

# Site Analysis and Lighting Survey

# SCOPE OVERVIEW



**Phase 1 (2021)**  
Completed installation of LUC to be refreshed

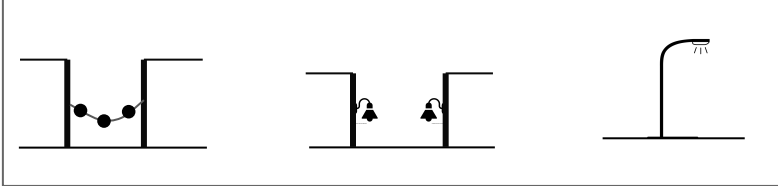
**Phase 2 (2023)**  
New potential blocks to be designed for LUC

**Future Phases**  
Based on future fundraising

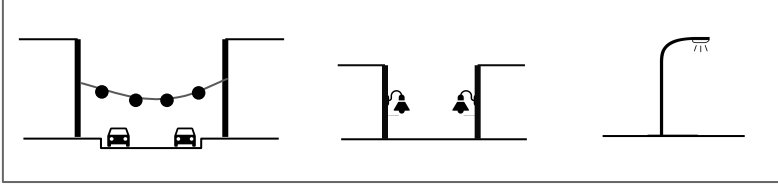
# ZONES

## Defining Street Conditions

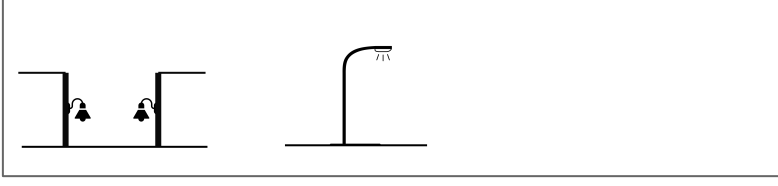
**ZONE 1** Pedestrianized Streets with String Lights  
Pell St, Doyers St



**ZONE 2** Narrow Streets with String Lights  
Mott St, Elizabeth St, Bayard St



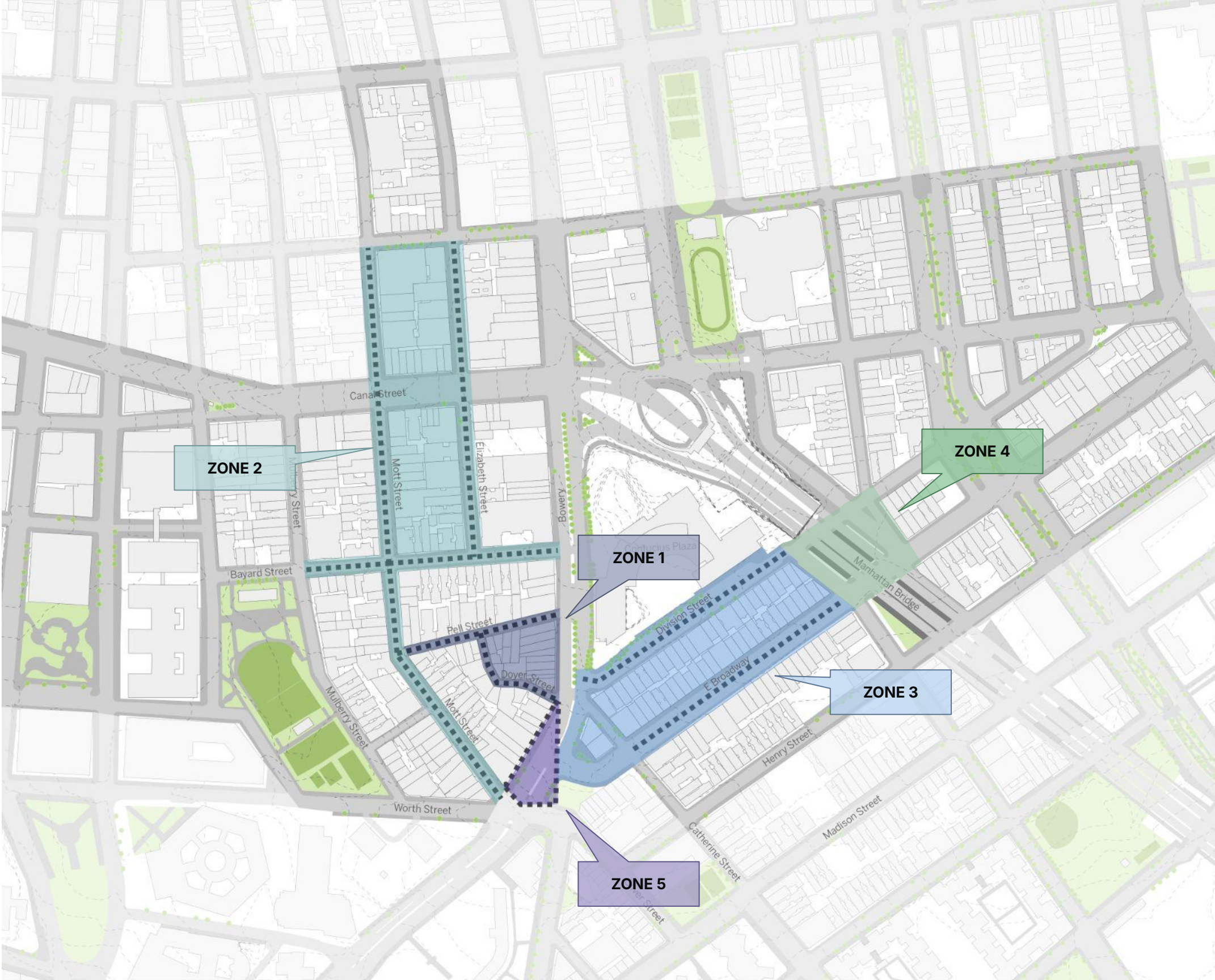
**ZONE 3** Wide Streets with Wall-Mounted Lights  
East Broadway, Division St



