Light Up Lancaster – Final Report

November 2023

WINDWARD
LIGHTING STUDIO

DERCK & EDSON
EST 1940
CAMPUSES DOWNTOWNS ATHLETICS

PROJECT INTRODUCTION

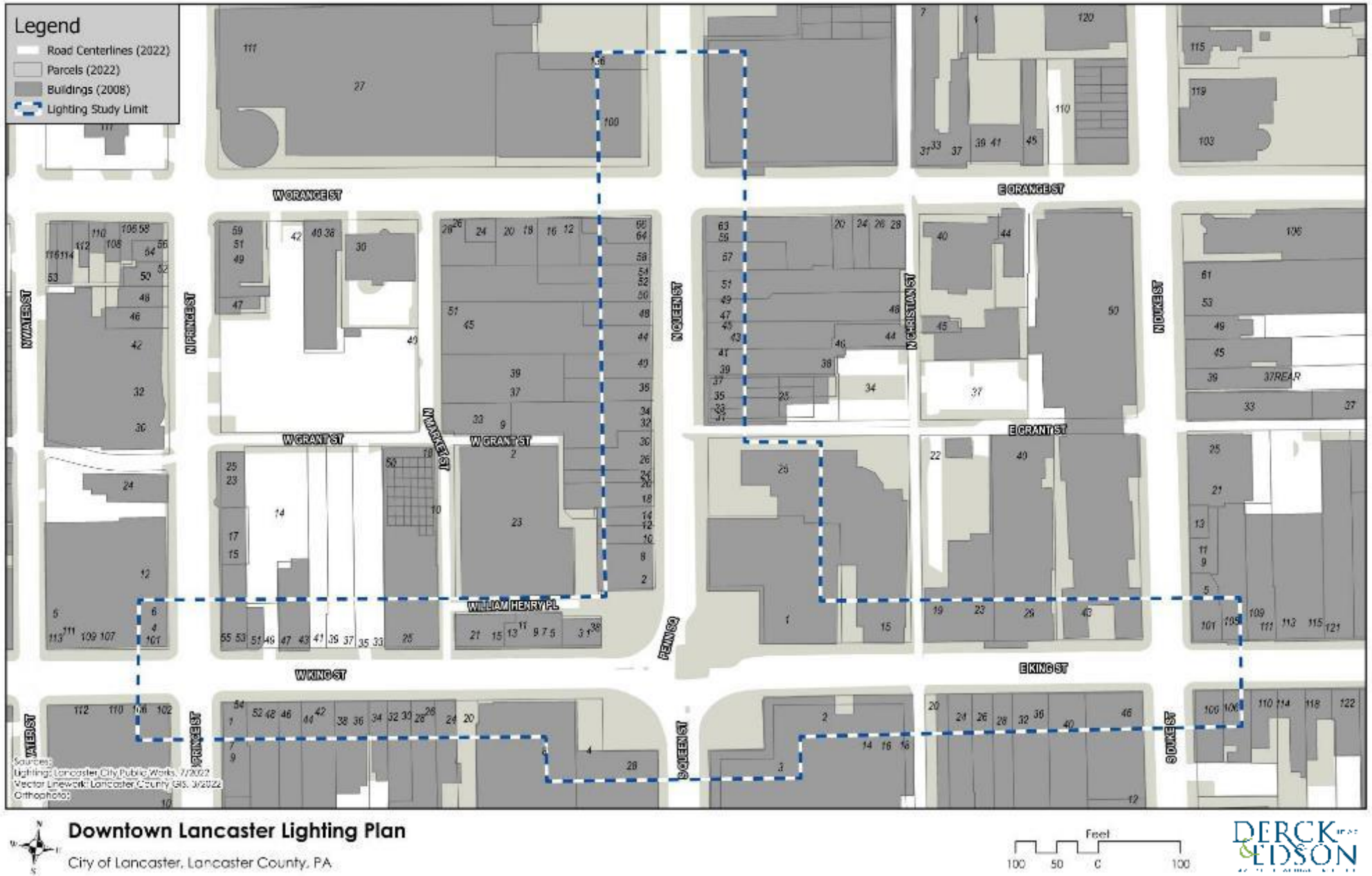
Project Introduction

The Lancaster City Alliance (LCA) along with the Light Up Lancaster Steering Committee assisted Derck & Edson and Windward Lighting Studio in completing a study of a core area within Downtown Lancaster to give recommendations on façade and street lighting improvements.

Celebrating the character of Lancaster City with enhanced lighting

Review of lighting through the lenses of:

- Safety – ability to see to avoid tripping
- Security – sense of security from crimes
- Convenience – orientation and wayfinding; ease of maintenance
- Aesthetics – desire to keep things looking good
  - Visually unify the blocks in the project area
  - Don't isolate the project area… maintain connection with rest of City
  - Lighting improvements should support placemaking; (but that place is not Las Vegas)
- Need appropriate light levels
  - Avoid dark spots and excessive brightness
  - Minimize light pollution
  - Balance horizontal and vertical illumination, uniformity, comfort, etc.
- Need to establish expectations
  - Design of façade lighting will need to take place on a per building basis; this study is providing general recommendations
  - Who is responsible for implementation and operational costs?
  - Maintenance responsibility



Downtown Lancaster Lighting Plan

City of Lancaster, Lancaster County, PA

Feet
100 50 0 100

PROJECT AREA

ASSESSMENT

Observations

- General lighting impressions
  - Overall, fairly comfortable
  - Some areas of non-uniformity – (relatively high or low compared to the overall average)
  - Some very interesting architecture and details to highlight in the study area
- Storefronts and building entrances
  - Wide variety of lighting styles, colors and intensities
  - Some active, some inactive
  - Some contributing to the majority of the sidewalk illumination
  - Some windows over lit
  - Some windows creating glare

Lighting on E King Street

Lighting at NW Corner of Penn Square

Observations

- Some areas of glare
  - Floodlights from buildings
- Streetlights
  - Not operating in all locations
  - Color mis-match
  - Providing some vertical illumination
  - Decent distribution, where working
  - Some blocked by trees

Floodlights along West King Street

Non-functioning lighting on W. King Street

Lighting on East King Street partially blocked by existing trees

Observations

- Some spots with very high lights levels
  - Restaurant at 29 E. King St.
  - Masonry connector between Fulton Buildings
  - Alley next to Fulton Building
  - N. Queen Street storefront (track lighting)

Lighting along Alley at Fulton Bank on East King Street

Existing Lighting at 29 East King Street

Lighting at Masonry Connector on E. King Street

Observations: areas with mix of good and bad

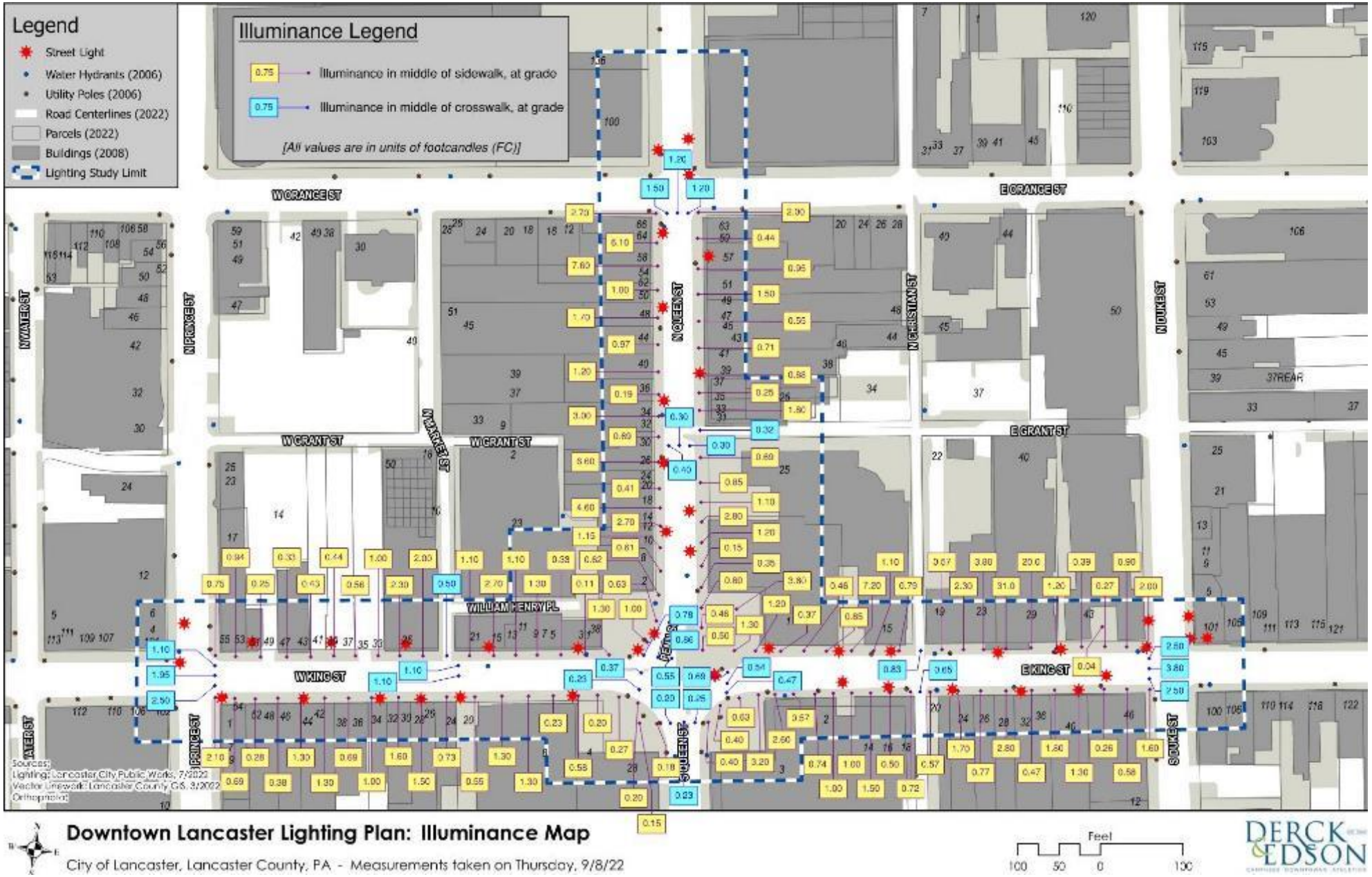
- Griest Bldg. at Penn Square
  - Comfortable at street level; lighting at crown is decent, perhaps too bright; no lighting of main building trunk.

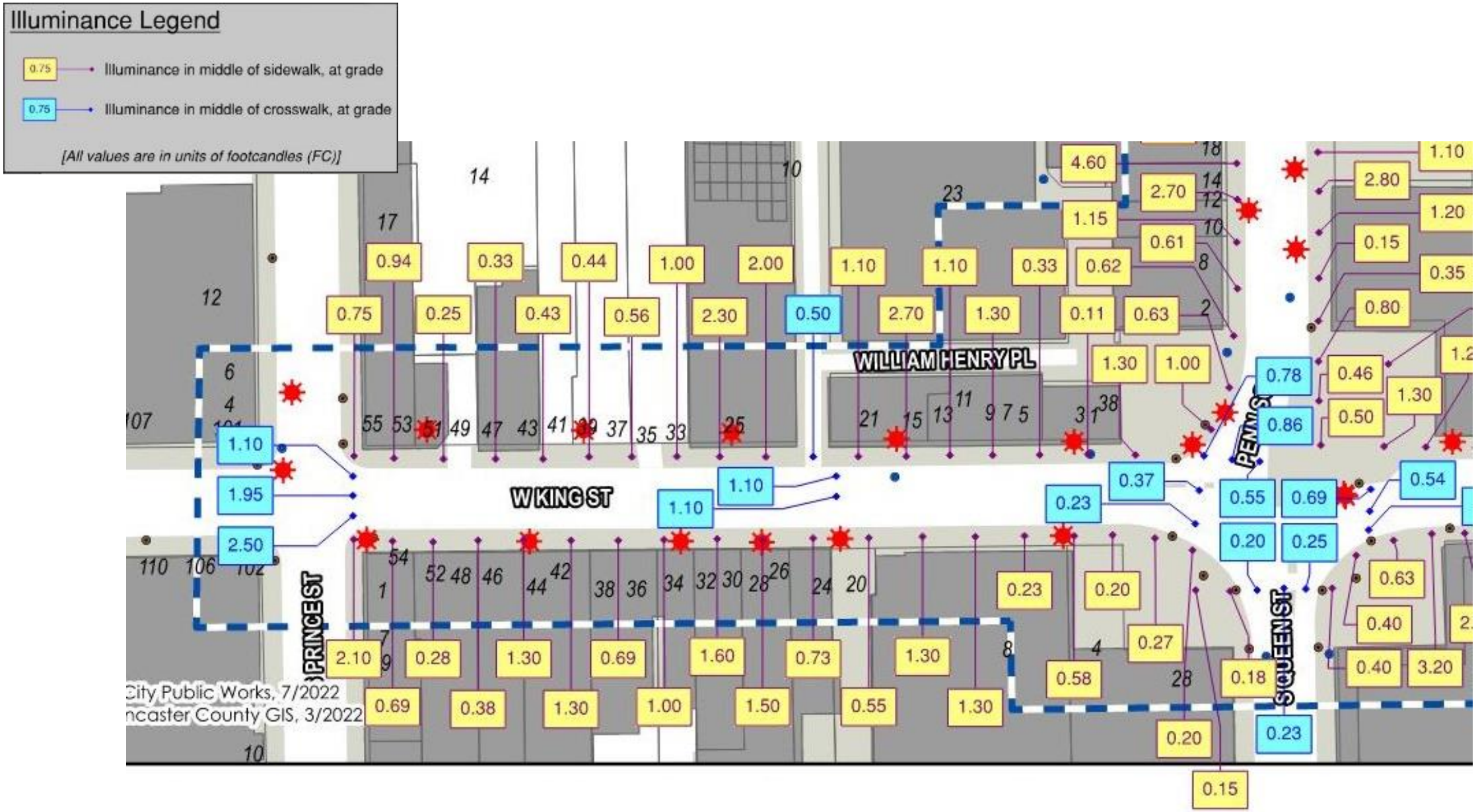
Lighting at Griest Building

Lighting at Yorgos on North Queen

Lighting at Yorgos on North Queen

- North end of N. Queen Street
  - Nice design at upper floors. Some fixtures not working. Stark color difference between lights.


Legend
Street Light
Water Hydrants (2006)
Utility Poles (2006)
Road Centerlines (2022)
Parcels (2022)
Buildings (2008)
Lighting Study Limit
Illuminance Legend
0.75 Illuminance in middle of sidewalk, at grade
0.75 Illuminance in middle of crosswalk, at grade
[All values are in units of footcandles (FC)]
W ORANGE ST
E ORANGE ST
W GRANT ST
E GRANT ST
W KING ST
E KING ST
WILLIAM PENRY PL
N WATER ST
N PRINCE ST
N QUEEN ST
N CHRISTIAN ST
N DUKE ST
S WATER ST
S PRINCE ST
S QUEEN ST
S DUKE ST
Sources:
Lighting: Lancaster City Public Works, 7/2022
Vector Linework: Lancaster County GIS, 3/2022
Orthophotos
Downtown Lancaster Lighting Plan: Illuminance Map
City of Lancaster, Lancaster County, PA - Measurements taken on Thursday, 9/8/22
Feet
100 50 0 100
DERCK & EDSON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WILLIAM HENRY PL
W KING ST
PRINCE ST
QUEEN ST
City Public Works, 7/2022
ncaster County GIS, 3/2022

ASSESSMENT

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0.75 — Illuminance in middle of sidewalk, at grade

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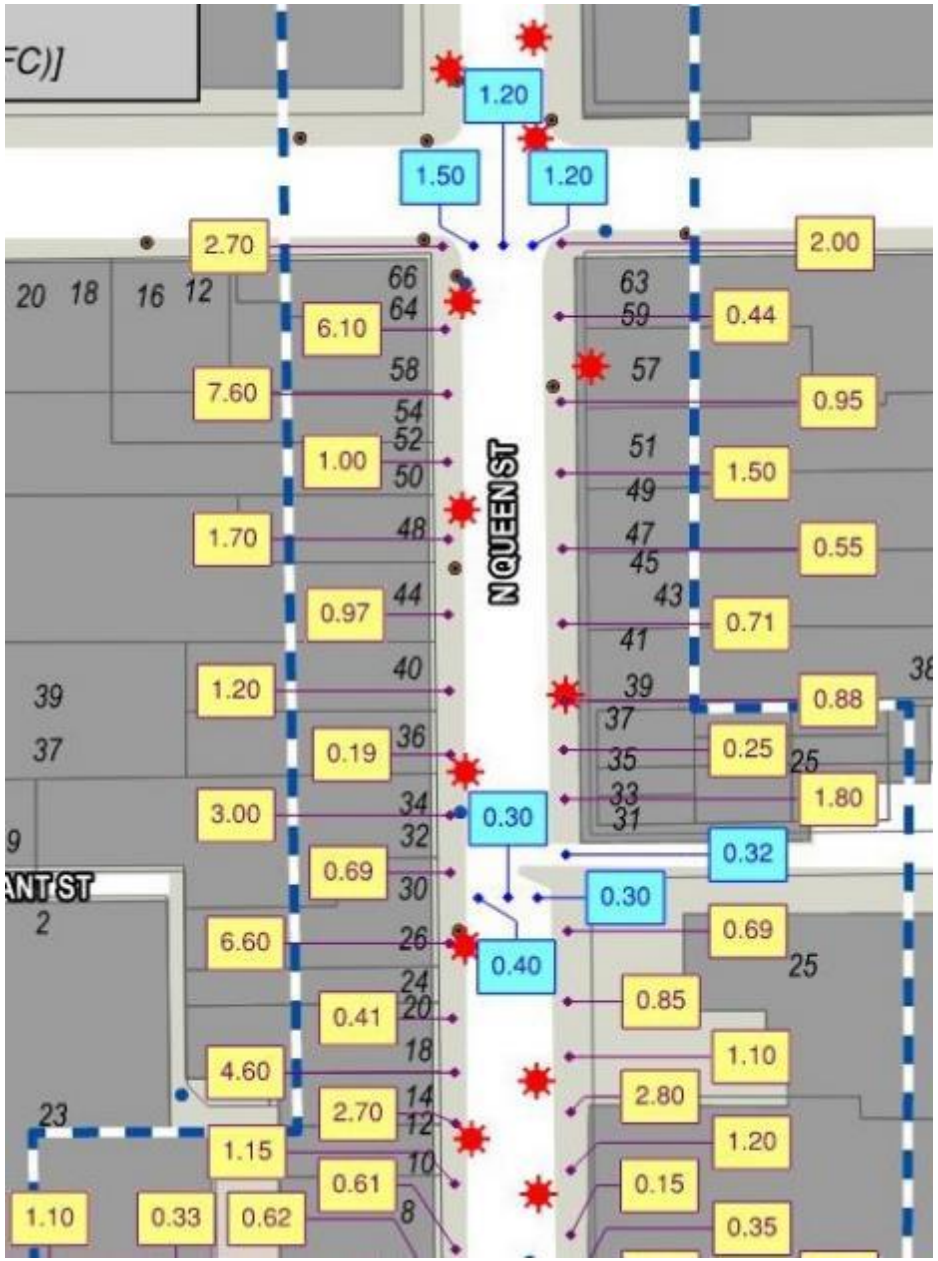

