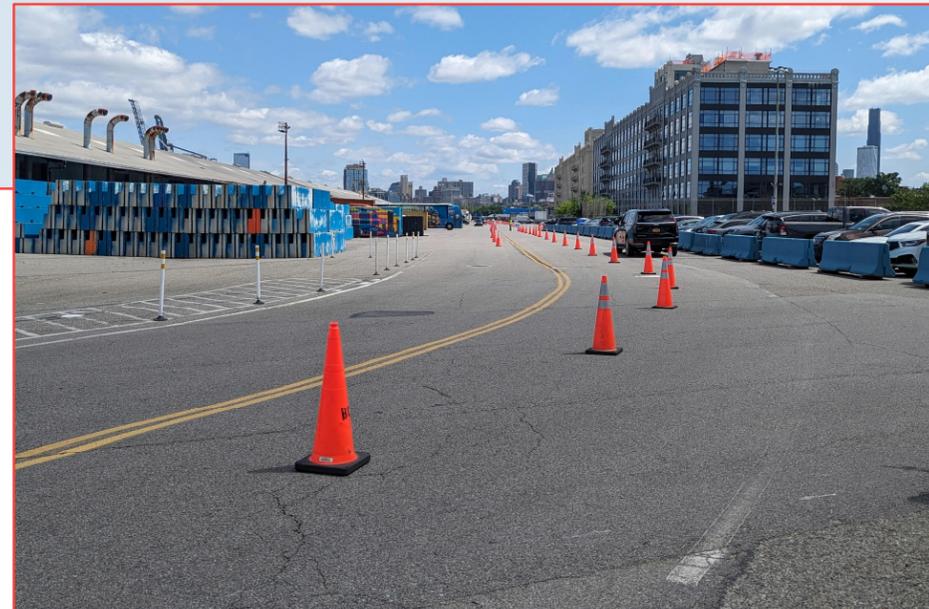
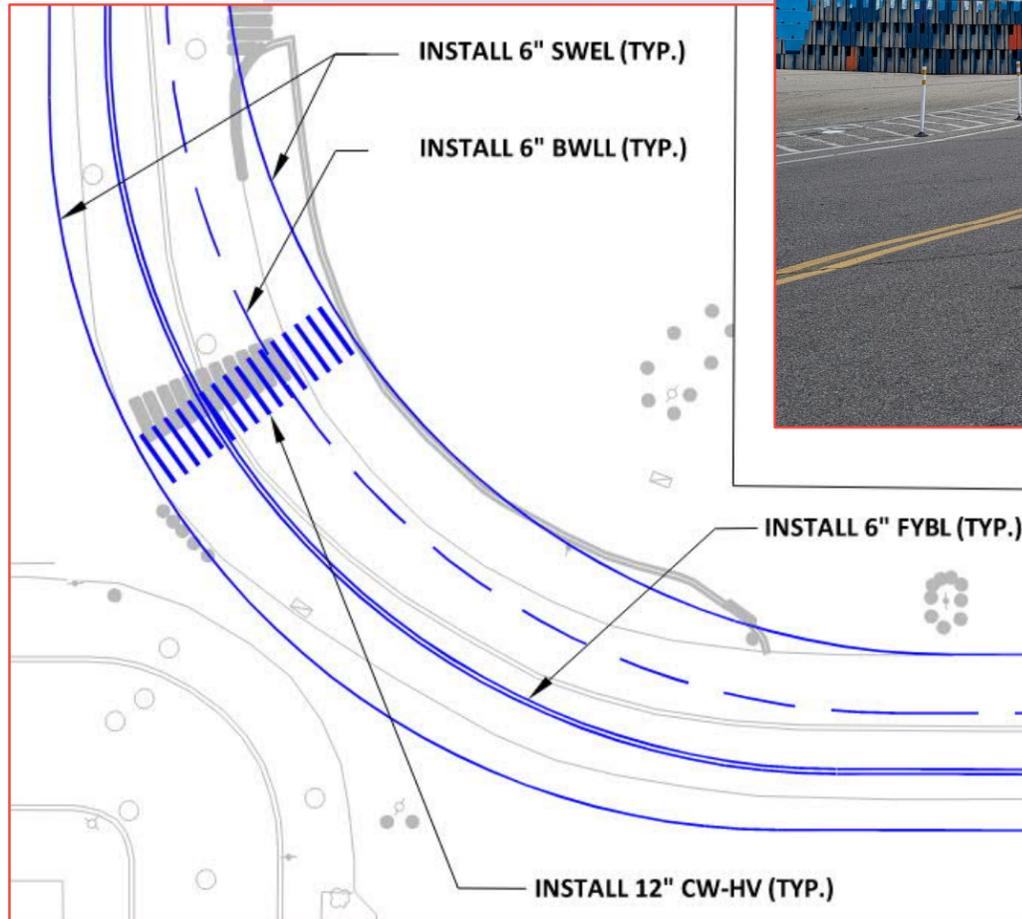
Bowne St (looking east)