**ZONE 4** Bridge Underpass  
Manhattan Bridge






**ZONE 5** Plaza Lighting  
Chatham Square



# NIGHT USES

## Site Analysis

-  Closes after 9 pm
-  Closes Between 7 - 9pm
-  Closes Before 7 pm



# SCOPE OVERVIEW

## Lighting Survey

SEPTEMBER 27, 2023

Sunset - 9PM

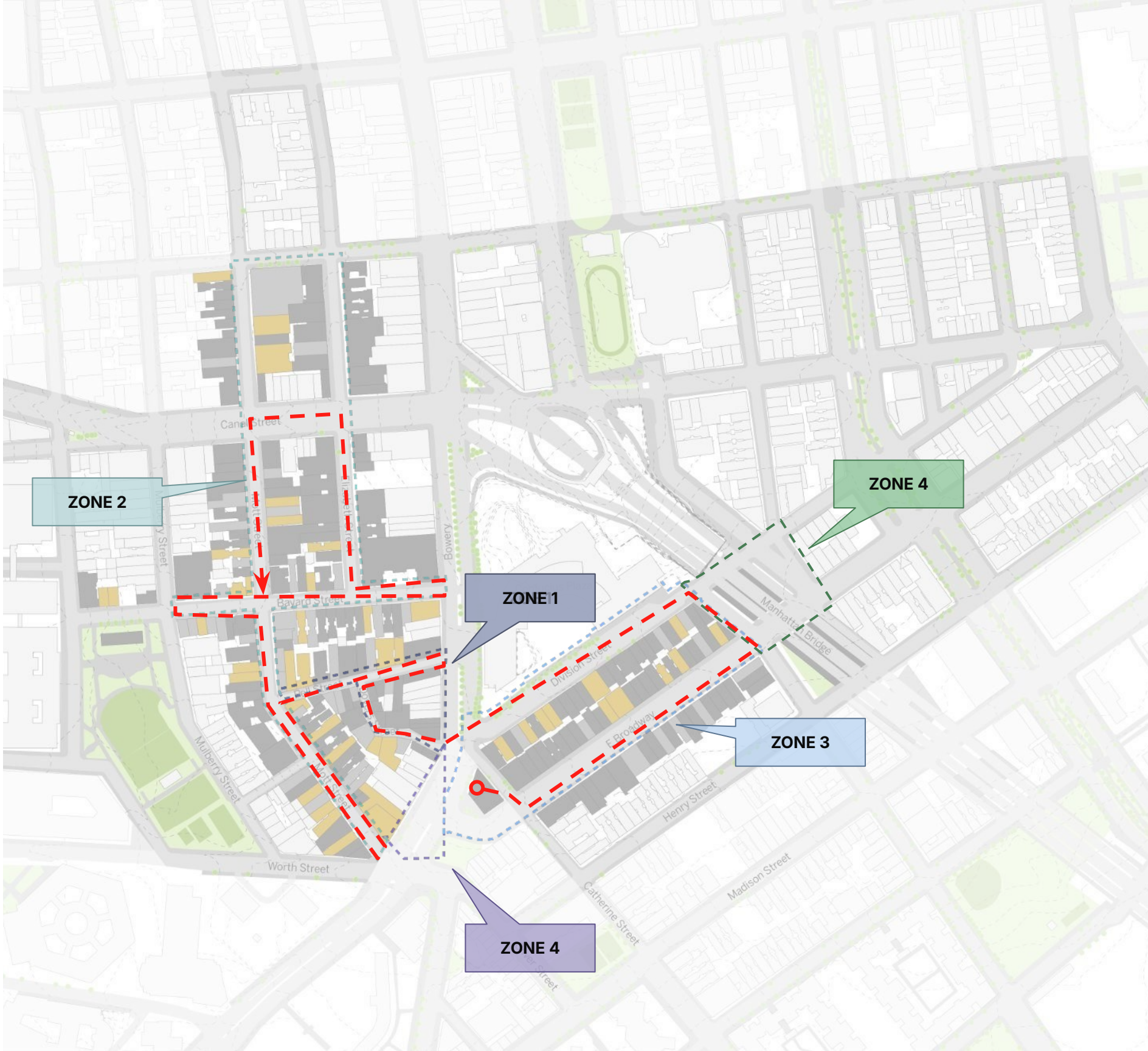
### Equipment:



Illuminance Meter  
(Measure quantity of light on the ground)



DSLR Camera, Tripod +  
Luminance Meter  
(Measure and mapping of perceived "brightness" in visual field)