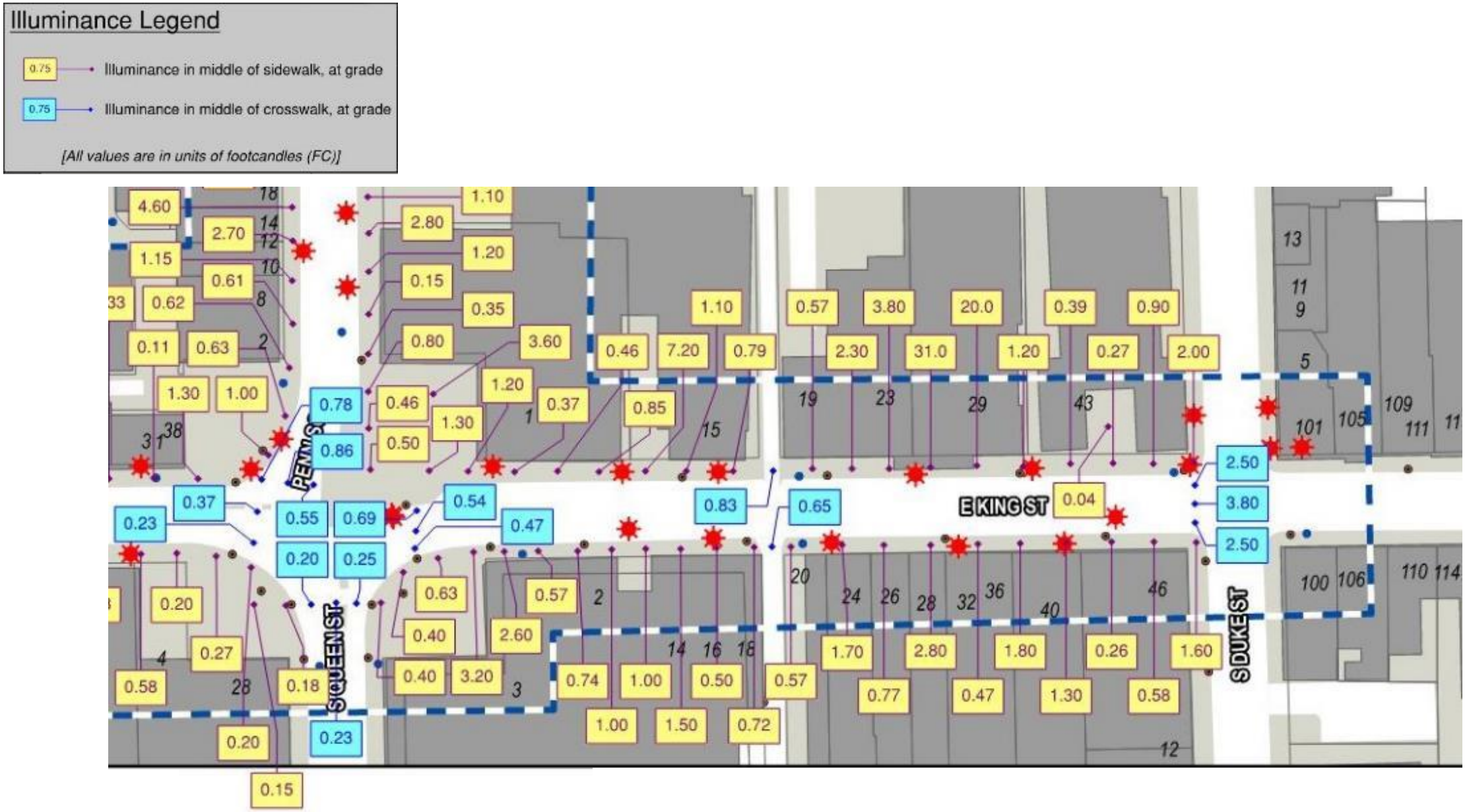
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Illuminance in middle of crosswalk, at grade
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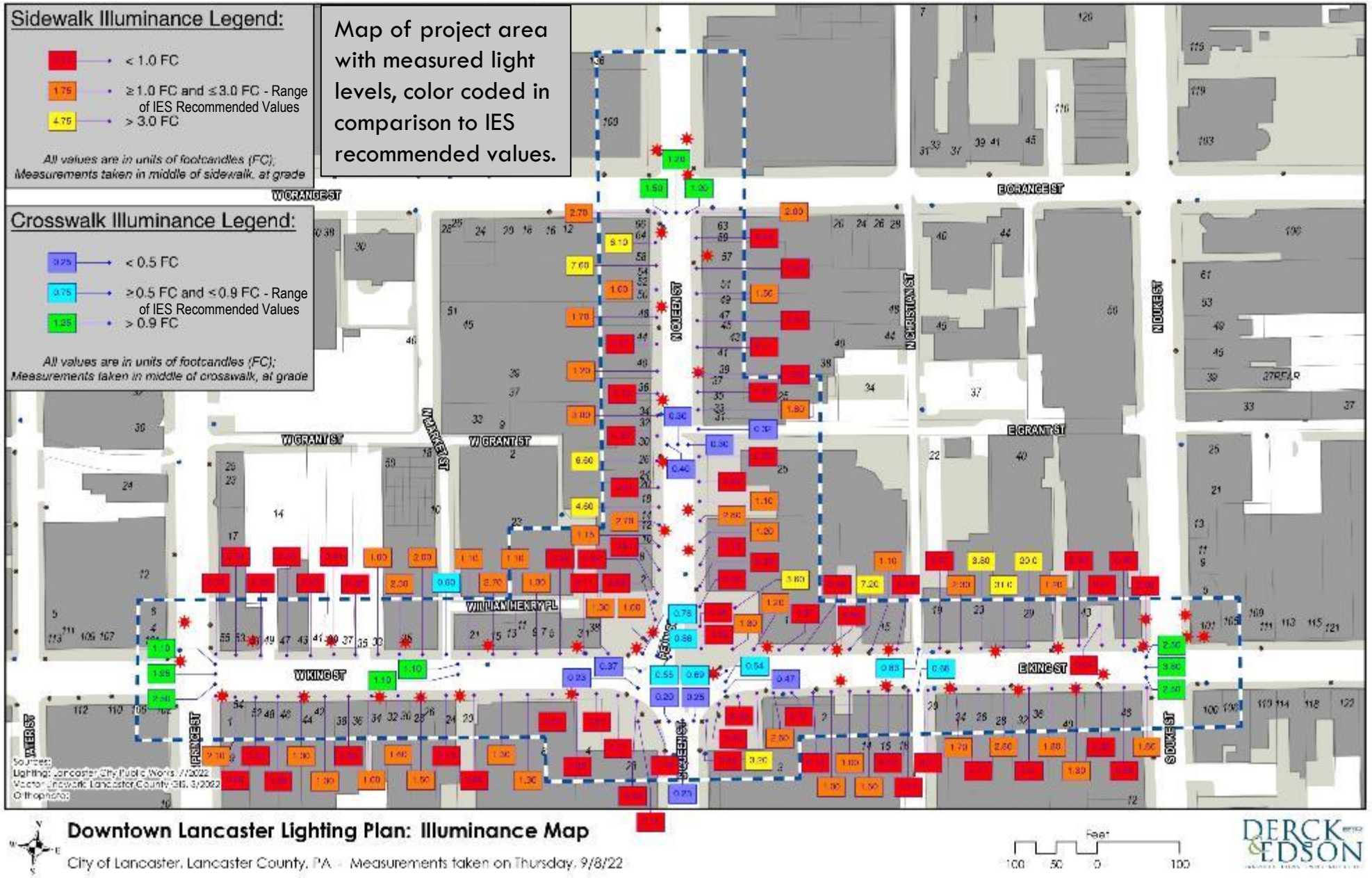
PENN ST
QUEEN ST
E KING ST
DUKE ST

Summary of Illuminance Measurements

STREET	ELEMENT	AVERAGE	MAXIMUM	MINIMUM	AVG/MIN	MAX/MIN
W. King St.	sidewalk - north side	0.98	2.70	0.11	8.89	24.55
	sidewalk - south side	0.93	2.10	0.20	4.63	10.50
	crosswalk - at Prince St.	1.85	2.50	1.10	1.68	2.27
	crosswalks - at Market St.	0.90	1.10	0.50	1.80	2.20
N. Queen St.	sidewalk - west side	2.58	7.60	0.19	13.56	40.00
	sidewalk - east side	1.01	2.80	0.15	6.76	18.67
	crosswalk - at Orange St.	1.30	1.50	1.20	1.08	1.25
	crosswalks - at Grant St.	0.33	0.40	0.30	1.10	1.33
E. King St.	sidewalk - north side	4.58	31.00	0.27	16.94	114.81
	sidewalk - south side	1.14	2.80	0.26	4.38	10.77
	crosswalks - at Christian St.	0.74	0.83	0.65	1.14	1.28
	crosswalk - at Duke St.	2.67	3.80	1.70	1.57	2.24
Penn Square	sidewalk - NW quadrant	1.15	2.20	0.62	1.85	3.55
	sidewalk - NE quadrant	1.31	3.60	0.46	2.85	7.83
	sidewalk - SE quadrant	1.16	3.20	0.40	2.89	8.00
	sidewalk - SW quadrant	0.20	0.27	0.15	1.33	1.80
	crosswalk - at W. King St.	0.46	0.78	0.23	2.00	3.39
	crosswalk - at N. Queen St.	0.71	0.86	0.55	1.28	1.56
	crosswalk - at E. King St.	0.57	0.69	0.47	1.21	1.47
	crosswalk - at S. Queen St.	0.23	0.25	0.20	1.13	1.25

IES (Illuminating Engineering Society) Recommendations:

- Assuming:
  - Lighting zone LZ-3
  - Medium to high pedestrian activity
- Sidewalks adjacent to architecture/hardscape: 1-3 footcandles (FC) average
- Crosswalks: 0.5-0.9 FC average


Sidewalk Illuminance Legend:
< 1.0 FC
≥ 1.0 FC and ≤ 3.0 FC - Range of IES Recommended Values
> 3.0 FC
All values are in units of footcandles (FC); Measurements taken in middle of sidewalk, at grade
Crosswalk Illuminance Legend:
< 0.5 FC
≥ 0.5 FC and ≤ 0.9 FC - Range of IES Recommended Values
> 0.9 FC
All values are in units of footcandles (FC); Measurements taken in middle of crosswalk, at grade
Map of project area with measured light levels, color coded in comparison to IES recommended values.
W ORANGE ST
E ORANGE ST
N QUEEN ST
N CHRISTIAN ST
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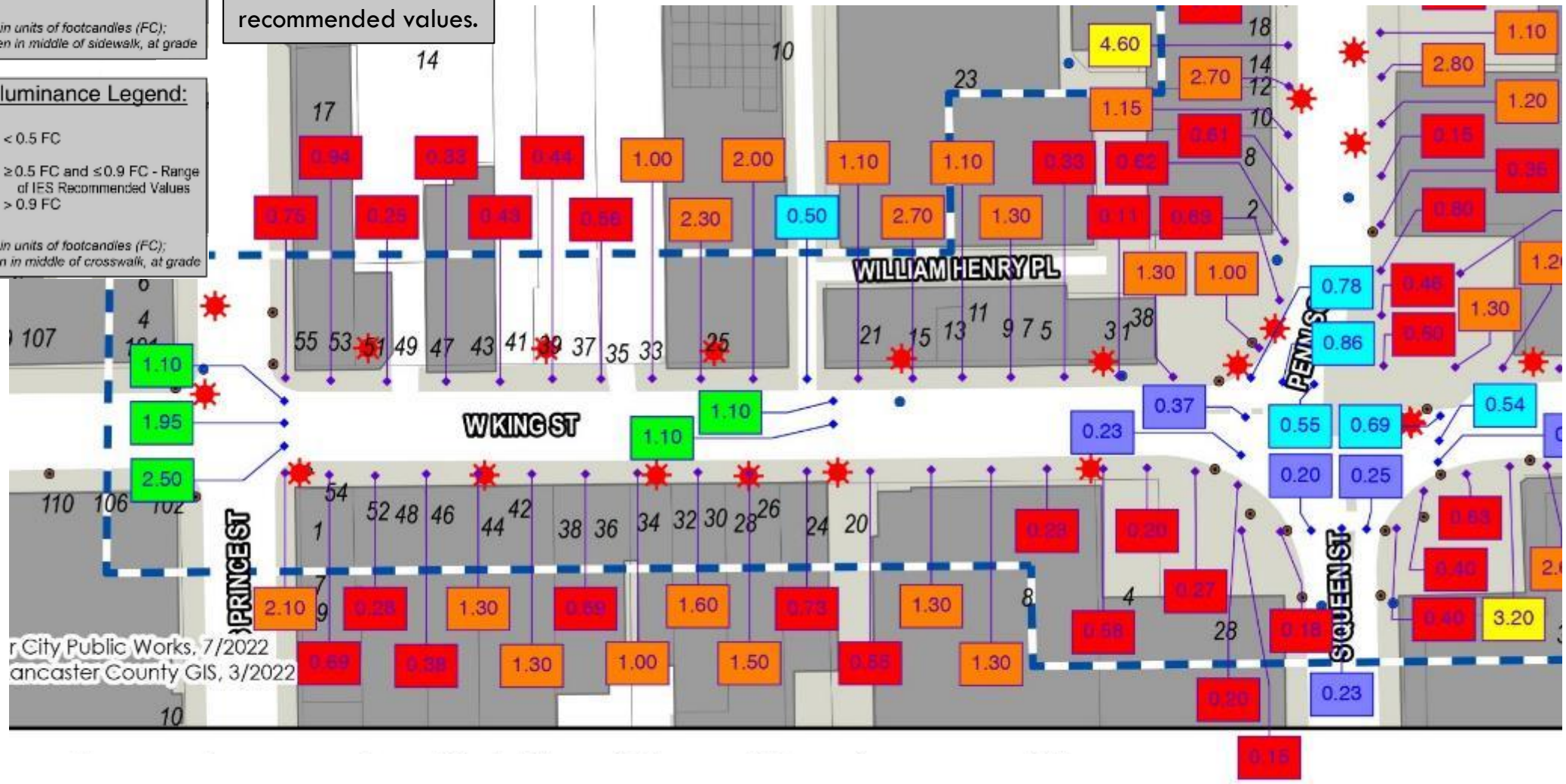

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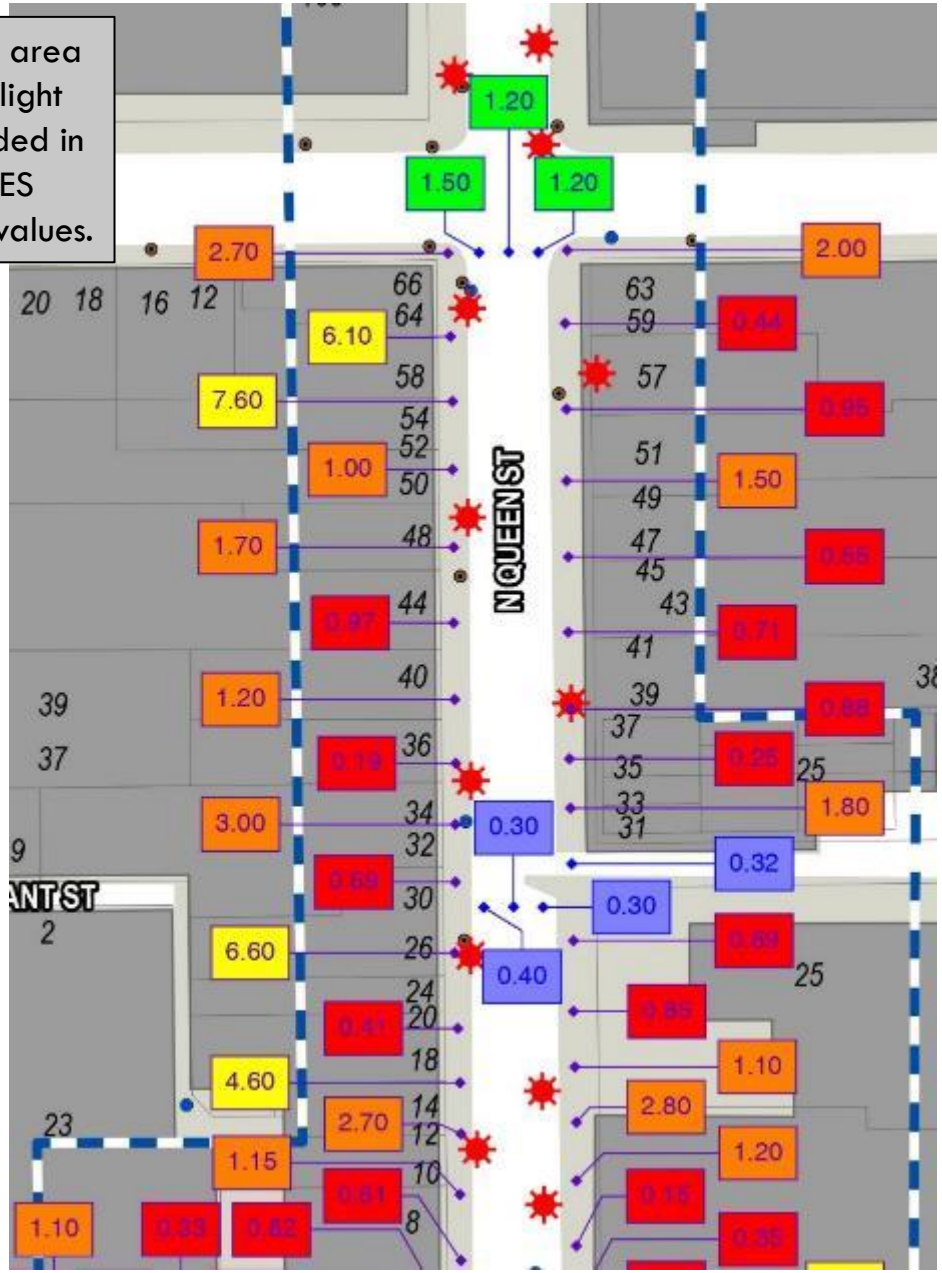