Red Hook Container Terminal Driveway (looking east)

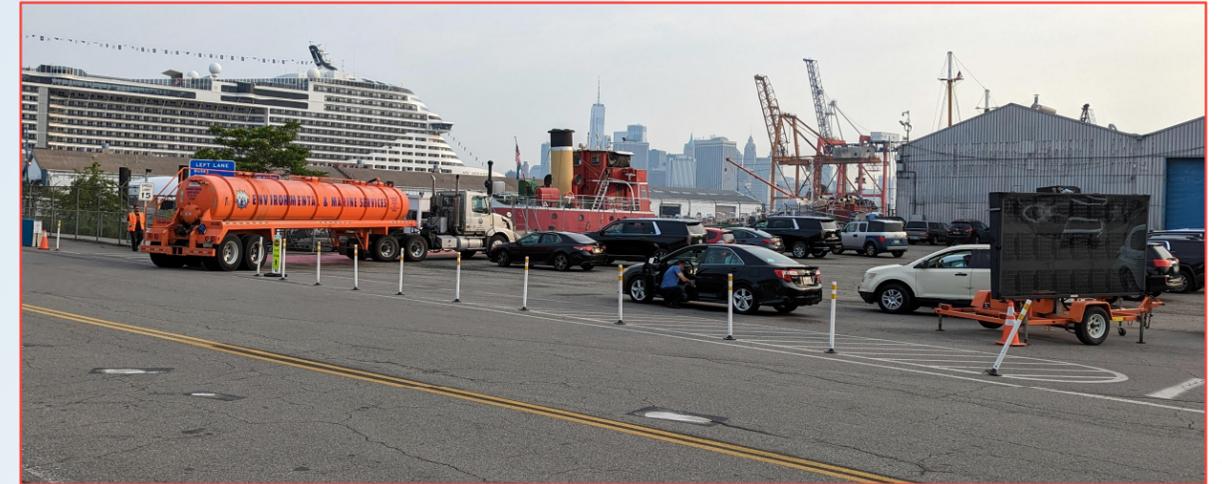
Internal Improvements: Pavement Markings

— Restripe internal driveway from two lanes to three lanes



Internal Improvements: Cell Phone Lot and Pedestrian Path

- Existing cell phone lot is largely wide open, with pedestrian activity along both sides of roadway



Internal Improvements - Cell Phone Lot and Pedestrian Path

- Improve signing and operational usage of cell phone lot
 - Purpose
 - Pick-up?
 - Drop-Off?
 - Both?
 - Users
 - Personal Vehicles?
 - FHVs (Uber/Lyft)?
- Formalize pedestrian path between the lot and terminal roadway



MSC Meraviglia Passenger Survey

Survey of cruise passengers conducted for five weeks (06/04/23 - 07/02/23)

- Modal split (average 1,044 surveys)
 - Drive and Park = 28% (284 respondents)
 - Personal Drop Off = 29% (306 respondents)
 - FHVs = 14% (147 respondents)
 - Taxis = 18% (184 respondents)
 - MSC Transfer = 2% (16 respondents)
 - Shuttle / Bus = 8% (83 respondents)
 - Ferry = 2% (24 respondents)
- Origin (average 954 respondents)
 - Manhattan = 8% (77 respondents)
 - Brooklyn = 10% (96 respondents)
 - Staten Island = 2% (14 respondents)
 - Queens / Long Island = 6% (62 respondents)
 - Bronx / Upstate = 9% (90 respondents)
 - New Jersey = 13% (120 respondents)
 - Other States = 43% (413 respondents)
 - Foreign = 9% (82 respondents)

Planned Improvements

- Implemented
 - Cones along Brooklyn Waterfront Greenway along Conover St
 - Revised TEA / TM deployment strategies
 - GPS updates to route vehicles to Bowne St Gate
- Planned
 - Delineators to replace traffic cones along Brooklyn Waterfront Greenway
 - Signing Improvements
 - Ferris Street and Sullivan Street
 - Bowne St Gate Outbound
 - Restripe Bowne St (within terminal) to three lane configuration

Next Steps

- Create long-term, easily deployable transportation manager strategies
 - Additional data collection (TMCs, ATRs)
 - Microsimulation analysis to determine Levels of Service and analyze potential traffic diversions.
- Collect more detailed origin/destination information
 - Refined cruise passenger survey
 - Big Data (Replica / Streetlight)
- Develop shuttle routes from airport / transit locations
 - Potentially establish off-site park-n-ride locations
- Coordination with Ports America on internal changes to terminal

Thank you!

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