# ZONE 1

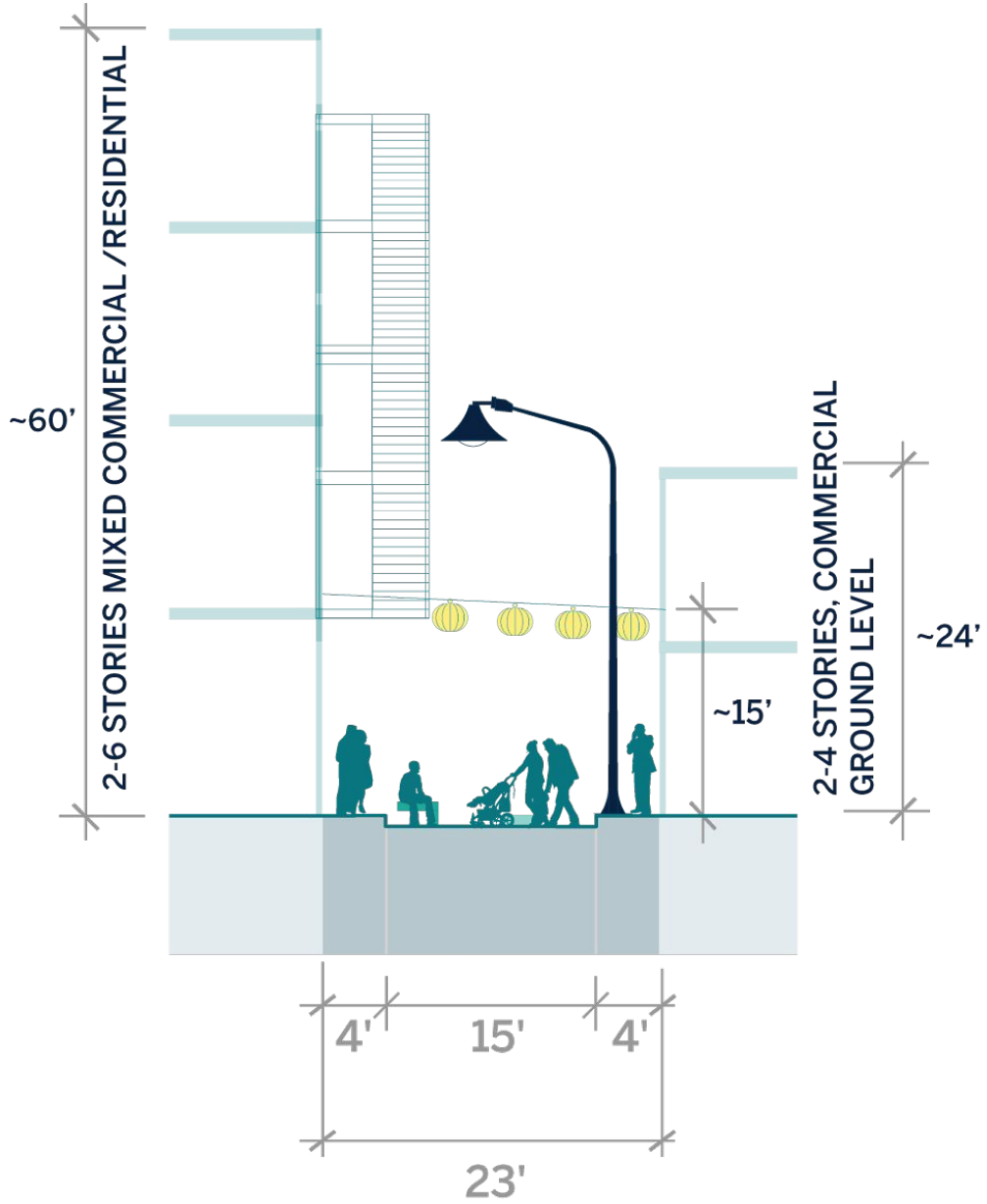
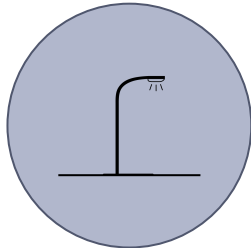
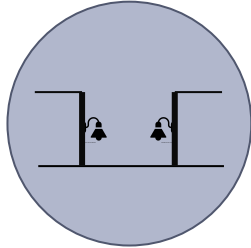
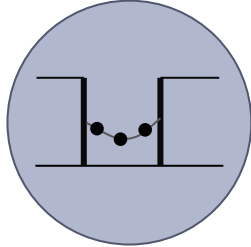
Pedestrian-only Street Condition (Doyers St, Pell St)



# ZONE 1

## Pedestrian-only Street Condition (Doyers St, Pell St)

Doyer St



# ZONE 1

## Lighting Survey

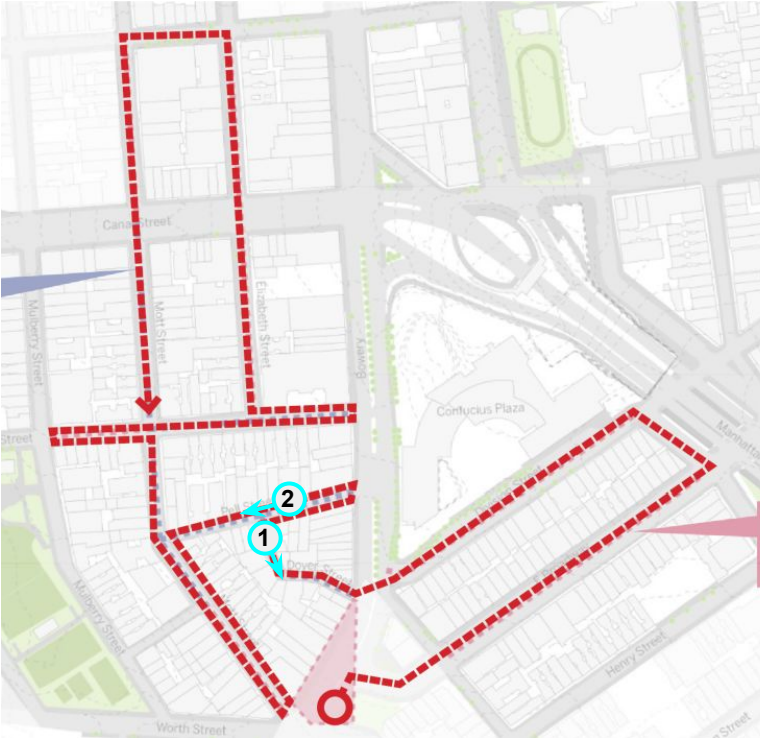
### LUMINANCE MAPPING



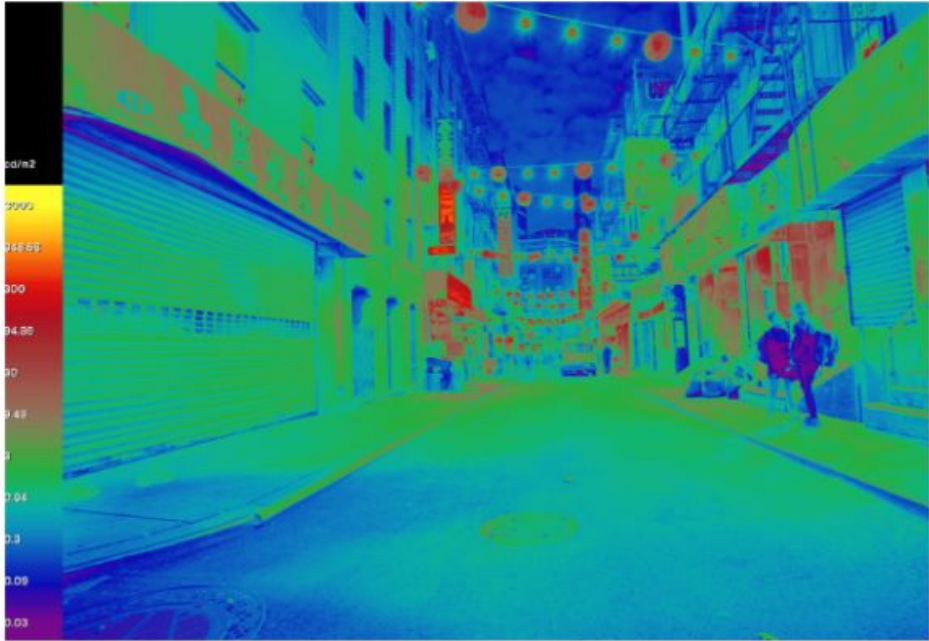
1) View down Doyers Street



False color HDR photo indicating Luminance in cd/m2.