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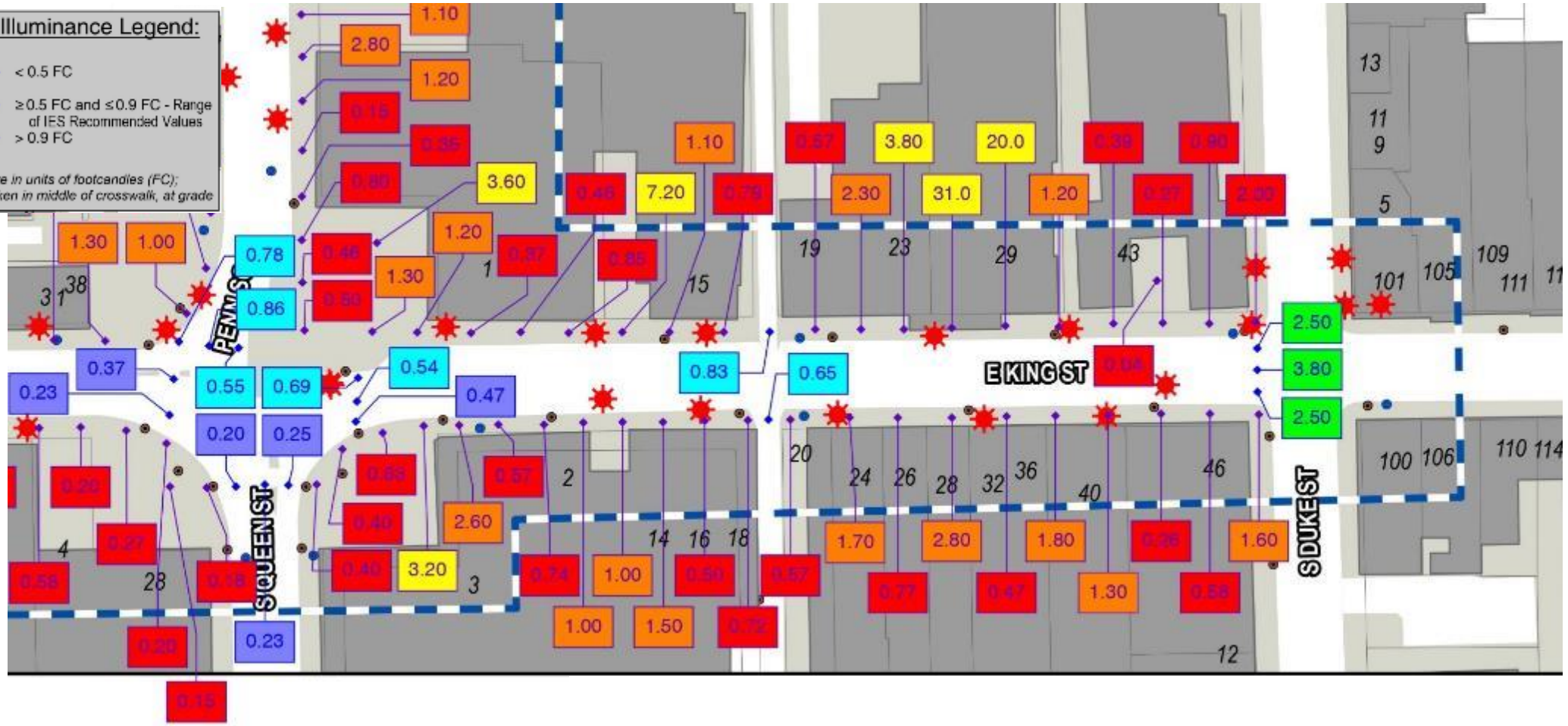
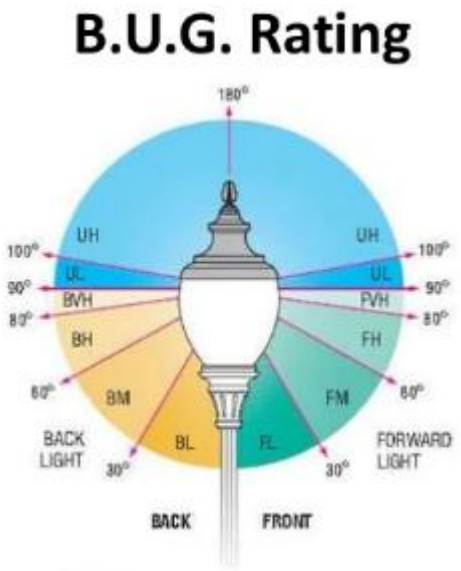
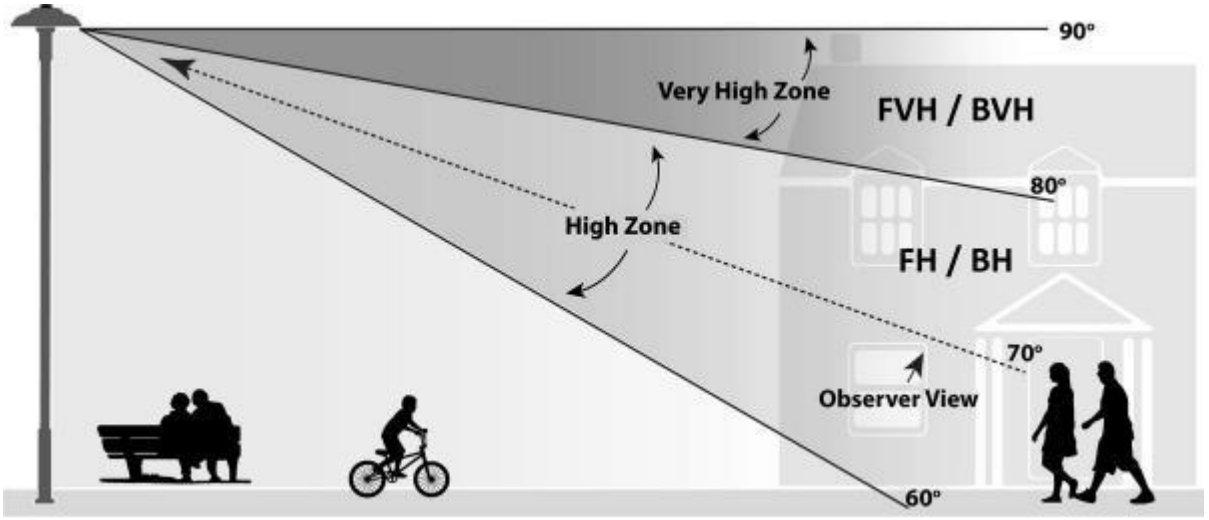


INFORMATIONAL

Lighting in an Urban Environment

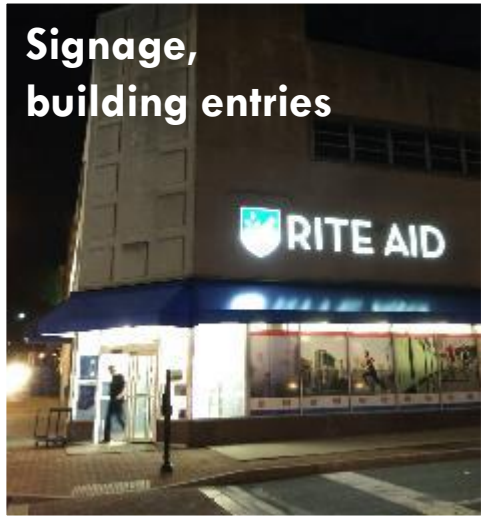
- Light pollution: An inappropriate and/or excessive use of light
- Skyglow: Brightening of night sky over inhabited areas
- IDA and IES recognize need for light in cities; have developed guidelines for proper usage
  - Lighting zones – 5 zones (LZ0 through LZ4) to classify land use with appropriate light levels for each
  - "BUG" classification – Backlight, Uplight, and Glare

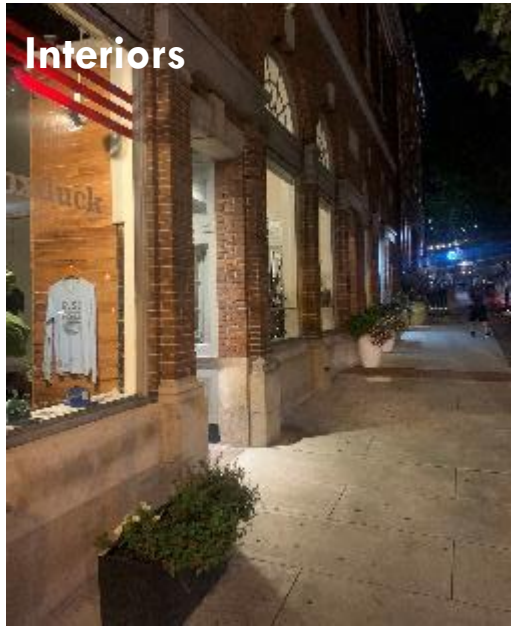


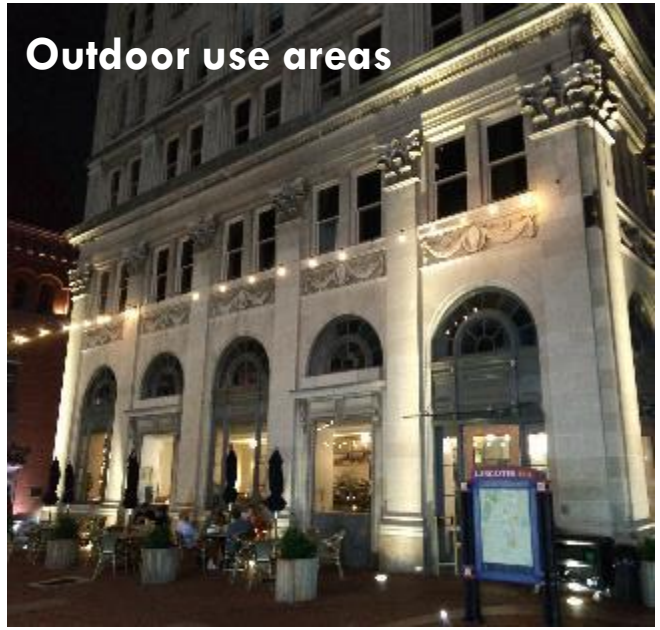


Lighting in an Urban Environment

- Project site is in the center of the city
  - Certain amount of light pollution will happen
  - Purposely want light on vertical surfaces
  - Lighting for humans (safety, security, aesthetics, etc.)
  - Lighting is applied in many layers

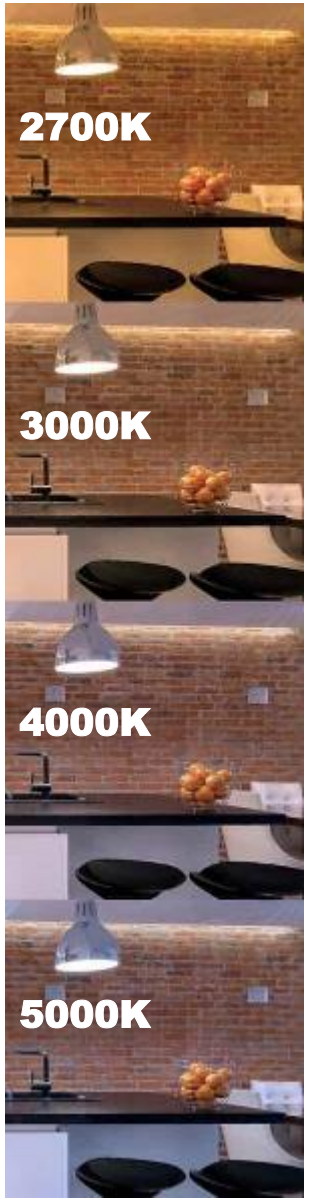


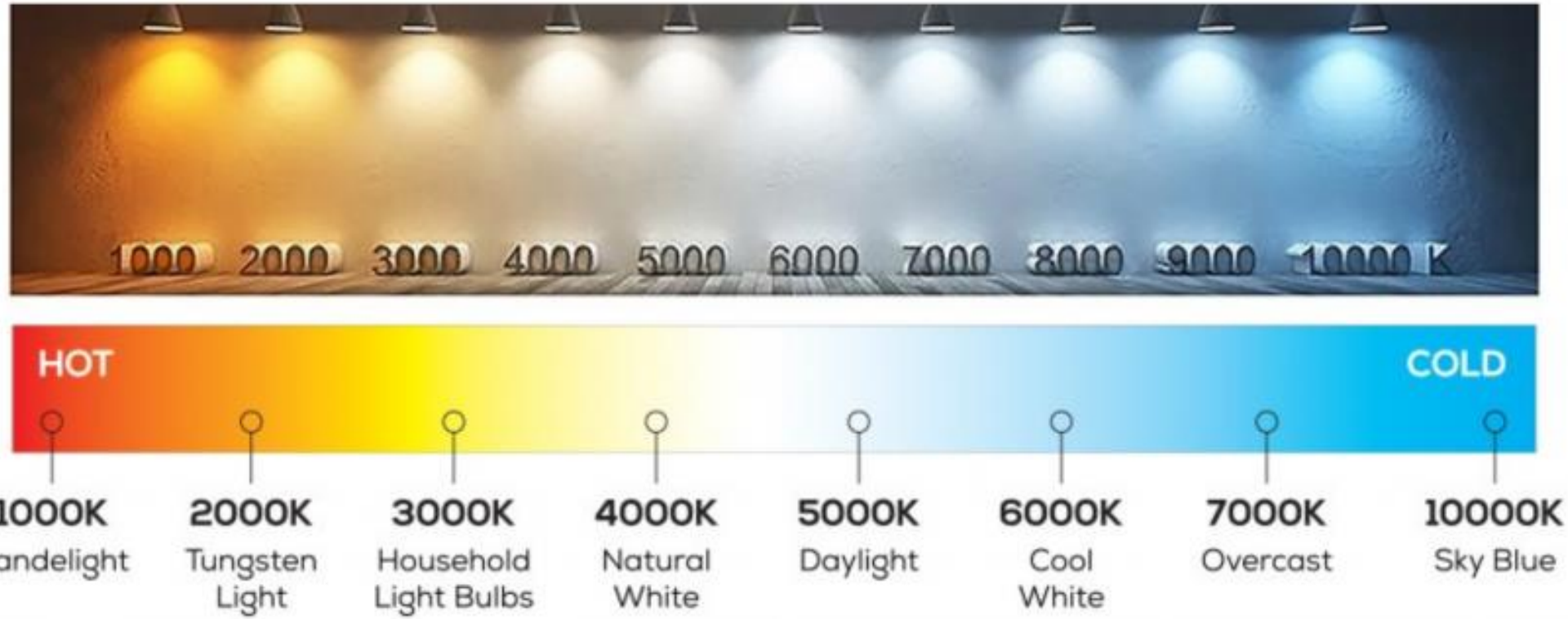




Correlated Color Temperature (CCT)

- Scale to show the "whiteness" of a light source
- Warm vs. Cool
- In units of Kelvin (K)
- For Lancaster, we recommend 3000K LED

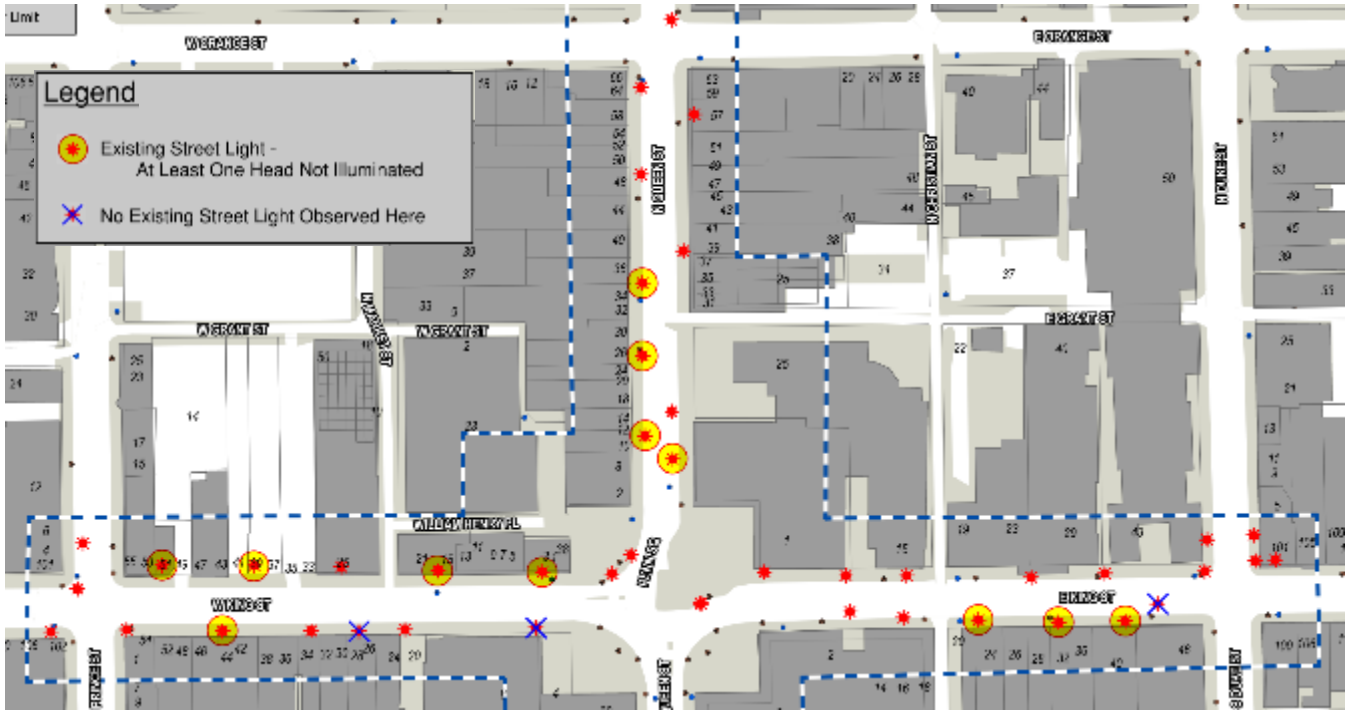




RECOMMENDATIONS

Recommendations for Existing Street Lights

- Short Term – Maintenance Concerns
  - Fix the fixtures that are not working
  - Replace the light sources that do not match colors
  - Continue to trim tree branches
  - Replace light fixtures/poles that are missing



Map of existing street lights not working.