2) View down Pell Street



False color HDR photo indicating Luminance in cd/m2.

# ZONE 2

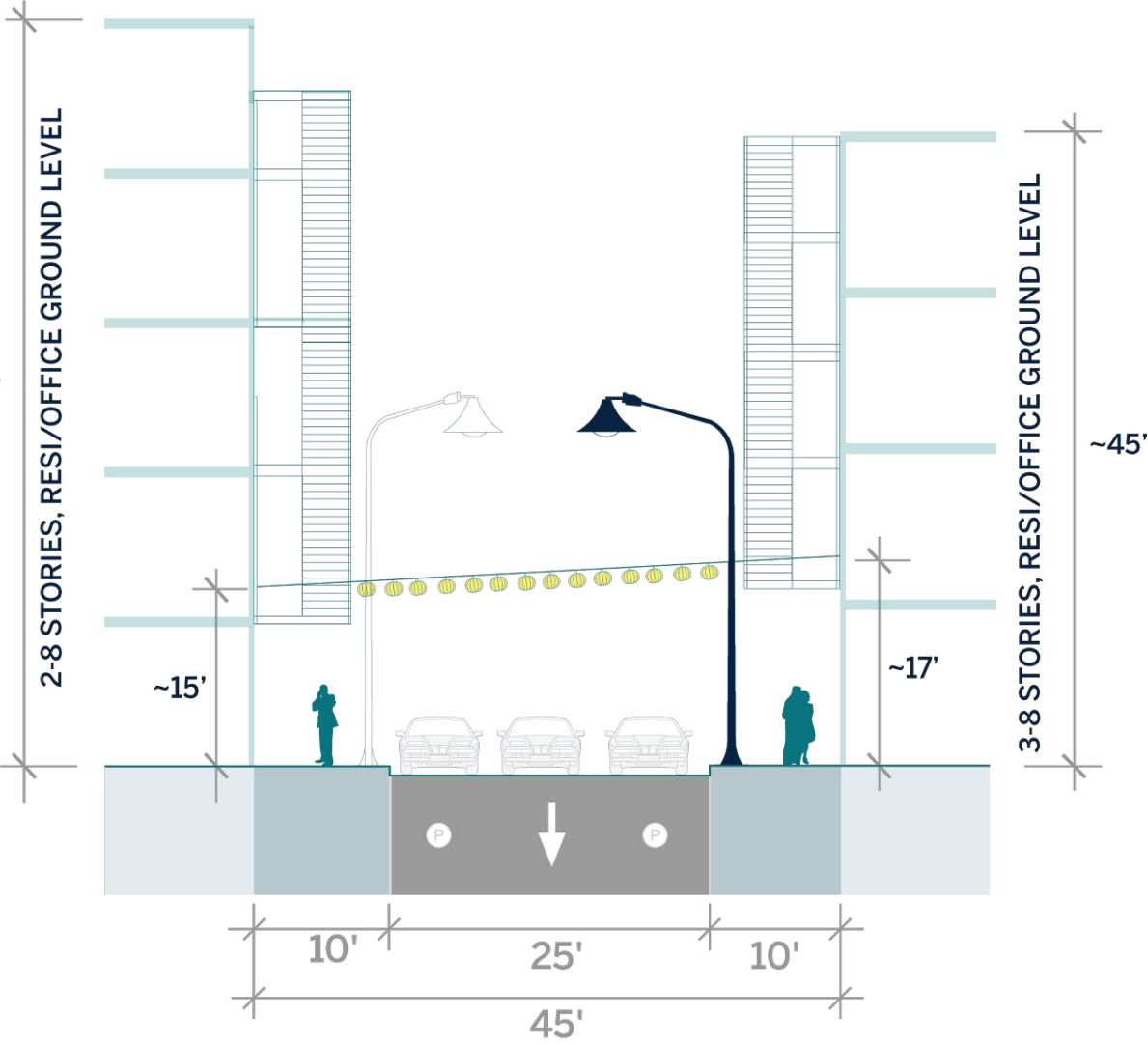
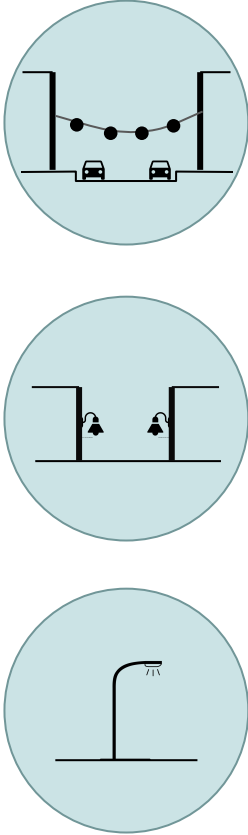
Narrow Street Conditions (Mott St, Elizabeth St, Bayard St)



# ZONE 2

Narrow Street Conditions (Mott St, Elizabeth St, Bayard St)

Mott St



# ZONE 2

## Lighting Survey

### LUMINANCE MAPPING



1) View North down Mott Street, below Bayard Street



False color HDR photo indicating Luminance in cd/m2.



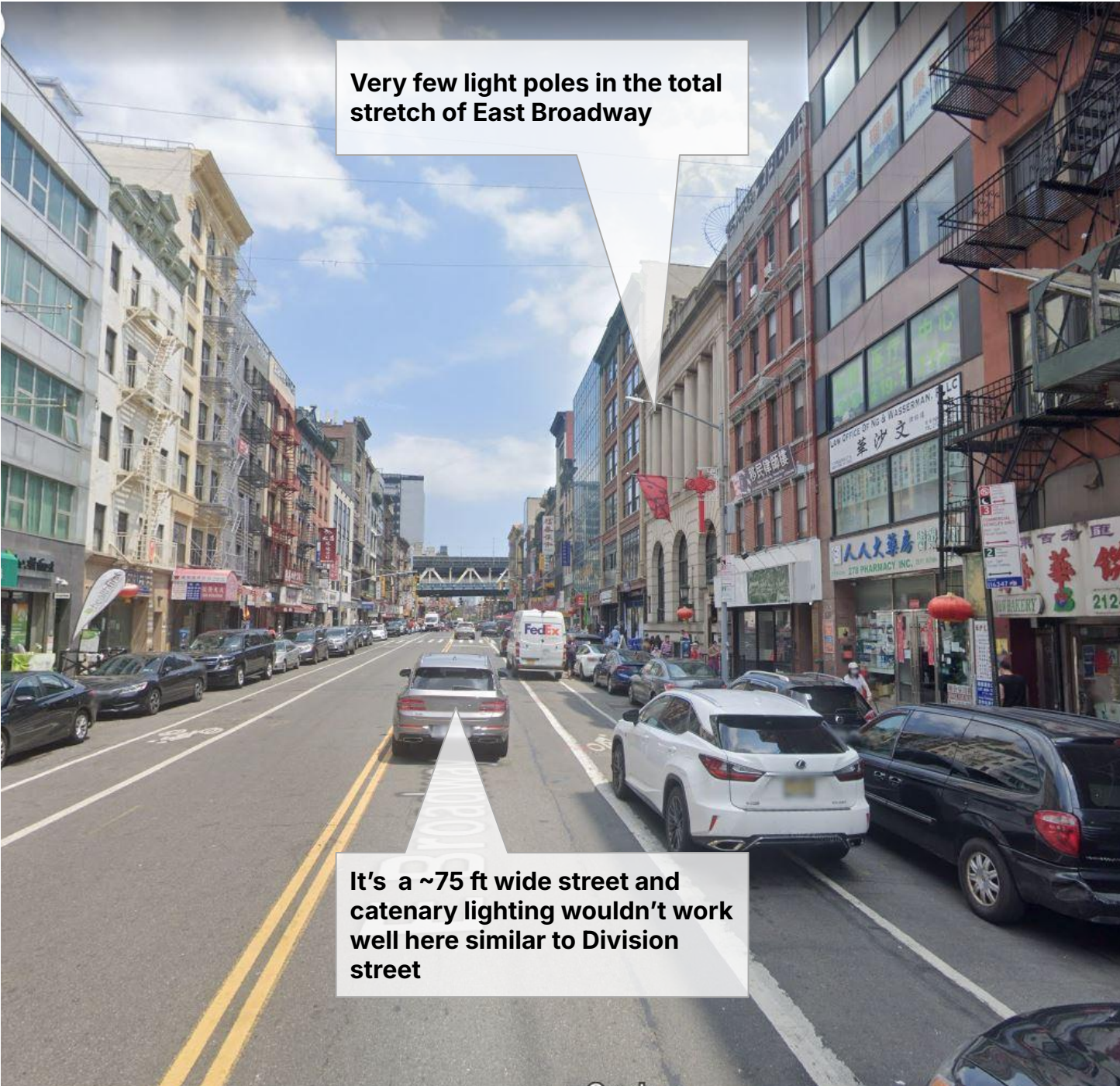
2) View South down Mott Street, above Bayard Street



False color HDR photo indicating Luminance in cd/m2.

# ZONE 3

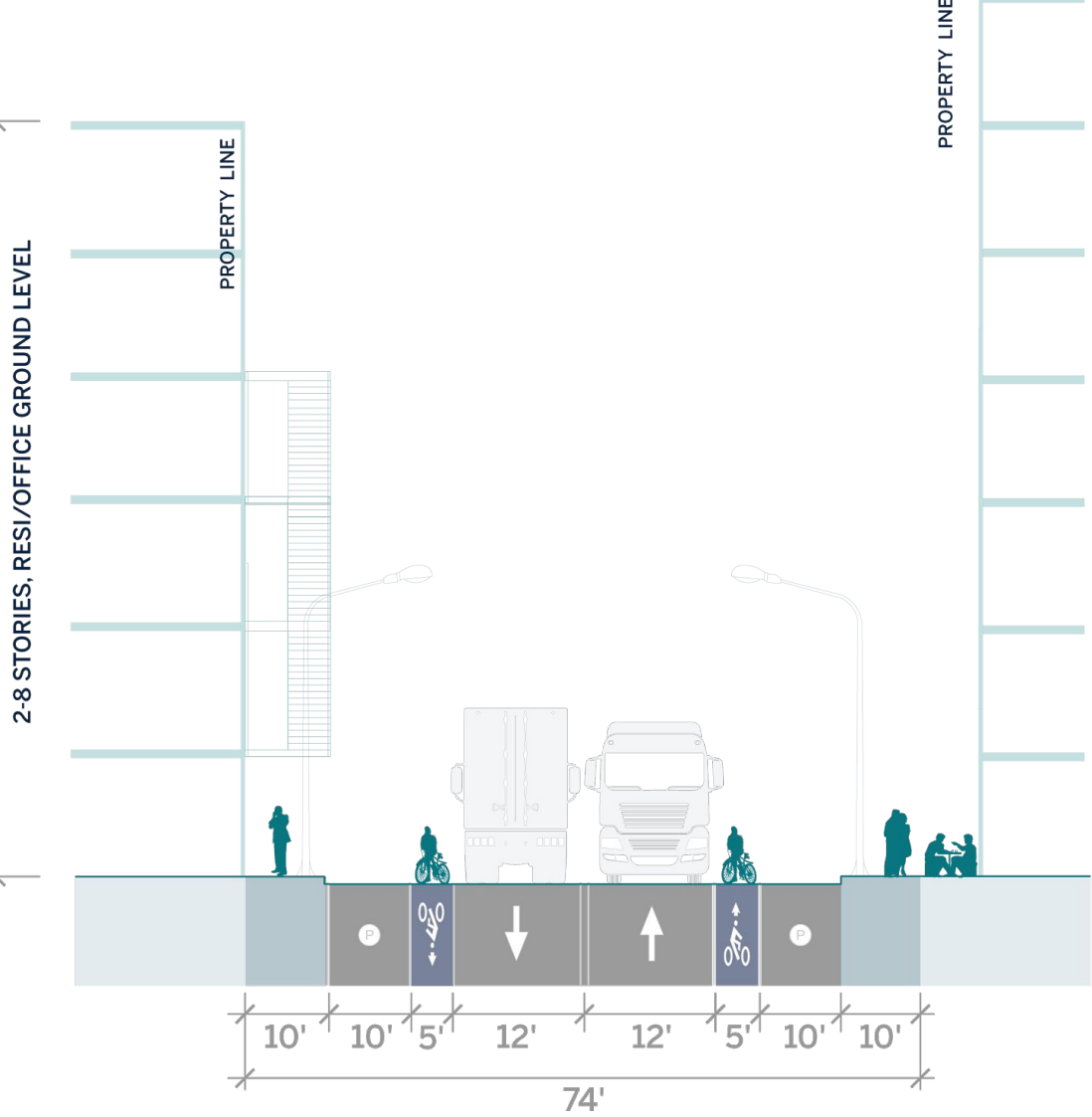
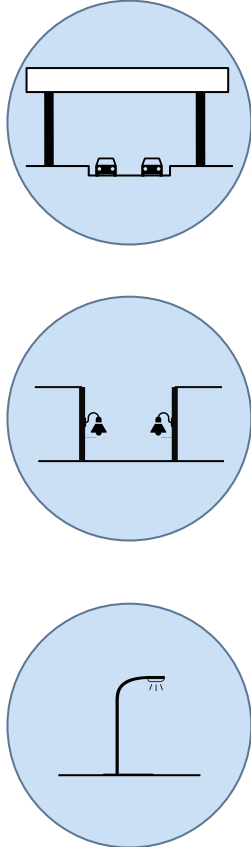
## Wide Street Condition (East Broadway, Division St)