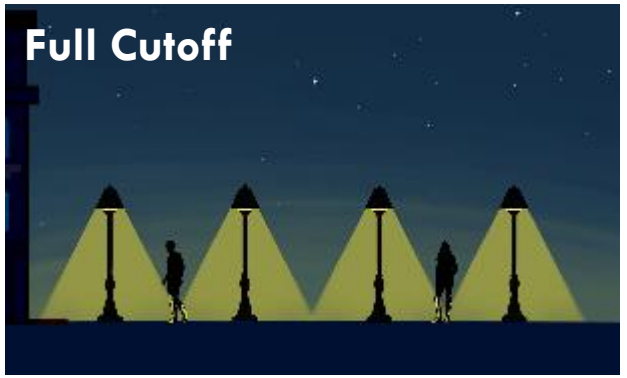
Mis-matched light colors

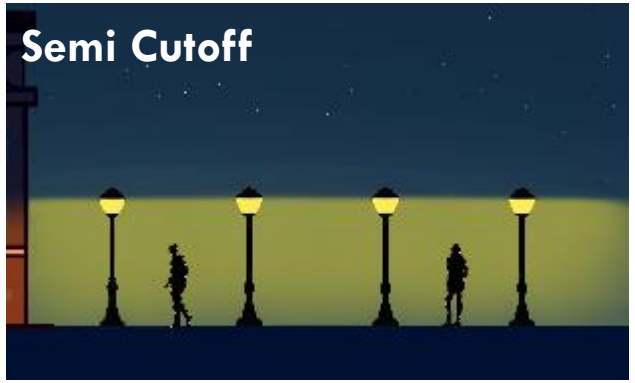
Missing light fixture

Trees partially blocking street lights on E. King Street

Recommendations for Existing Street Lights

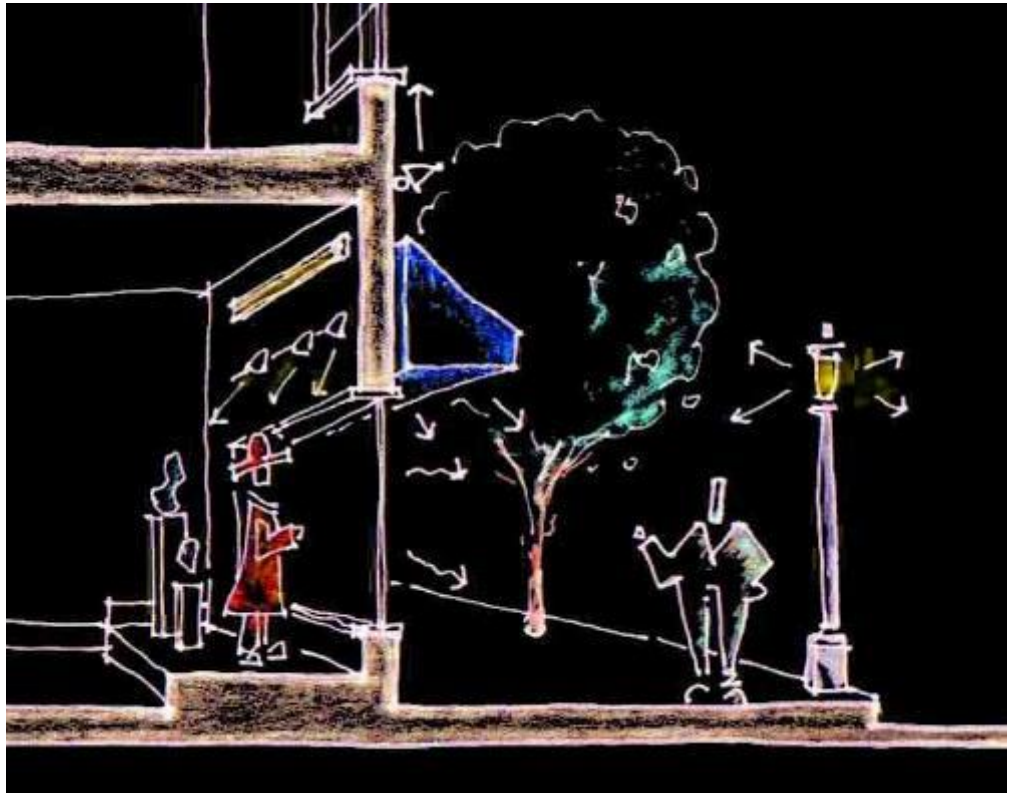
- Long Term – Consider replacement of light fixtures
  - Keep existing poles, spacing
  - Propose using semi-cutoff optics with soft upward gradation
  - Specific fixture selection depends on many factors
  - Add two fixtures to SW corner of Penn Square
  - Add one or two fixtures to SE corner of Penn Square





Lighting Inside Storefronts

- Storefront light during evening:
  - Is simply welcoming
  - Adds to ambience of the street and vertical brightness along the blocks.
  - Provides ambient lighting to the adjacent sidewalk



Lighting Inside Storefronts

- Storefront light during evening:
  - First floor windows should be lit even when business is not open. Recommend window areas be lit from dusk until 8 or 9 in the evening for wintertime and/or weeknights; or until 10pm in the summertime/weekends. Pedestrians can 'window shop' or understand the business even when not open – *it is free advertising*.

Lighting Inside Storefronts

- Storefront light during evening:
  - Lighting should be varied within the window
  - Encourage merchants to light blade signs
  - If possible, provide contrast from window lighting to store lighting

Lighting Inside Storefronts – (continued)

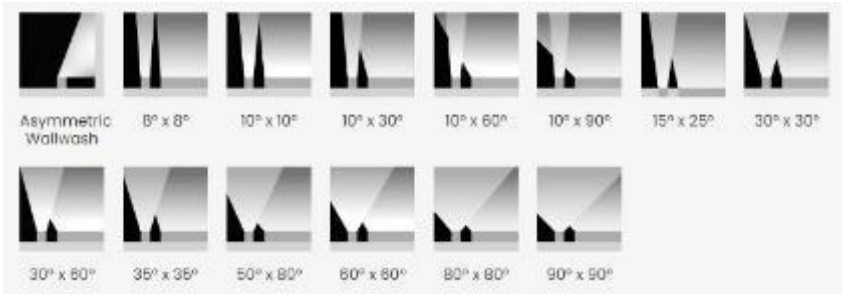
- Light source should not be visible and create glare
- Vary lighting levels within window to emphasize key elements of interest. Changing displays and lighting levels keeps the windows engaging.

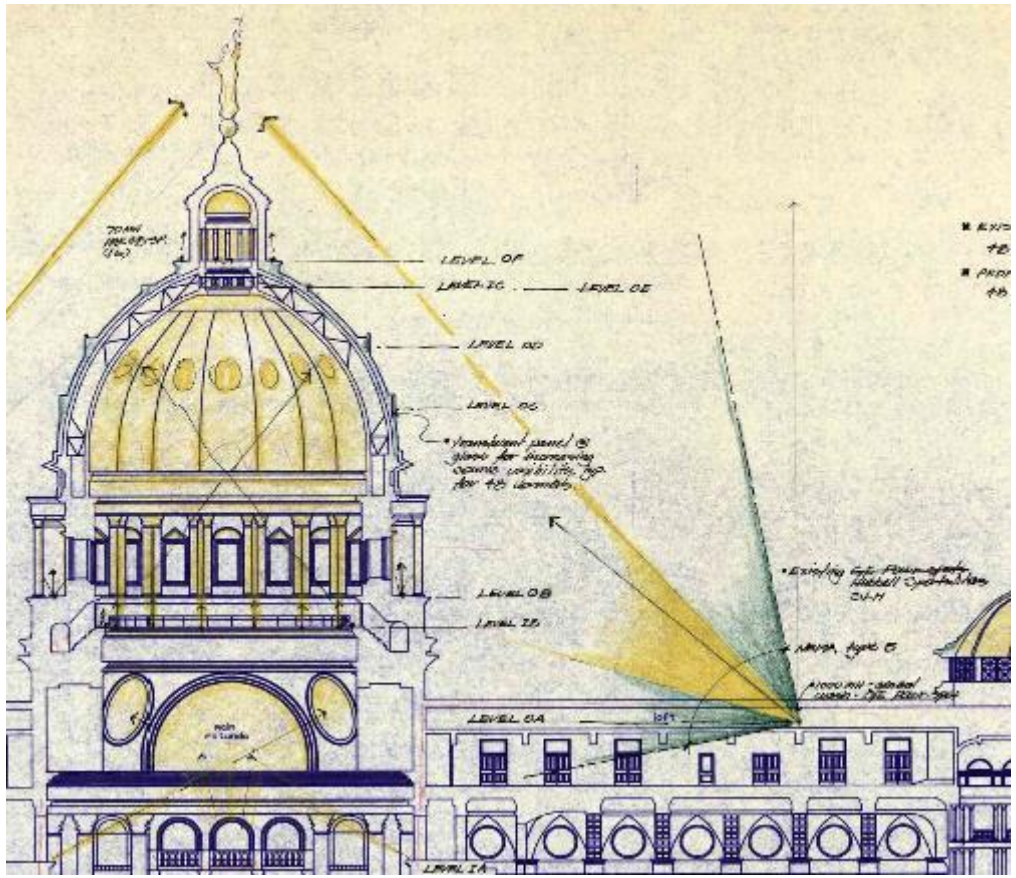
Lighting Inside Storefronts – (continued)

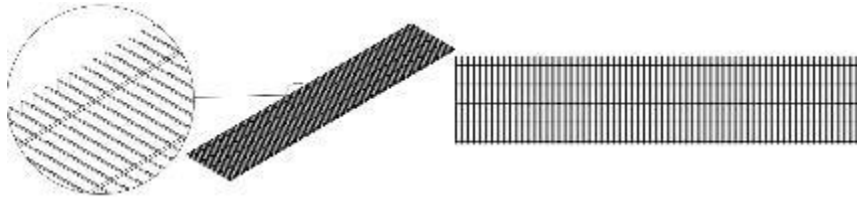
- Entries and alcoves should feel safe and comfortable. Ideally keeping lit until 10 – 11 in the evenings.
- Automatic controls can be used to turn off/dim lights late at night, for the storefronts and for the entries/alcoves.

Recommendations for Building Façade Illumination

- How can we limit sky glow/light pollution?
  - Limit spill light
    - Proper aiming
    - Precise optics
    - Light-shielding accessories
  - Proper amount of light
  - Use of controls







Recommendations for Building Façade Illumination

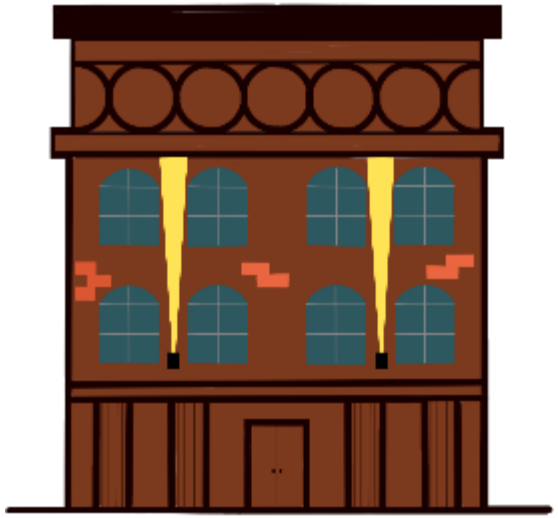
Lighting Techniques – note façade is full elevation from streetline to roofline

1. Narrow Uplight
2. Linear Graze
3. Silhouette
4. Front Floodlighting
5. Up/Down Sconce
6. Decorative Sconce
7. Downlighting
8. Window Blade

FAÇADE LIGHTING TECHNIQUES

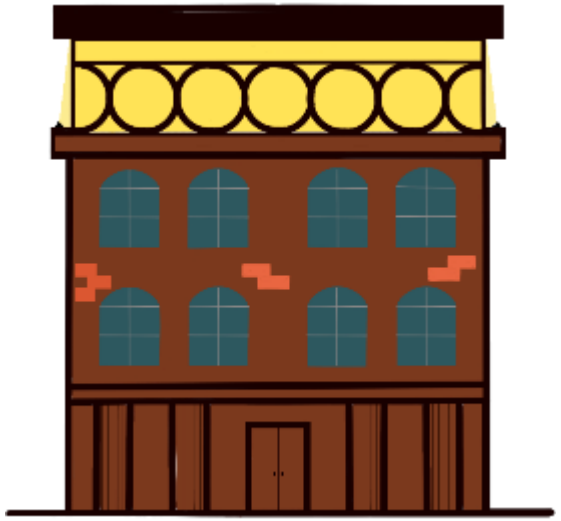
Technique #1 – Narrow Uplight

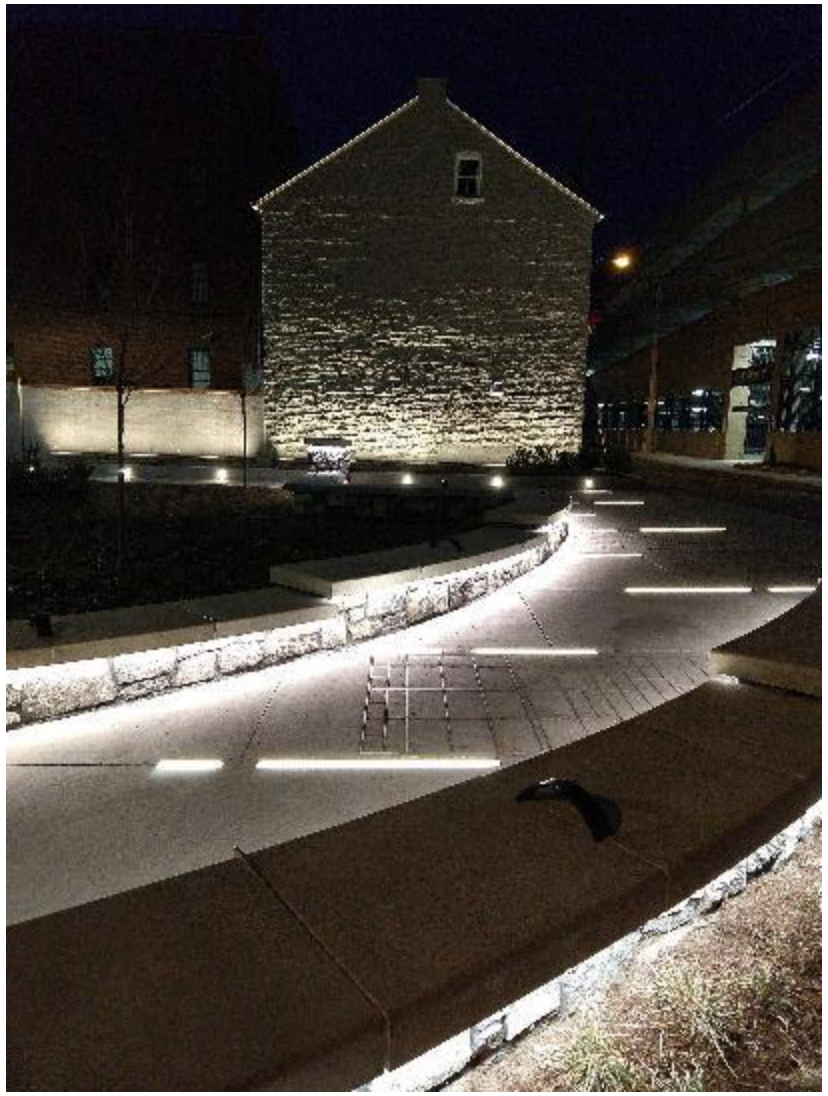
- Narrow beam of light, aimed upward
- Used to accent vertical elements of the architecture and draw the eye upwards
- Will also illuminate the underside of projecting elements
- For our project, typically recommend to be mounted to wall, above ground level
    - Could be in-grade, for right application



Technique #2 – Linear Graze

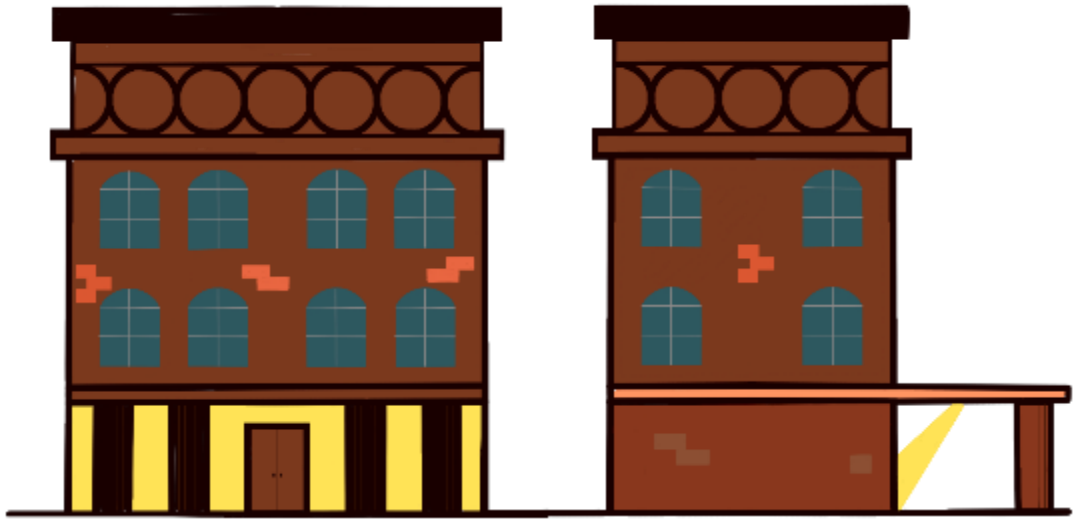
- Continuous line of light, close to a vertical surface
- Used to create a sharp delineation and accent horizontal elements
- Grazing light is useful for picking up texture in material
- For our project, often used at cornice or other shallow ledges





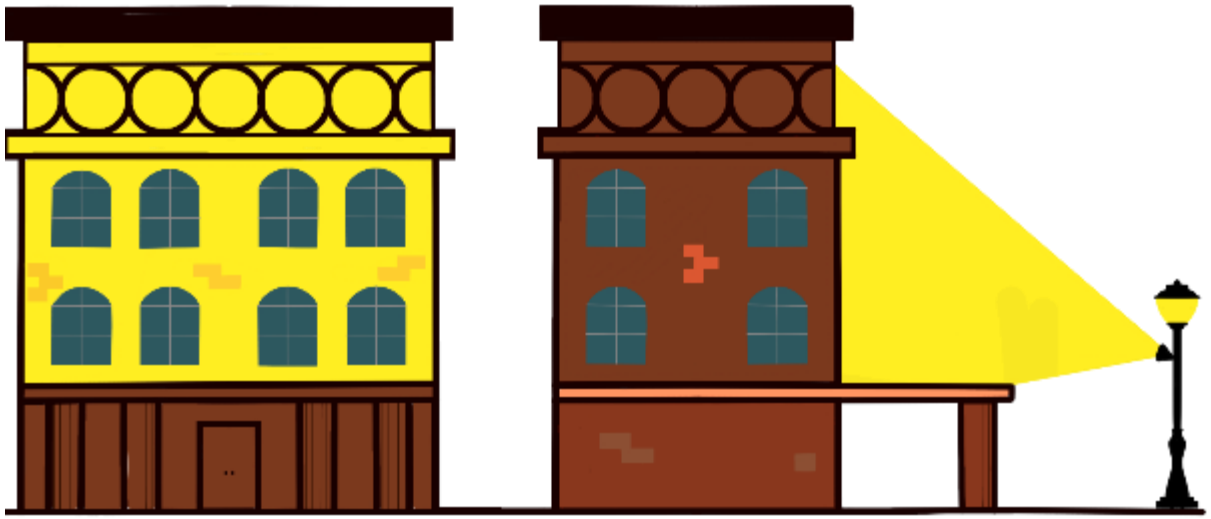
Technique #3 – Silhouette

- A wash of light across a vertical surface that has smaller elements in front of it; puts the front of smaller elements into shadow
- Accentuates the form or outline of the silhouetted elements
- Could also be accomplished via a glowing or backlit surface in the background
- For our project, typically recommended where there are columns in front of a larger, empty plane



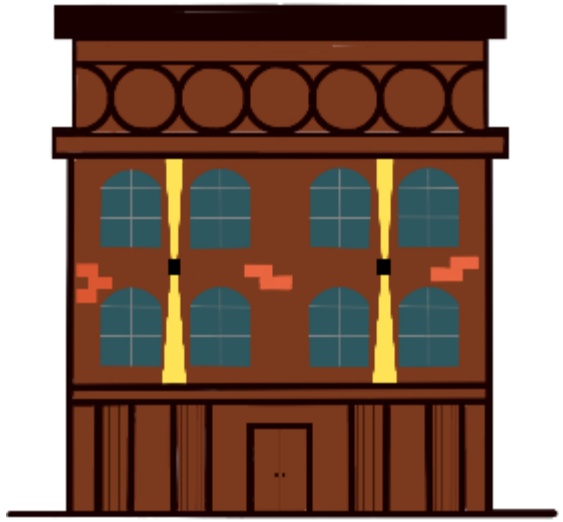
Technique #4 – Front Floodlighting

- Use of a floodlight with a wide distribution, mounted farther back from a surface to cover a large area
- Provides a more uniform distribution of light across a surface
- May be less expensive than other techniques due to fewer fixtures needed
- For our project, floodlights could be mounted to existing street light poles or onto outcroppings from the building, such as a canopy



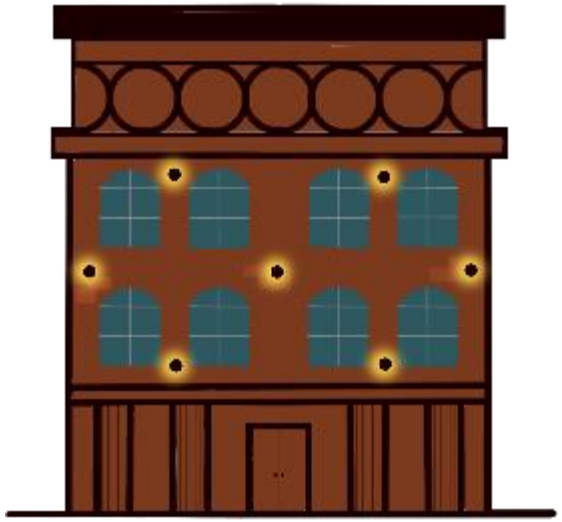
Technique #5 – Up/Down Sconce

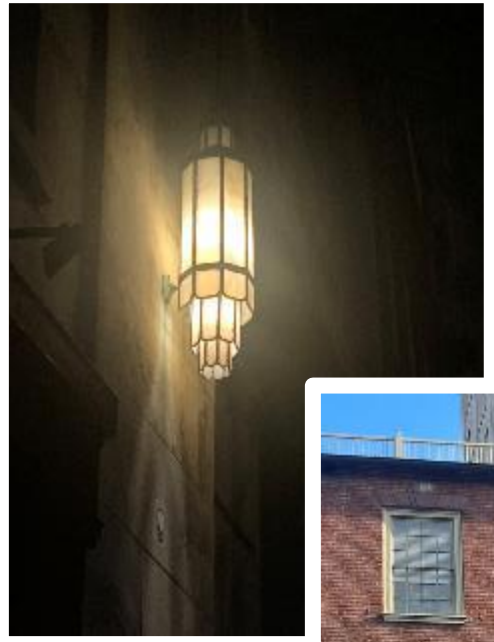
- Wall mounted fixture providing beams of light upward and downward, typically in symmetric patterns
- Often used to accent vertical elements of the architecture and draw the eye upward
- Could also be used to create a pattern with light across a flat plane
- For our project, typically recommended towards the middle of the facade

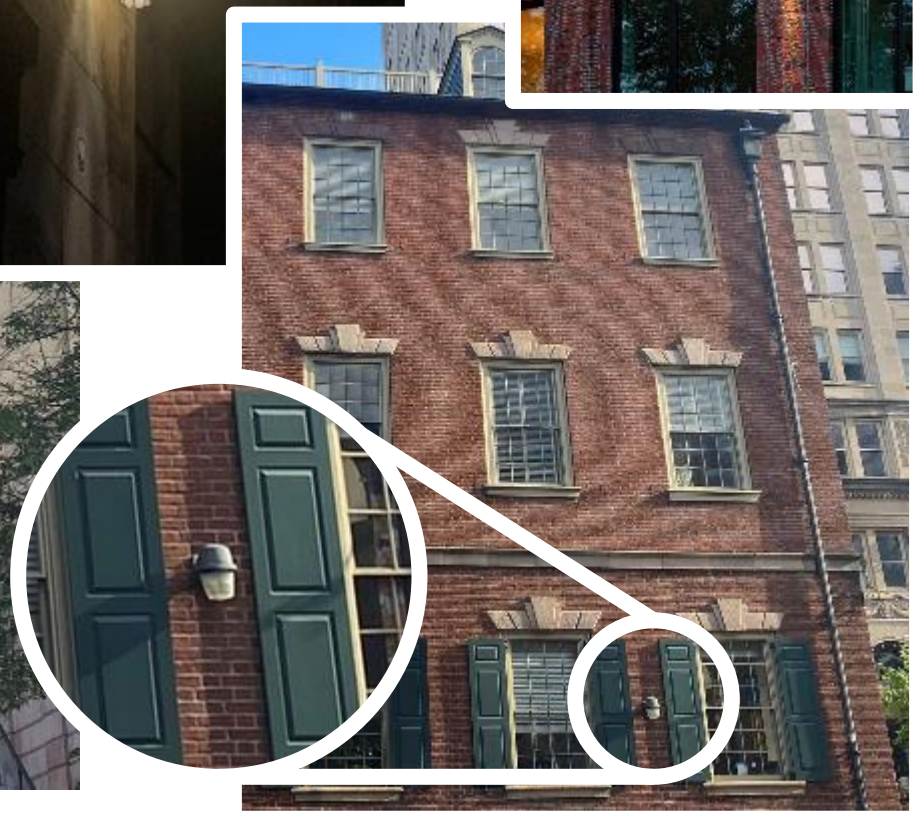


Technique #6 – Decorative Sconce

- Wall mounted fixture that provides aesthetic appeal
- The fixture itself may be decorative, matching the style of the architecture
- Or the fixture could provide a pattern of light that becomes the decorative element
- For our project, it could be refurbishing or replacing an existing fixture, or introducing a new element

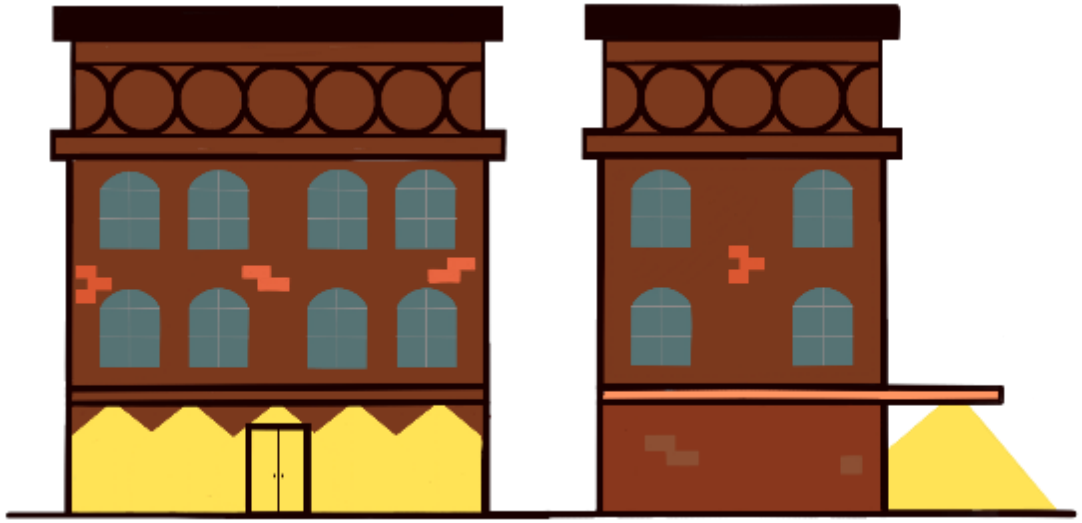






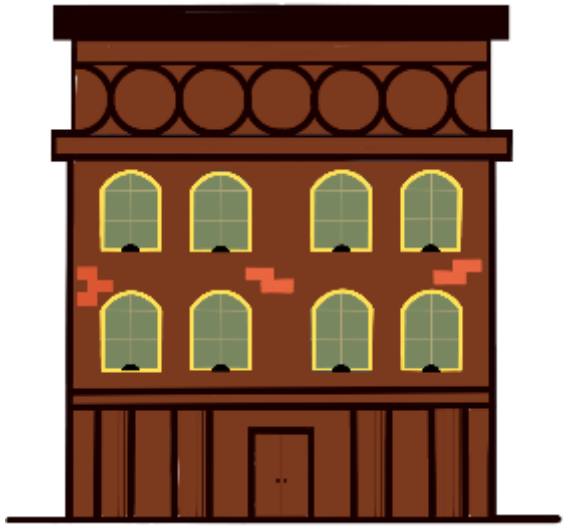
Technique #7 – Downlighting

- General term for a fixture that provides light downward
- Primarily used for ambient or task light, but could also create a pattern or emphasize vertical elements of façade
- Could be recessed into an overhang, surface mounted to structure, or mounted to a wall
- For our project, typically recommended under a canopy or soffit

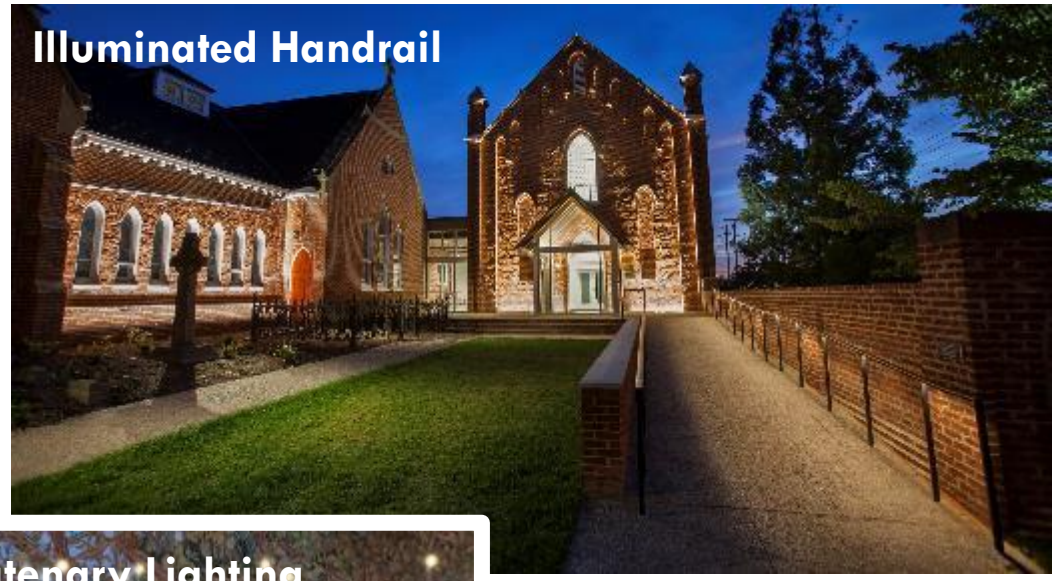


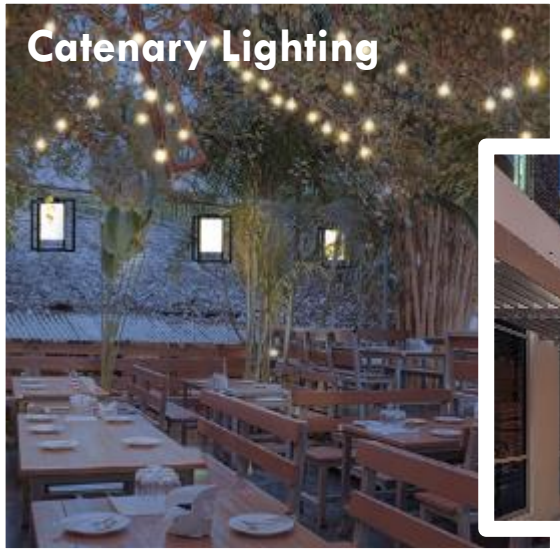
Technique #8 – Window Blade

- Fixture typically mounted at the base of a regressed opening in the façade, distributing a narrow “blade” of light to the sides and upwards
- Illuminates the inner edges of the façade opening without spilling much light into the building or out from the façade
- For this project, recommended at window regressions or overhangs with decent depth



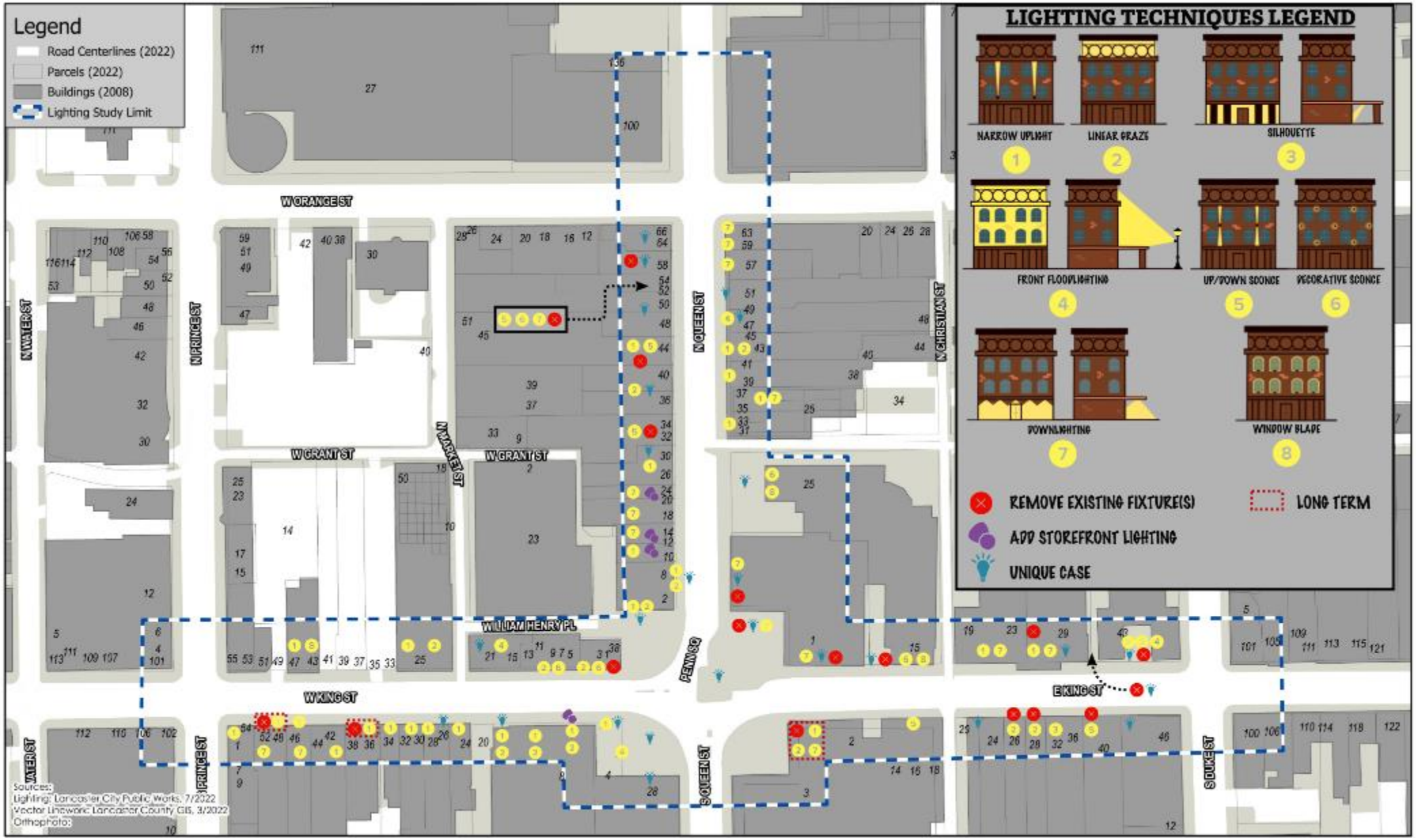
Other Techniques – Unique Cases



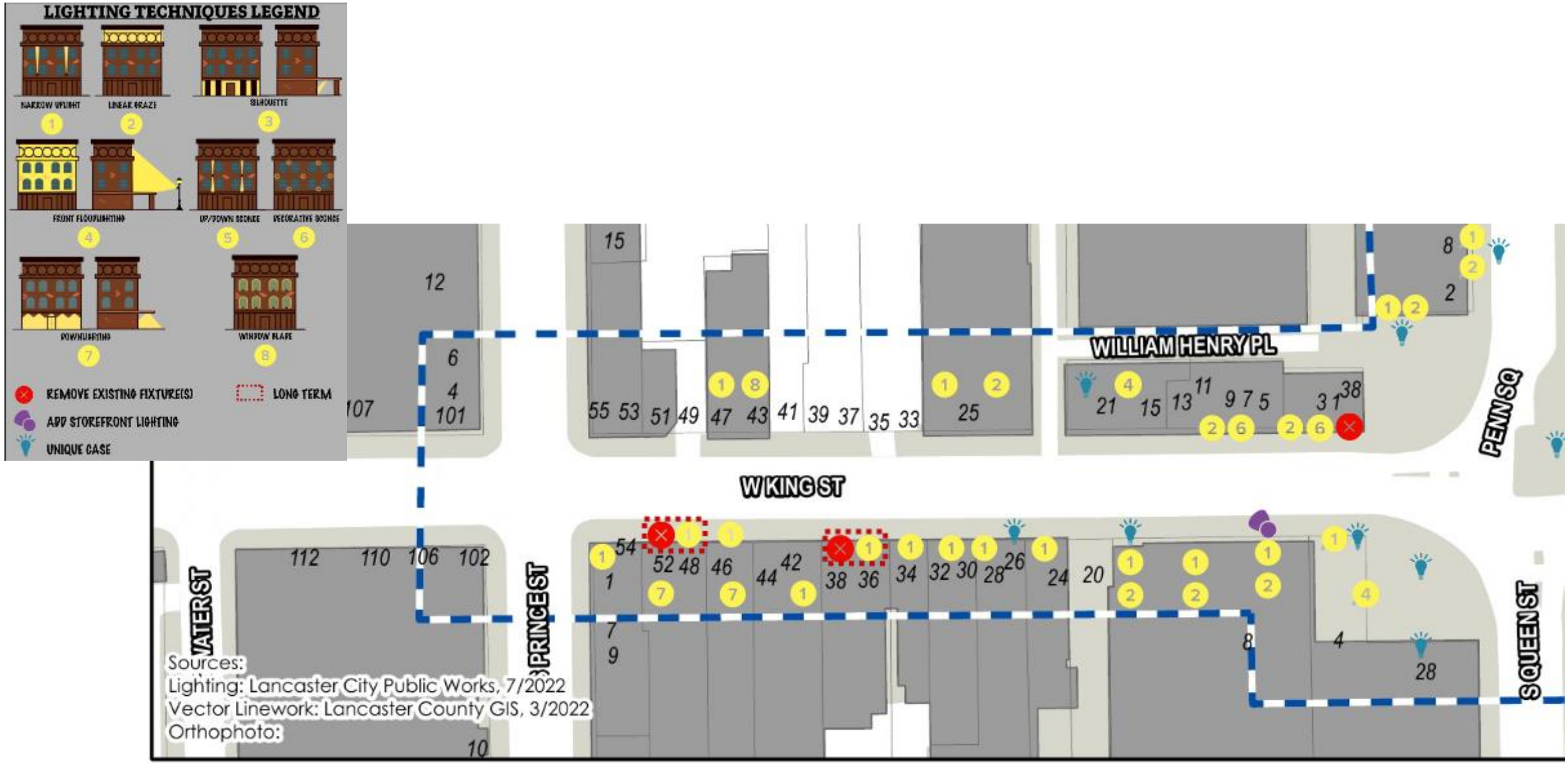


Other Techniques – Unique Cases (Penn Square)