# ZONE 3

Wide Street Condition (East Broadway, Division St)

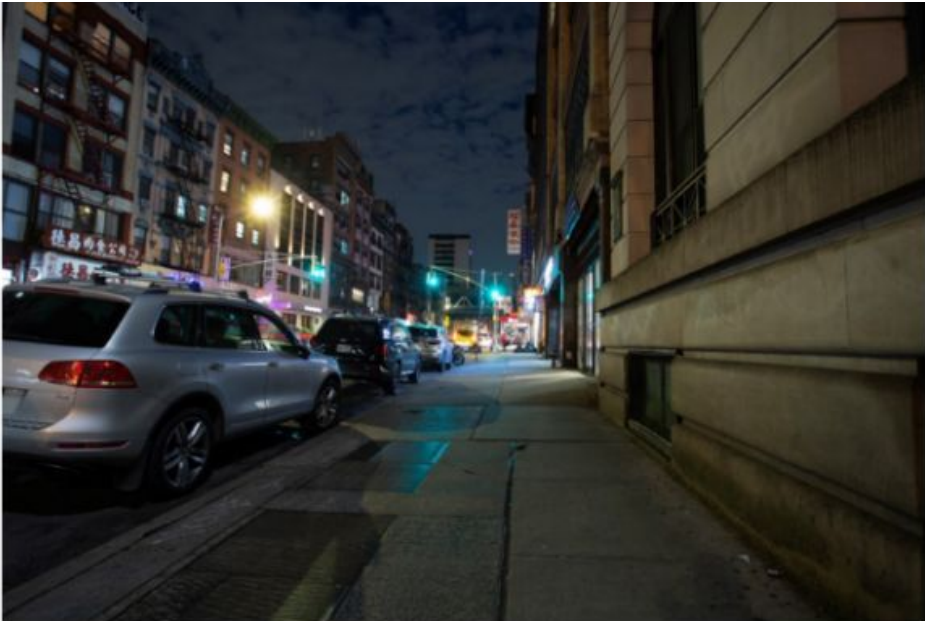
East Broadway



# ZONE 3

## Lighting Survey

### LUMINANCE MAPPING



1) East Broadway approaching Market Street



False color HDR photo indicating Luminance in cd/m2.



2) East Broadway approaching Market Street



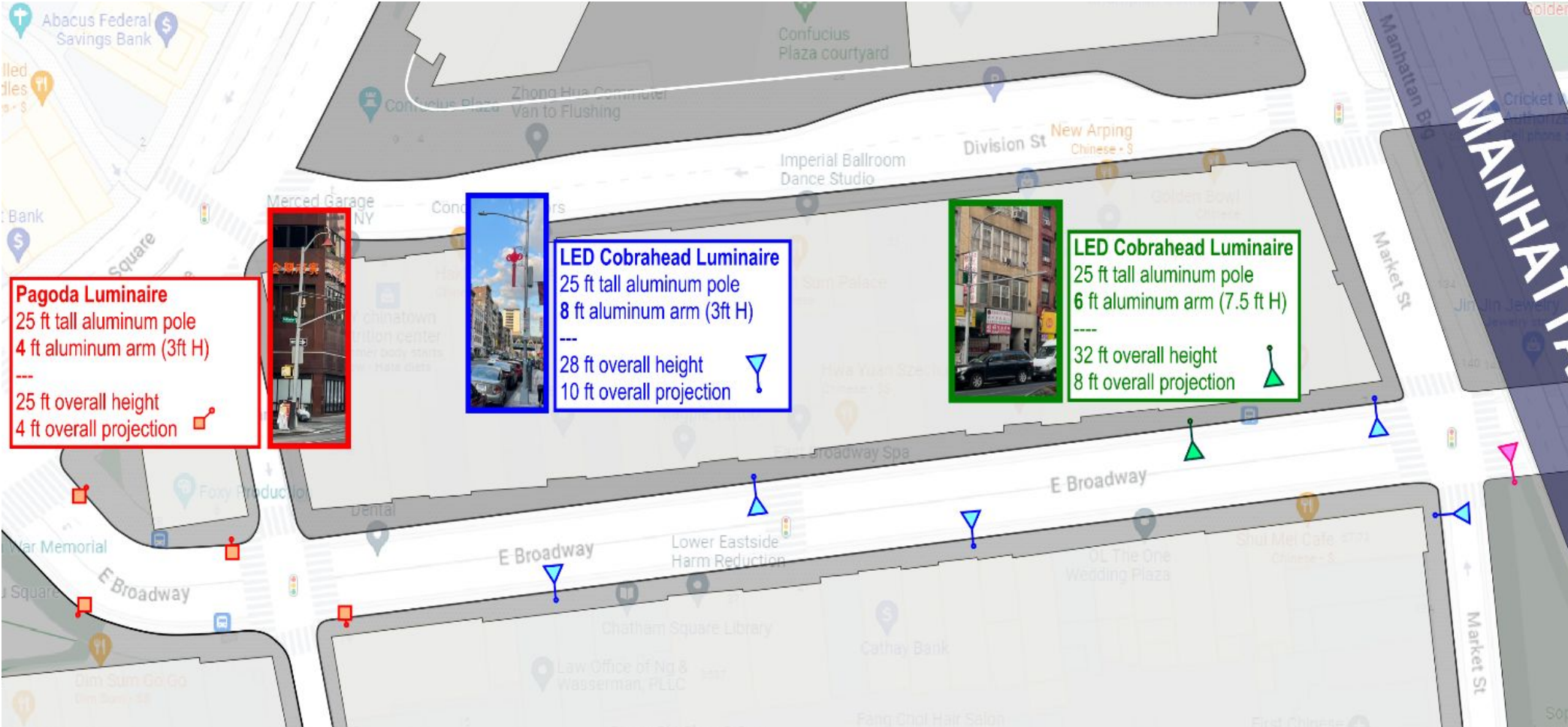
False color HDR photo indicating Luminance in cd/m2.