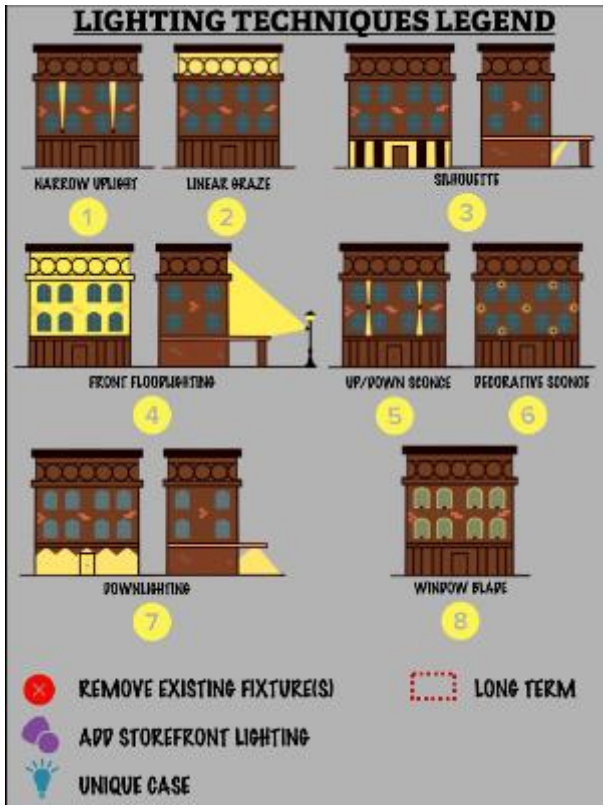
RECOMMENDED TECHNIQUES PER BUILDING

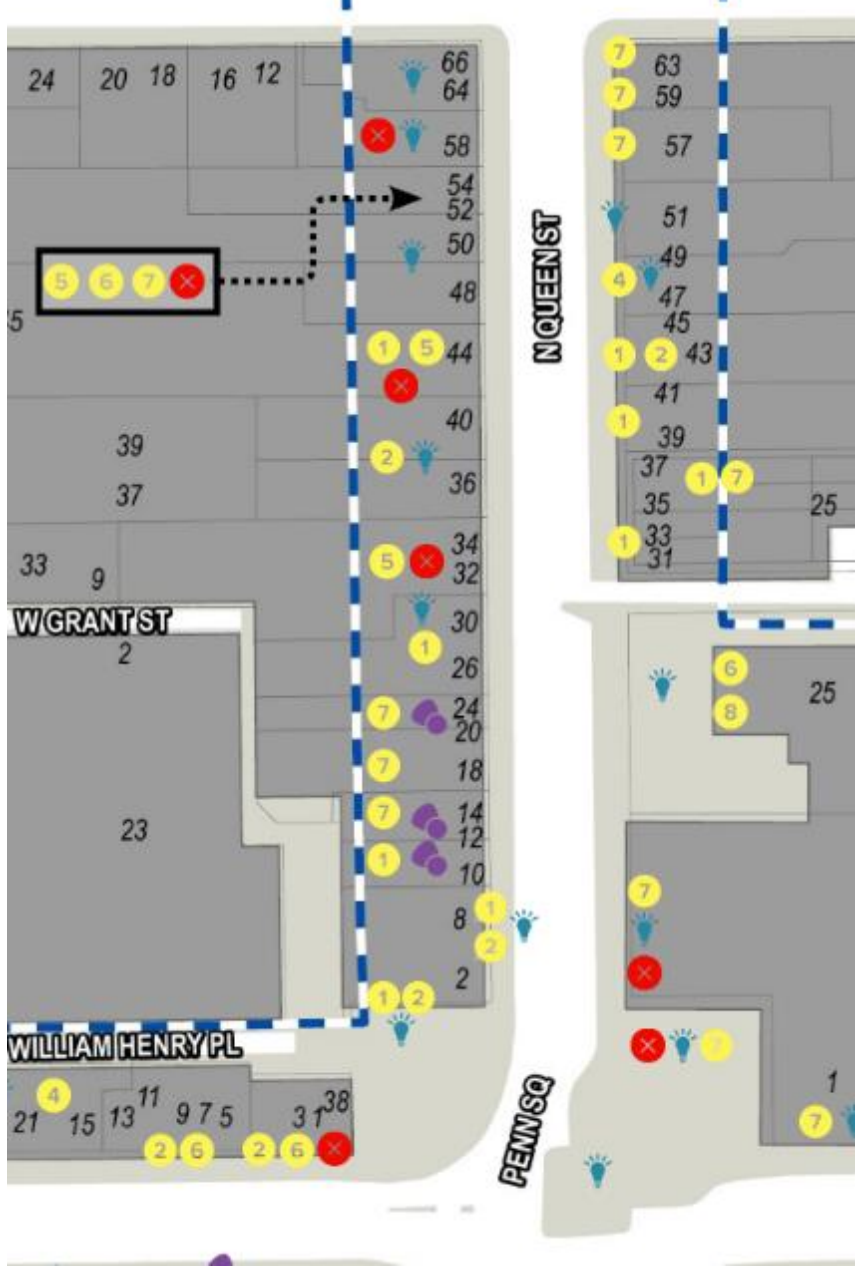


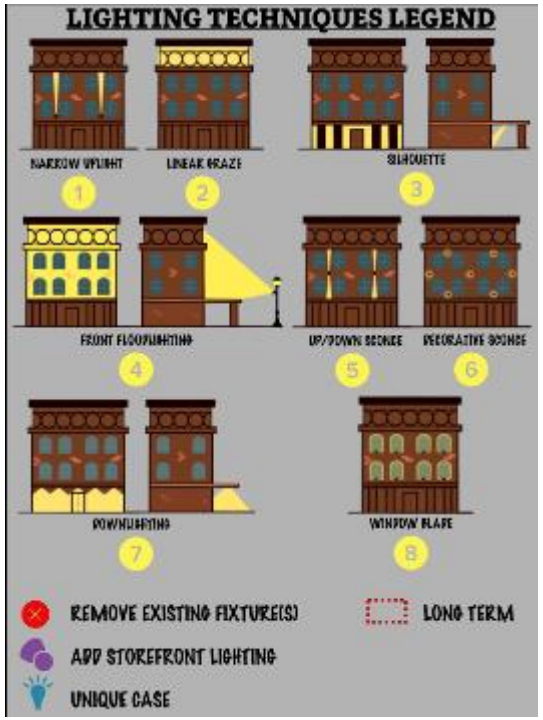
RECOMMENDED TECHNIQUES PER BUILDING



RECOMMENDED TECHNIQUES PER BUILDING


LIGHTING TECHNIQUES LEGEND
NARROW UPLIGHT
LINEAR GRAZE
SILHOUETTE
1
2
3
FRONT FLOODLIGHTING
UP/DOWN SCONCE
DECORATIVE SCONCE
4
5
6
DOWNLIGHTING
WINDOW BLADE
7
8
REMOVE EXISTING FIXTURE(S)
LONG TERM
ADD STOREFRONT LIGHTING
UNIQUE CASE


N QUEEN ST
W GRANT ST
WILLIAM HENRY PL
PENN SQ


LIGHTING TECHNIQUES LEGEND
NARROW UPLIGHT
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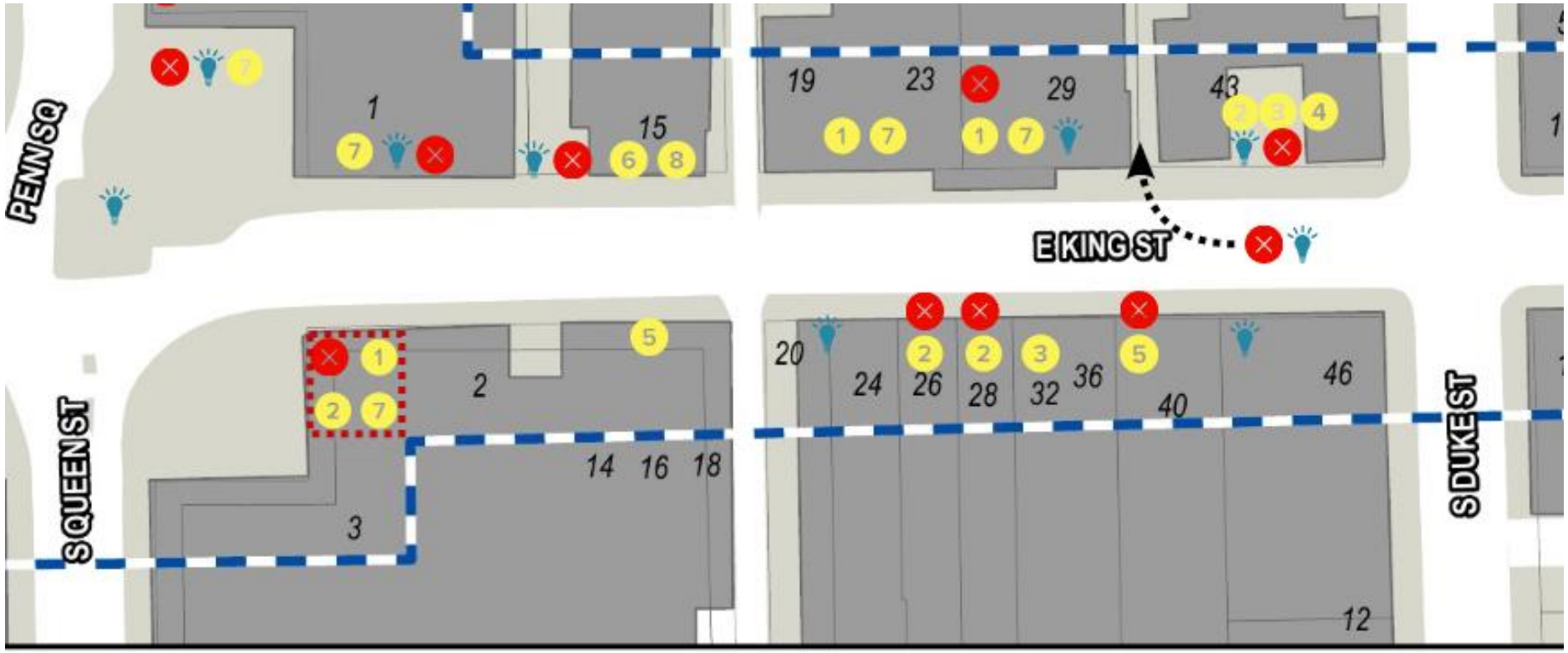
PENN SQ
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S DUKE ST
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Key Plan

"Farmers Trust Company of Lancaster"

46 East King Street

- Unique case 'UC1': In-grade uplights at solid vertical elements
- Technique '2': Linear graze along ledge located directly above main entry door
- Selective facade flood/spot lights from street light poles across the street

"Lancaster County Offices"

40 East King Street

- Existing concrete wall boxes have lights inside; replace the guts with technique '5' (up/down sconce)

"Cipher Building"

36 East King Street

- Technique '3': floodlight onto back facade, putting the front arch in silhouette

"Annie Bailey's"

28 East King Street

- Remove existing wall mounted cylinder down-lights (about halfway up facade)
- Add technique '2' from lower ledge

"Bistro Barberet & Bakery"

26 East King Street

- There are existing linear pink uplights; suggest changing to fixture with white light source and more focused, continuous optic (technique '2' - linear grazing)

Key Plan

"Tellus360"

20, 24 East King Street

- Unique case: There is a mural started on the sloped wall surface. Recommend finishing it - Extend graphic to end of building
- Unique case 'UC2': Uplight the underside of the cantilevered roof, with fixtures mounted to the wall section in between 1st and 2nd floors
- These elements will help draw the eye back toward Penn St. Garage

"The Exchange"

18 East King Street

- Technique '5' on brick columns

14 East King Street

- Existing catenary lighting to remain

"Lancaster Marriott at Penn Square"

25 South Queen Street

- Add decorative, pole-mounted street lights along curbline near intersection crosswalks
- Existing facade lighting to remain
- Long term, when the time comes for an upgrade, consider:
  - Technique '1' to replace small accent uplights
  - Technique '2' along upper ledge
  - Technique '7' at canopies
  - Consistent color (currently lots of color shifting)

RECOMMENDED TECHNIQUES PER BUILDING

Key Plan

"Harold's Building"

"Kirk Johnson"

28 Penn Square

- Existing surface-mounted downlights to remain
- Unique case 'UC3': Potential candidate for projection mapping (special events)
- Add decorative, pole mounted street lights near curb; with omni-directional light distribution to increase illuminance in plaza
- Replace existing linear lighting underneath cap of seat walls
- Fix or replace existing lighting in fountain
- Add string lights in similar fashion to NW quadrant

4 West King Street

- Technique '4' on side of building (east facade); from ground or on wall at low level
- Technique '1' on front of building (north facade); from lowest two horizontal bands
- Unique case 'UC4': Add low profile uplights on top of the "roof" of 1st floor display windows, to highlight the upper ceiling and provide general illumination in the entryway
- Clean and re-lamp decorative wall sconces

8 West King Street

- Technique '1' from lower ledge
- Technique '2' along upper ledge
- Add storefront lighting in "for lease" ground level spaces; will spill out to sidewalk

16 West King Street

- Technique '1' at side columns
- Technique '2' along upper ledge
- Unique case 'UC5': Backlight stained glass above entrance

20 West King Street

- Steinman Park: Existing lighting to remain

Key Plan

"Steinman Hardware Co"

24 West King Street
- Technique '1' for upper (brick) facade

26 West King Street
- Technique '1' for upper (brick) facade
- Unique case 'UC.58': Asymmetric uplight inside building to provide backlighting of the decorative glass transom above the entry door and storefronts

32 West King Street
- Technique '1' for upper (brick) facade

36 West King Street
- Technique '1' for upper (brick) facade

38 West King Street
- Existing facade lighting to remain
- Long term, when the time comes for an upgrade, consider:
  - Remove (4) existing wall mounted uplights
  - Add (6) Technique '1' fixtures for upper (brick) facade

DERCK & EDSON

RECOMMENDED TECHNIQUES PER BUILDING

Key Plan

44 West King Street
- Technique '1' for upper (brick) facade

46 West King Street
- Technique '1' for upper (brick) facade
- Technique '7' at building entrance

52 West King Street
- Technique '7' at canopy entrance
- Existing facade lighting to remain
- Long term, when the time comes for an upgrade, consider:
  - Technique '1': replace the existing uplights with narrow optic fixture from recommended tool palette

54 West King Street
- Technique '1' for upper (brick) facade

Key Plan

51 West King Street
- No facade lighting recommended

47 West King Street
- No facade lighting recommended

43 West King Street
- Technique '1' at lower ledge
- Technique '8' at top windows
- It is understood that the facade will stay in place, while the rest of the block will be a new building

25 West King Street
- Technique '1' at lower ledge
- Technique '2' at upper ledge

RECOMMENDED TECHNIQUES PER BUILDING

Key Plan

"Griest Building"

21 West King Street

- Unique case 'UC6': Add canopy at entry doors
- Then, add lights, (for example, technique '4') on top of canopy to illuminate facade

13 West King Street

- Technique '2' from mid-building horizontal band
- Technique '6B' (add period style fixtures)

3 West King Street

- Technique '2' from mid-building horizontal band
- Remove existing modern sconce and replace with Technique '6B' (period style fixture), and add a fixture for symmetry

2 North Queen Street

- Keep existing lighting at top of building, in-grade uplights at base of building and catenary lighting in plaza
- Technique '1' at middle (upper) ledge
- Technique '2' at middle (lower) ledge
- Unique case 'UC3': Potential candidate for projection mapping (for special events)

Key Plan

"Griest Building"

38 Penn Square

- No facade lighting recommended
- No lighting changes to square recommended

8 North Queen Street

- Keep existing lighting at top of building and in-grade uplights at base of building
- Technique '1' at middle (upper) ledge
- Technique '2' at middle (lower) ledge
- Unique case 'UC3': potential candidate for projection mapping (for special events)

12 North Queen Street

- Technique '1' above canopy
- Add more storefront lighting

14 North Queen St

- Technique '7' at building entrance
- Add more storefront lighting

18 North Queen Street

- Technique '7' at building entrance

24 North Queen Street

- Decorative art deco sconce to remain; inspect for potential refurbishment and new light source
- Two potential approaches for new lighting:
  1. Technique '7' add downlights at entrance
  2. Add more storefront lighting

30 North Queen Street

- Technique '1' along vertical columns between windows
- Unique case 'UC4': Add low profile uplights on top of the "roof" of first floor display windows, to highlight the upper ceiling and provide general illumination in the entryway

Key Plan

34 North Queen Street
- Technique '5': replace existing up/down sconces with new fixture from recommended tool palette
- Add second row of up/down sconces, 2 stories higher

36 North Queen Street
- Technique '2' along upper cornice of detailed right half of the building
- Unique case 'UC11': Add linear asymmetric cantilevered fixture to illuminate red signage

44 North Queen Street
- Technique '1': replace the existing uplights at middle ledge with new fixture from recommended tool palette
- Technique '5': replace existing lower lights with up/down sconces

48, 50 N Queen St
- Unique case 'UC6': Add shallow canopy at entry
- Then, add light fixtures on top of canopy for selective highlighting of sculptural details

52, 54 North Queen Street
- Technique '5': replace existing up/down sconces with new fixture from recommended tool palette
- Technique '6': replace existing decorative sconces with more appropriately scaled fixtures
- Technique '7': add downlights at entry

58 N Queen St
- Unique case 'UC7': replace sign lighter fixtures with fixtures that have tighter optics and baffles

66 N Queen St
- Existing lights to remain
- Fix the lights that are not working; assume clean & re-lamp
- When it comes time to replace the twinkle lights under the canopy, use a warmer color temperature

RECOMMENDED TECHNIQUES PER BUILDING

Key Plan

57, 59, 63 North Queen Street
- Technique '7' underneath canopies

51 North Queen Street
- Unique case 'UC8': Mount small accent uplight at base of each narrow vertical wall segment; consider color-changing LEDs and appropriate controls

49, 47 North Queen Street
- Unique case 'UC6': Add canopy at entry doors
- Then, add lights (for example, technique '4') on top of canopy to illuminate facade

45, 43 North Queen Street
- Technique '1' at lower ledge at vertical elements
- Technique '2' along upper ledge

39 North Queen Street
- Technique '1' from lower ledge

RECOMMENDED TECHNIQUES PER BUILDING

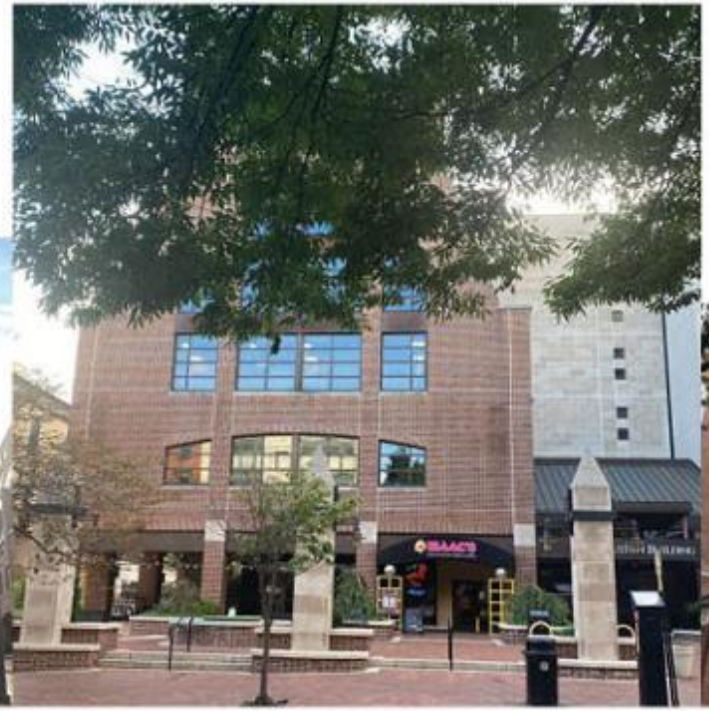
Key Plan

35 North Queen Street

- Technique '1' from lower ledge
- Technique '7' along underside of shallow overhang

33, 31 North Queen Street

- Technique '1' from lower ledge



25 North Queen Street

- Technique '6A' decorative lights (possibly glowing "buttons" or silhouette fixture with halo or 4-way distribution) at concrete squares in facade and elsewhere
- Technique '8' at upper window insets
- Clean and re-lamp existing decorative wall sconces in plaza with appropriate LED retrofit lamps that have consistent color temperature

1 Penn Square

- Technique '7': small aperture downlights in soffit along roof line
- Unique case 'UC9': Twinkle lights in trees; remove existing and install new
- Add decorative, pole-mounted street lights along curbline near intersection crosswalks

Key Plan

1 Penn Square

- Technique '7': small aperture downlights in soffit along roof line
- Unique case 'UC9': twinkle lights in trees; remove existing and install new

11 East King Street (brick)

- Technique '7': small aperture downlights in soffit along roof line
- Unique case 'UC9': twinkle lights in trees; remove existing and install new

11 East King Street (concrete/stone)

- Unique case: Remove the upper (2) arm-mounted sconces
- Technique 'UC10' at top edge of building, shining down

15 East King Street

- Technique '6A' decorative lights (possibly glowing "buttons" or silhouette fixture with halo or 4-way distribution) at concrete squares in facade
- Technique '8' at each upper window inset

Alley between 15 & 19 East King Street

- Existing wall mounted lights to remain

Key Plan

19, 23 East King Street

- Technique '1' only at double wide columns
- Technique '7' under canopy, centered with technique '1' fixtures above

29 East King Street

- Technique '1' at main columns
- Existing fixtures on underside of canopy: Add a dimmer to reduce intensity or remove fixtures and apply Technique '7'
- Unique case: Add lighting to illuminate slanted wall ('UC10') and attached signage ('UC11')

Alley between 29 & 43 East King Street

- Remove existing downlights
- Add catenary lighting system

"Lancaster County Courthouse"

43 East King Street

- Remove existing wide-optic wall mounted floodlights for flag
- Existing decorative wall sconces to remain; inspect for potential refurbishment and new light source; assume clean & re-lamp
- Unique case ('UC12'): Illuminated handrail along stairs to main entry; replace existing handrail at edges of stair run, add more handrail in center
- Technique '2' along cornice/raised plazas at sides of main entry stairs
- Technique '3' at front facade; illuminate walls behind columns
- Technique '4' at front facade; softly illuminate front of columns
- Technique '2' at pediment at top of front facade
- Unique case 'UC13': Pole-mounted uplight ring for flag illumination