# ZONE 3

## Lighting Survey

### DOT STREET LIGHTING TYPES AND LOCATIONS ON EAST BROADWAY

	Avg Illuminance (fc)	Uniformity
<b>Roadways</b>		
Collector	1.0 - 1.2	4:1
Local	0.8 - 1.0	4:1
<b>Intersections</b>		
Collector/Collector	2.0 - 2.5	4:1
Collector/Local	1.5 - 2.0	4:1
Local/Local	1.5	4:1
<b>Plazas, Under the EI</b>	2.0	4:1
<b>Pedestrian Sidewalks</b>	0.6 - 0.8	Up to 6:1
<b>Shared Bikeways</b>	0.8 - 1.0	4:1

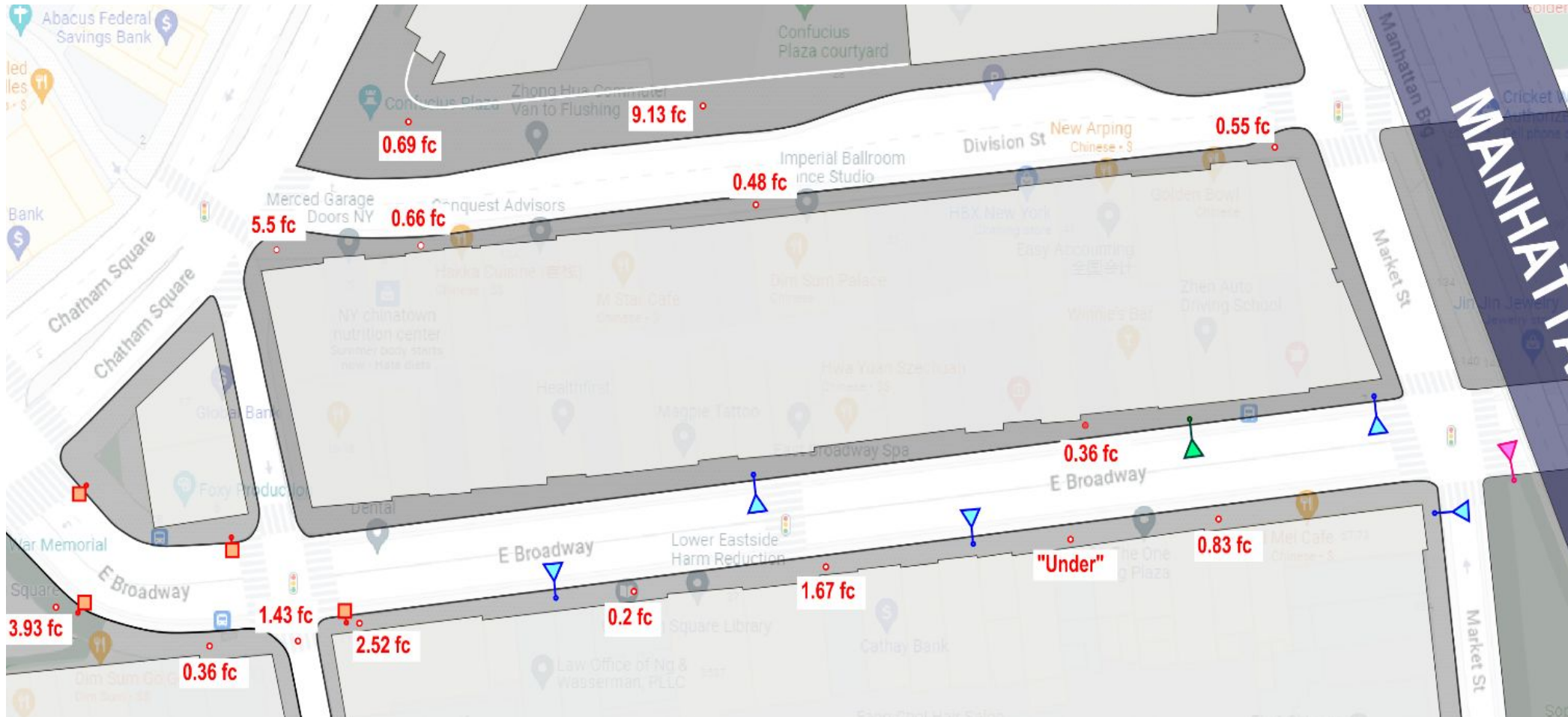


# ZONE 3

## Lighting Survey

### SPOT MEASUREMENTS OF ILLUMINANCE AT THE GROUND

	Avg Illuminance (fc)	Uniformity
<b>Roadways</b>		
Collector	1.0 - 1.2	4:1
Local	0.8 - 1.0	4:1
<b>Intersections</b>		
Collector/Collector	2.0 - 2.5	4:1
Collector/Local	1.5 - 2.0	4:1
Local/Local	1.5	4:1
<b>Plazas, Under the EI</b>	2.0	4:1
<b>Pedestrian Sidewalks</b>	0.6 - 0.8	Up to 6:1
<b>Shared Bikeways</b>	0.8 - 1.0	4:1

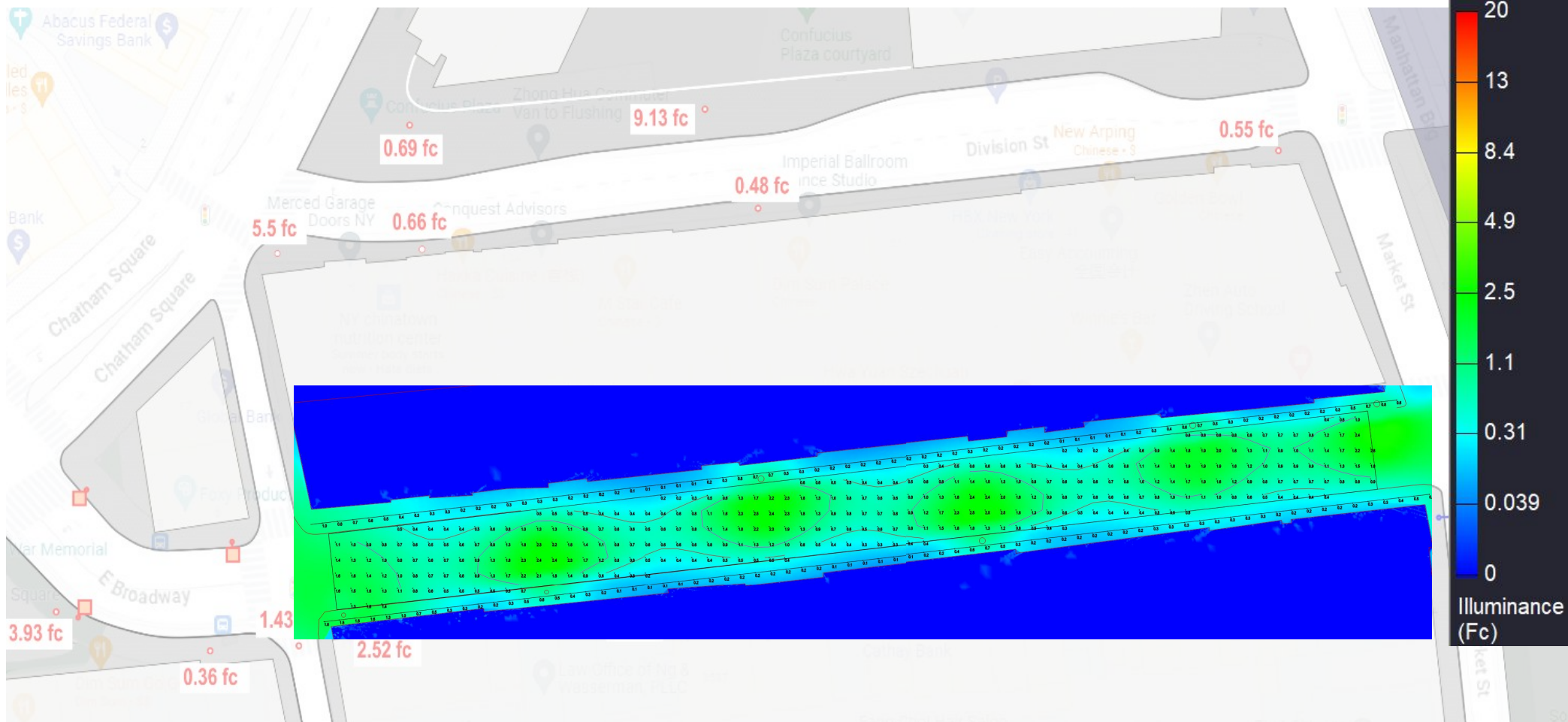


# ZONE 3

## Lighting Survey

### PHOTOMETRIC STUDY OF DOT STREET LIGHTING ALONG EAST BRAODWAY

	Avg Illuminance (fc)	Uniformity
<b>Roadways</b>		
Collector	1.0 - 1.2	4:1
Local	0.8 - 1.0	4:1
<b>Intersections</b>		
Collector/Collector	2.0 - 2.5	4:1
Collector/Local	1.5 - 2.0	4:1
Local/Local	1.5	4:1
<b>Plazas, Under the EI</b>	2.0	4:1
<b>Pedestrian Sidewalks</b>	0.6 - 0.8	Up to 6:1
<b>Shared Bikeways</b>	0.8 - 1.0	4:1

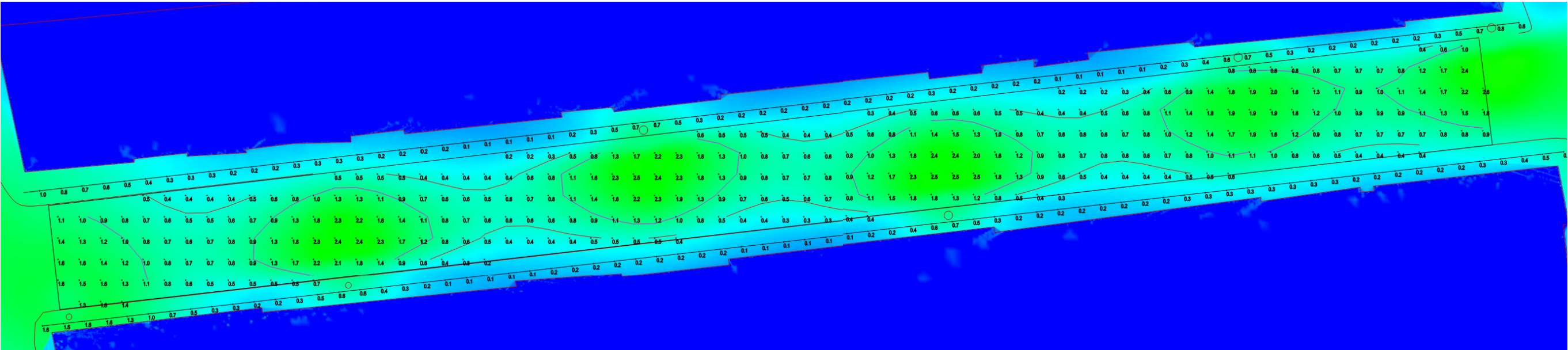


# ZONE 3

## Lighting Survey

PRELIMINARY

PHOTOMETRIC CALCULATION - EAST BROADWAY BETWEEN CATHERINE ST & MARKET ST



Luminaire Schedule								
Symbol	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	
⊕	Lt106305	SDCA3-250I IPS-V	PAGODA	0.810	17518	250	1000	
⊕	Cooper Cobra 81W (110W Max) T	ARCH-S-PA1-80-730-U-T2R-AP-10MSP-PR7	COBRAHEAD	0.810	10653	81.1	567.7	

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Max/Min	Avg/Min
Roadway	Illuminance	Fc	1.0	2.6	0.2	13.0	5.0
Sidewalk-North	Illuminance	Fc	0.3	1.0	0.1	10.0	3.1
Sidewalk-South	Illuminance	Fc	0.4	1.6	0.1	16.0	3.7