RECOMMENDED TECHNIQUES PER BUILDING

TRANSFORMATIONS

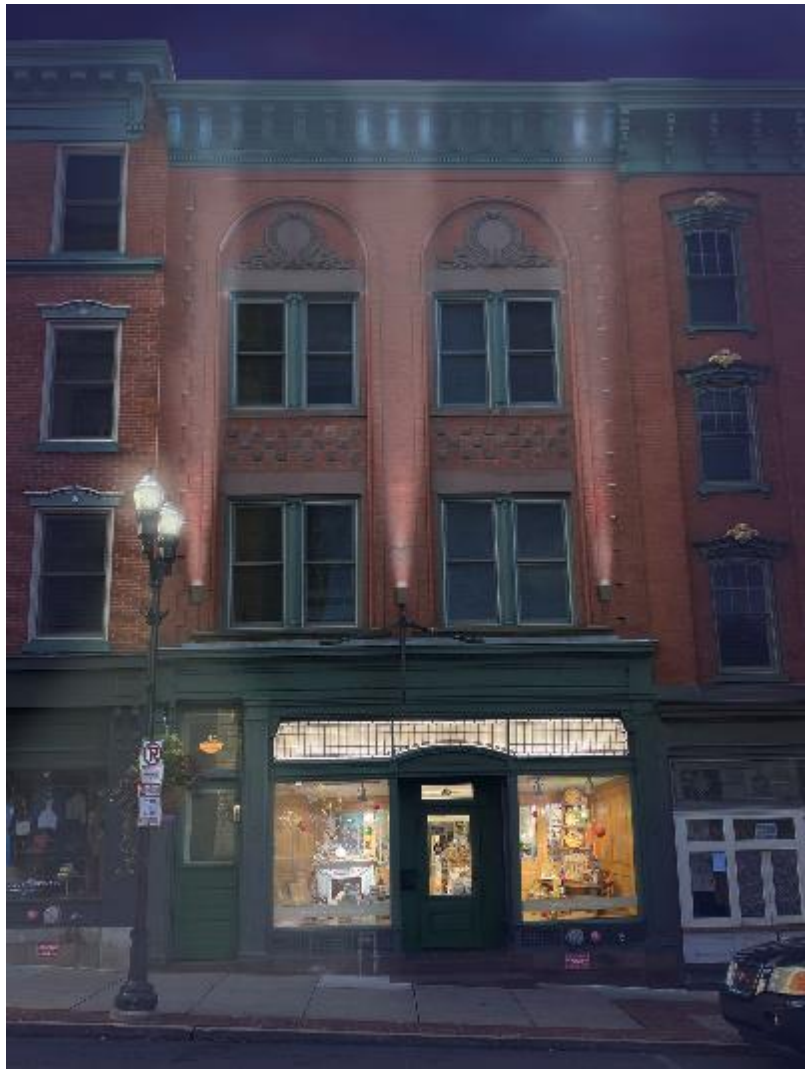
26 – 46 East King Street

26 – 46 East King Street

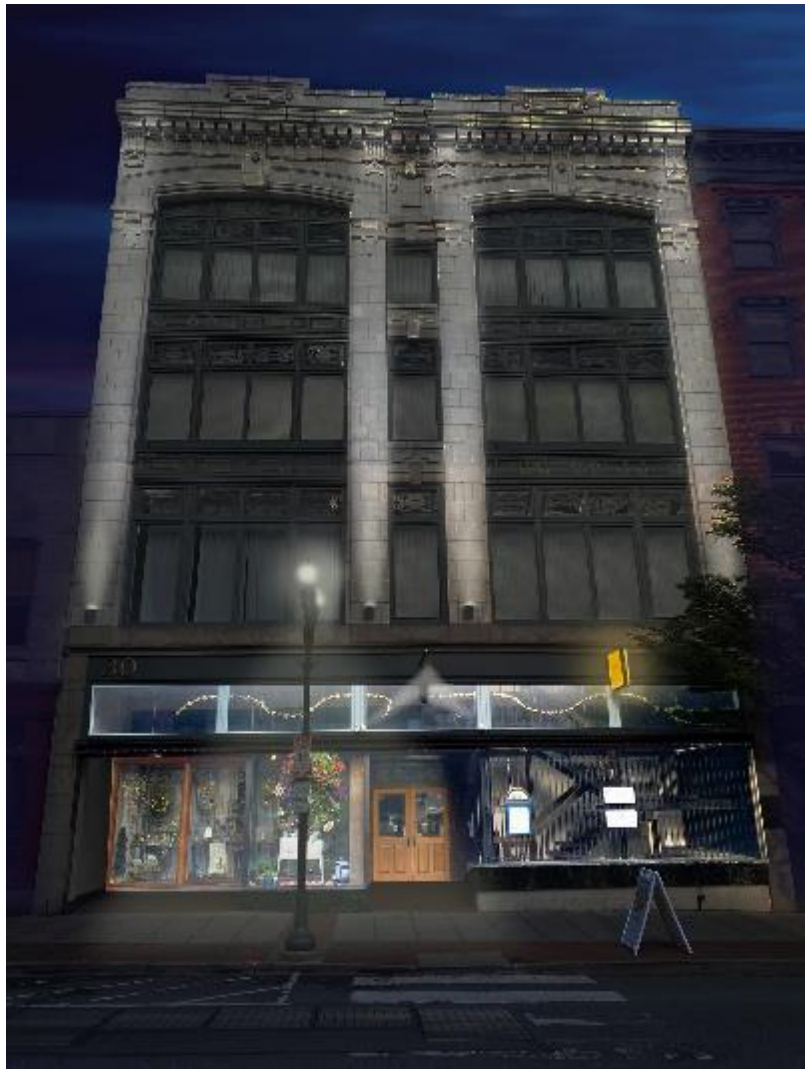
28 Penn Square – 16 West King Street

28 Penn Square – 16 West King Street

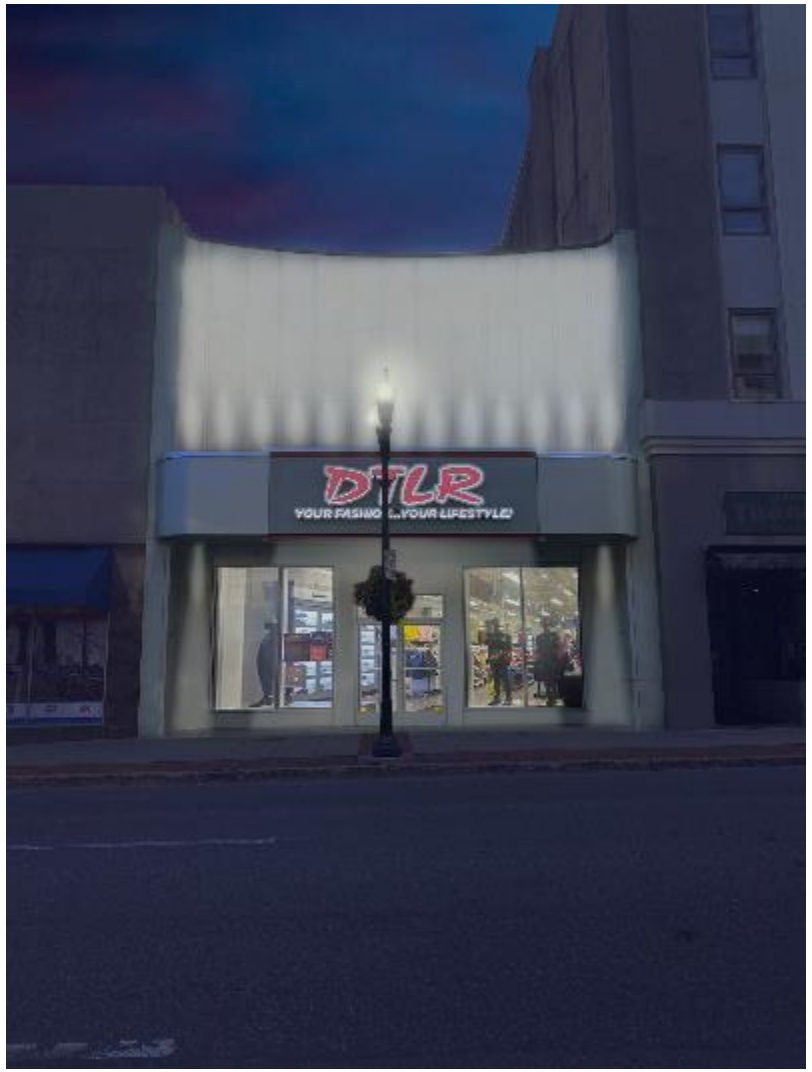
36 West King Street

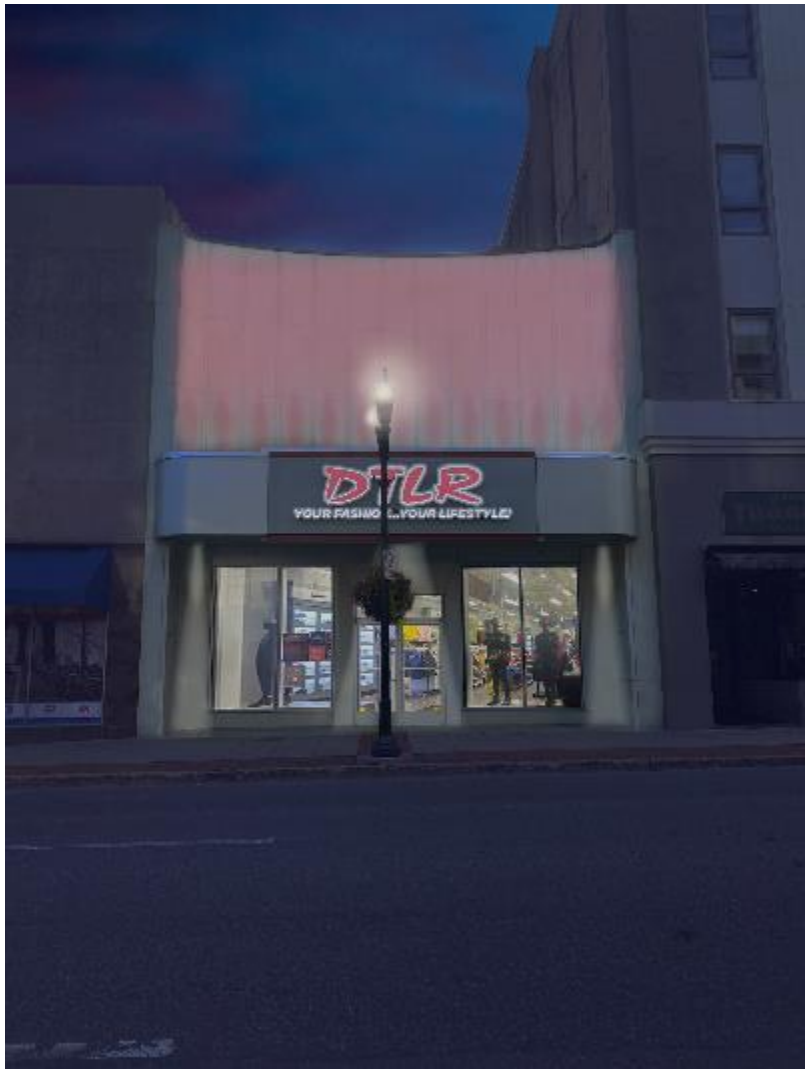


30 North Queen Street

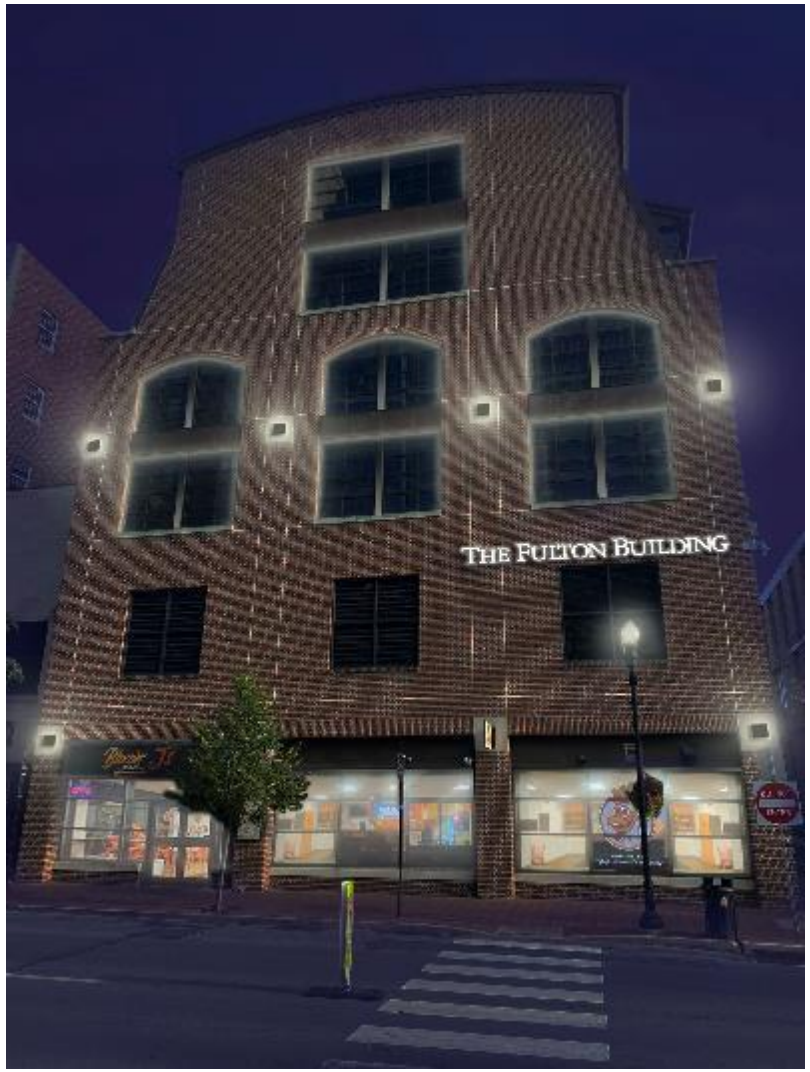


51 North Queen Street



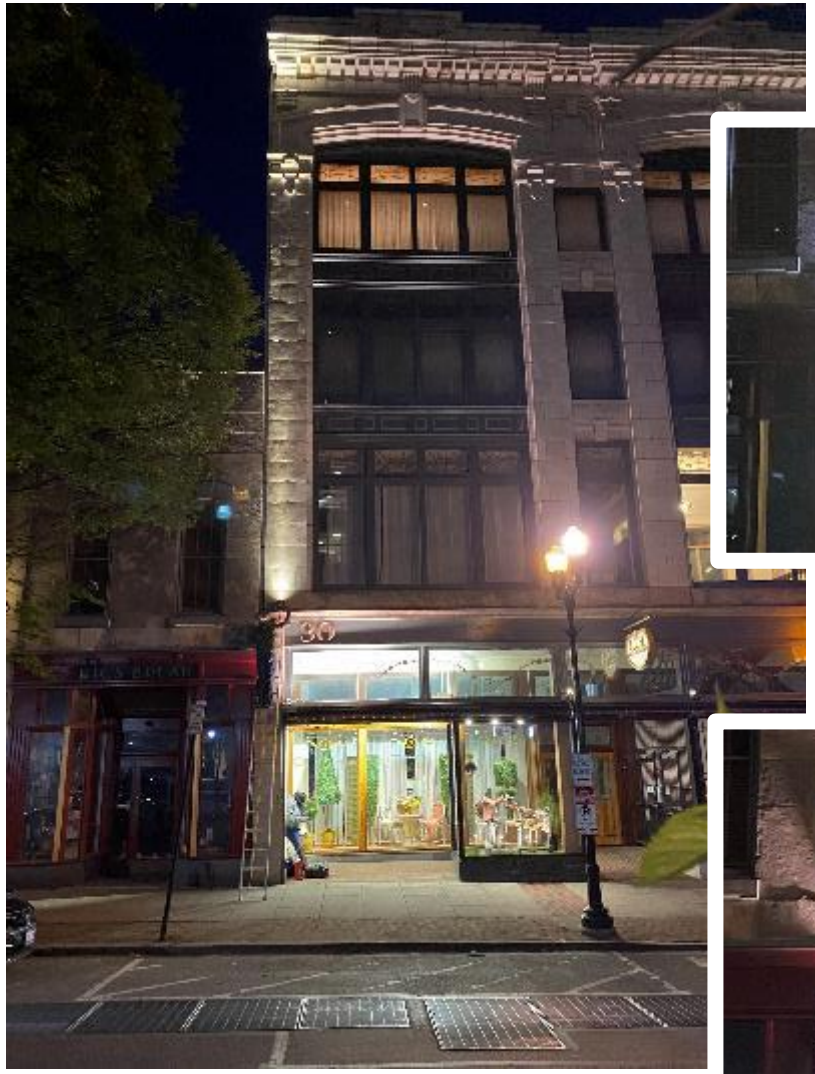


15 East King Street



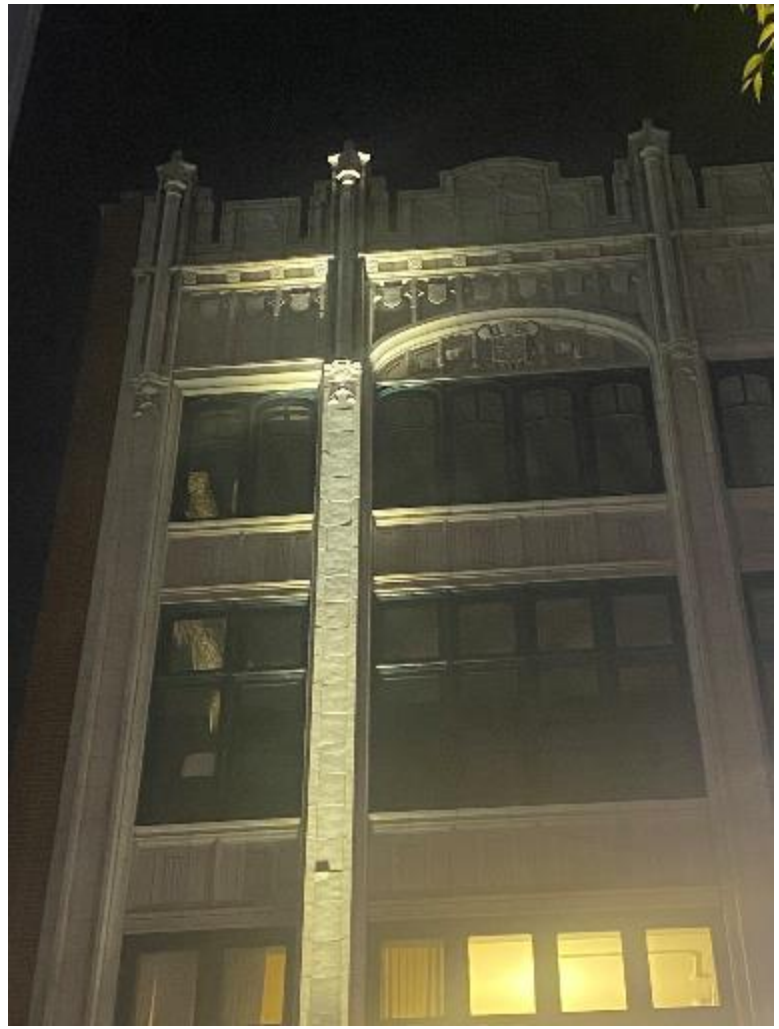
ON SITE MOCK-UP

Mock-up at 30 North Queen Street (5/3/23)



ON SITE MOCK-UP

Mock-up at 8 West King Street (5/3/23)



ON SITE MOCK-UP

Mock-up at 46 East King Street (5/3/23)

ON SITE MOCK-UP

Mock-up at 46 East King Street (5/3/23)

ORDER OF MAGNITUDE COST ESTIMATE

Order of Magnitude Opinion of Probable Cost – General Notes:

- The summary of costs provided are not intended as an exact price quote. Rather, they are intended to provide a general idea of the order of magnitude of the proposed lighting techniques for each respective building façade.
- Costs do not include design fees; only an opinion of the construction cost (material and labor).
- To provide numbers that are realistic for the Lancaster area, light fixture costs were obtained from a variety of local lighting manufacturer representatives; labor costs were obtained from a local electrical contractor (Lapp Electric).
- Costs are for lighting of the building facades, and do not include recommendation for lighting away from the facades, such as for illuminated handrail, lights in trees, or fountain lighting.
- All costs include automatic on/off controls for the new light fixtures via astronomic time clock; one device per building. Some techniques also include manual dimming control or controls for color changing; the summary tables that follow indicate where these controls are included.
- Quantities and types of fixtures were selected to provide a general idea of cost. Specific fixture selection, quantities, and locations may result in drastically different actual installation cost.
- A general cost was included to provide power to the first fixture of a given type, then daisy chaining to additional fixtures of that same type. The location and difficulty of running power to the exterior lights will depend on the conditions at each respective address and may vary widely from building to building.
- When a building owner decides to proceed with adding exterior illumination to their property, it is recommended to hire a qualified lighting design professional to perform a full lighting design, and a licensed electrical contractor to order the fixtures and complete the installation. The professionals will be able to provide more exact quotes for their services based on the unique conditions of each property and the specific desires of the building owner.

STREET	ADDRESS	LIGHTING TECHNIQUES IN COST	OPINION OF INSTALLED COST
Penn Square Facades			
	1 (at Queen)	Lighting Technique (LT)7A	$6,482 - $9,723
	1 (in plaza)	LT7A	$10,403 - $15,605
	28	Unique Case (UC)3A - shorter bldg; temporary for a few days/week, basic content	$84,000 - $126,000
		UC3A - shorter bldg; temporary for a few days/week, customized content	$128,000 - $192,000
	38	(no façade lighting recommended currently)	N/A
W. King Street			
	3	LT2, LT6B, remove existing fixtures	$23,543 - $35,314
	4	LT1, LT4, UC4, clean/re-lamp	$31,835 - $47,753
	8	LT1, LT2, storefront lighting (SF)**	$39,123 - $58,685
	13	LT2, LT6B	$33,610 - $50,415
	16	LT1, LT2, UC5A&B**	$17,312 - $25,968
	20	(no façade lighting recommended currently)	N/A
	21	LT4, UC6*	$5,070 - $7,605
	24	LT1	$6,424 - $9,636
	25	LT1, LT2	$27,130 - $40,695
	26	LT1, UC5B**	$11,636 - $17,454
	32	LT1	$7,730 - $11,595
	36	LT1	$5,118 - $7,677
	38	(no façade lighting recommended currently)	N/A
	43	LT1, LT8	$15,112 - $22,669
	44	LT1	$6,424 - $9,636
	46	LT1, LT7A	$10,291 - $15,436
	47	(no façade lighting recommended currently)	N/A
	51	(no façade lighting recommended currently)	N/A
	52	LT7A	$2,561 - $3,841
	54	LT1	$9,036 - $13,554

STREET	ADDRESS	LIGHTING TECHNIQUES IN COST	OPINION OF INSTALLED COST
N. Queen Street			
	2	LT1, LT2	$30,261 - $45,392
		UC3B - taller bldg; temporary for a few days/week, basic content	$120,000 - $180,000
		UC3B - taller bldg; temporary for a few days/week, customized content	$184,000 - $276,000
	8	LT1, LT2	$25,745 - $38,617
		UC3B - taller bldg; temporary for a few days/week, basic content	$120,000 - $180,000
		UC3B - taller bldg; temporary for a few days/week, customized content	$184,000 - $276,000
	12	LT1, SF**	$9,584 - $14,376
	14	LT7A, SF**	$7,321 - $10,981
	18	LT7A	$4,521 - $6,782
	24	LT7A, SF**	$4,735 - $7,103
	25	LT6A, LT8, clean/re-lamp	$80,281 - $120,422
	30	LT1, UC4	$14,954 - $22,431
	31,33	LT1	$6,424 - $9,636
	34	LT5, remove existing fixtures	$29,167 - $43,750
	35	LT1, LT7B	$11,243 - $16,865
	36	LT2, UC11	$27,219 - $40,828
	39	LT1	$7,730 - $11,595
	43,45	LT1, LT2	$17,292 - $25,938
	44	LT1, LT5, remove existing fixtures	$10,365 - $15,548
	47,49	LT4, UC6*	$6,560 - $9,840
	48,50	LT4, UC6*	$3,580 - $5,370
	51	UC8***, remove existing fixtures	$16,512 - $24,768
	52,54	LT5, LT6B, LT7A, remove existing fixtures	$40,545 - $60,817
	57,59,63	LT7B	$16,423 - $24,634
	58	UC7, remove existing fixtures	$1,918 - $2,876
	66	clean/re-lamp	$1,595 - $2,393

STREET	ADDRESS	LIGHTING TECHNIQUES IN COST	OPINION OF INSTALLED COST
E. King Street			
	11 (brick)	LT7A	$0 - $0
	11 (masonry)	UC10, remove existing fixtures	$11,373 - $17,059
	14	(no façade lighting recommended currently)	N/A
	15	LT6A, LT8	$43,280 - $64,920
	18	LT5	$11,187 - $16,780
	19,23	LT1, LT7A	$12,577 - $18,865
	20,24	UC2***	$93,613 - $140,419
	26	LT2, remove existing fixtures	$9,681 - $14,521
	28	LT2, remove existing fixtures	$9,536 - $14,305
	29	LT1, UC10, UC11, add dimmer switch for existing fixtures	$17,634 - $26,451
	36	LT3	$6,339 - $9,509
	40	LT5, remove existing fixtures	$6,073 - $9,110
	43	LT2, LT3, LT4, remove existing fixtures, clean/re-lamp	$73,081 - $109,621
	46	LT4, UC1	$21,189 - $31,784
S. Queen Street			
	25	(no façade lighting recommended currently)	N/A
Penn Square Plaza Spaces			
	NE	1 New decorative pole mounted pedestrian light	$8,250- $13,750
	SE	1 New decorative pole mounted pedestrian light	$8,250- $13,750
	SW	2 New decorative pole mounted pedestrian lights	$16,500- $27,500
	SW	Strings- steel pole, wire & lights	$15,400- $20,550

**Cost for new canopy not included; only lighting is included*

***Cost includes dimmer switch for this fixture type*

****Cost includes controls for color-changing lights with built-in astronomic time clock; all other buildings include a separate astronomic timeclock*

Sample Fixtures used for Pricing

Technique 1: Narrow Uplight

- Manufacturer: Insight
- Model Series: ProSpot6

Technique 2: Linear Graze

- Manufacturer: KKDC
- Model Series: MoMo

Technique 3: Silhouette

- Manufacturer: Lithonia
- Model Series: D-Series Size 2

Technique 4: Front Floodlighting

- Manufacturer: EcoSense
- Model Series: Rise F170

Sample Fixtures used for Pricing

Technique 5: Up/Down Sconce

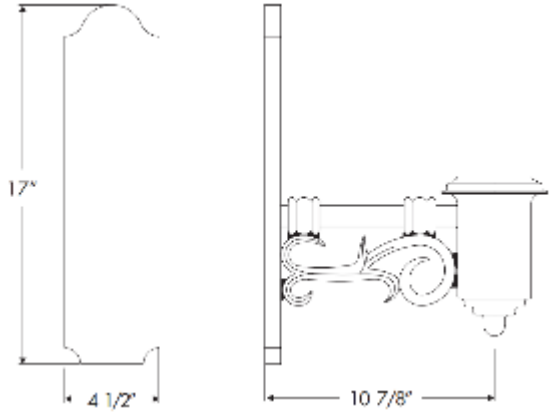
- Manufacturer: Ligman
- Model Series: Marvik 5

Technique 6A: Decorative Sconce - Modern

- Manufacturer: Visa
- Model Series: Southridge

Technique 6B: Decorative Sconce – Traditional

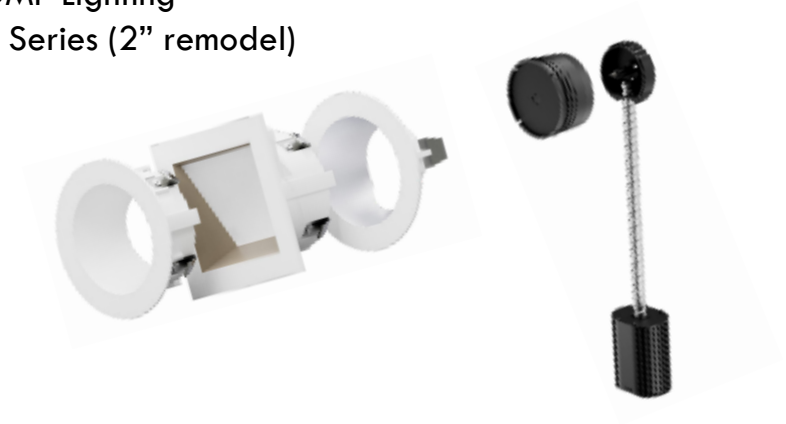
- Manufacturer: ELA Lighting
- Model Series: Delaware (fixture), BR6 (arm)



Sample Fixtures used for Pricing

Technique 7A: Downlighting - Recessed

- Manufacturer: DMF Lighting
- Model Series: X Series (2” remodel)



Technique 7B: Downlighting – Surface Cylinder

- Manufacturer: DMF Lighting
- Model Series: X Series (3” cylinder)

Technique 8: Window Blade

- Manufacturer: iGuzzini
- Model Series: Trick

Sample Fixtures used for Pricing

Storefront Lighting “SF”

- Manufacturer: Liton
- Model Series: LP (track), Cylo Swivel Cylinder (fixture)

Unique Case “UC1”

- Manufacturer: Vista
- Model Series: 1185 COB In-Grade

Unique Case “UC2”

- Manufacturer: Hydrel
- Model Series: 4750LCR RGBW
- Color Changing Controls: Acuity “Easyl Touch”

Unique Case “UC4”

- Manufacturer: Solid State Luminaires
- Model Series: Coveline XL Wet 1.5

Sample Fixtures used for Pricing

Unique Case “UC5A”

- Manufacturer: Electrix
- Model Series: LumiLedge 5” Mini Cove

Unique Case “UC5B”

- Manufacturer: Elliptipar
- Model Series: S320

Unique Case “UC7”

- Manufacturer: EcoSense
- Model Series: Rise F080

Unique Case “UC8”

- Manufacturer: GVA Lighting
- Model Series: Lira RGBW
- Color Changing Controls: Nicolaudie “STICK-DE3”

Sample Fixtures used for Pricing

Unique Case “UC10”

- Manufacturer: Lumenpulse
- Model Series: Lumenfacade Pure Horizontal

Unique Case “UC11”

- Manufacturer: Pinnacle
- Model Series: Moffat Wet

Retrofit Lamp – PAR30, Medium Base

- Manufacturer: Green Creative
- Model Series: Refine PAR

Retrofit Lamp – A-lamp, Mogul Base

- Manufacturer: Green Creative
- Model Series: HID Bollard

IMPLEMENTATION PLAN

For the LCA and/or the City:

- Consider a 'memorandum of understanding' for property owners within the BID and outline the recommendations that can be executed. MOU can include the lighting study to substantiate the overall goals and approach. Consider incentives for committing to the MOU – example higher funding levels for implementation.
- In lieu of the MOU, can also consider an ordinance or easement to implement the lighting approach. If and easement is the ultimate rout, creating a lighting district similar to Boat House Row or the Avenue of the Arts in Philadelphia are good examples to further investigate and follow.

- Encourage property owners to include language in leases to mandate lighting techniques outlined.
- Determine what applicable ordinances and standards must be followed for the facade lighting projects.
  - Generally, City ordinances have provided maximum allowable limits on lighting rather than desired approaches and effects. Providing desired approaches is 'new' territory. Most coordinated lighting in a streetscape is due to consistent property ownership.
  - Energy codes now provide parameters for timing of lighting from the premise of energy conservation

For the LCA and/or City continued:

- Determine funding source(s), what it will cover, and how it will be implemented.
  - One method: City/LCA provides funding for the lighting design, contingent on Owner paying for installation.
- Determine what entity will review and provide recommendations for lighting improvements. Is there an existing committee or commission to oversee or is there a new 'lighting commission' established.
- Create a process for the Property Owners to follow. For example, using the LCA as the review and approval entity:
  - Property Owner comes to the LCA informing them that they would like to add facade lighting to their building.
  - LCA outlines the steps for Owner to follow, including filling out paperwork for funding if applicable and producing a lighting design.
  - Property Owner submits lighting design to the LCA for review.
  - LCA reviews and approves or returns with comments to incorporate.

For the Building Owners:

- Read and understand the recommendations in this study; including the general recommendations, as well as those specific to your building.
- Go to the LCA and state your intention to add facade lighting to your building. Follow the steps outlined in their process.
- Hire a qualified lighting design professional to produce a full design (including light fixtures and controls) for your building facade, incorporating the techniques and information presented in this study.
- Hire a qualified electrical contractor to complete the installation. They should be able to:
  - Provide a price quote for the materials and labor.
  - Purchase all the light fixtures and equipment needed.
  - Locate a source of power within the building, as well as a route for the conduits & wire, and a location for the controls.
  - Install all the equipment.
  - Program the lighting controls, with input from the Owner on preferred scheduling.
- Request your lighting design professional to come back to the site after installation to assist with aiming the fixtures and fine tuning.
- Proudly display your facade lighting and enjoy!
- Ongoing: Provide occasional cleaning and maintenance to keep the system functioning as intended.

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