

Gabriel Mackinnon

**BYWARD MARKET MASTER PLAN**  
LIGHTING DESIGN - FOR BUDGET  
DECEMBER 3, 2019

## KEY PRINCIPLES

### LIGHTING DESIGN OVERVIEW

The lighting design for the ByWard Market should obey the following principles to help support the special character of the neighbourhood.

- Light sources should have a warm colour temperature (2700-3000k) to create comfortable evening ambiance and complement warm brick tones.
- Light fixture assemblies should have a distinctive appearance, to elevate and distinguish them from pure utility lighting. It is suggested to use wood and dark metal in core pedestrian areas, as a visual reference to the historical importance of the timber industry history to the area. **Elevating the appearance of the lighting equipment will help support and reinforce the distinctiveness of the area.**
- In open plaza areas, consolidate luminaires onto few poles to keep pole quantity to a minimum and event areas clear. **Special event areas can be further identified and celebrated by the use of feature scale lighting elements.**
- On large poles, many small luminaires are preferable to few large luminaires; this allows light to be directed where most needed, lightens the visual weight of the poles, and prevents uncomfortable glare from higher angle fixture aiming.
- Light fixtures should have controlled optics to prevent spill and glare when not desired, however spill onto commercial facades may be encouraged in some locations. Context must be considered.
- Light poles should support the use of placemaking elements like banners to allow area organizations to implement seasonal or annual themes.

There is a strong opportunity for lighting to support and enhance the design of the neighbourhood; following these lighting principles will help ensure that the selected lighting solution suits the vibrancy of the area.



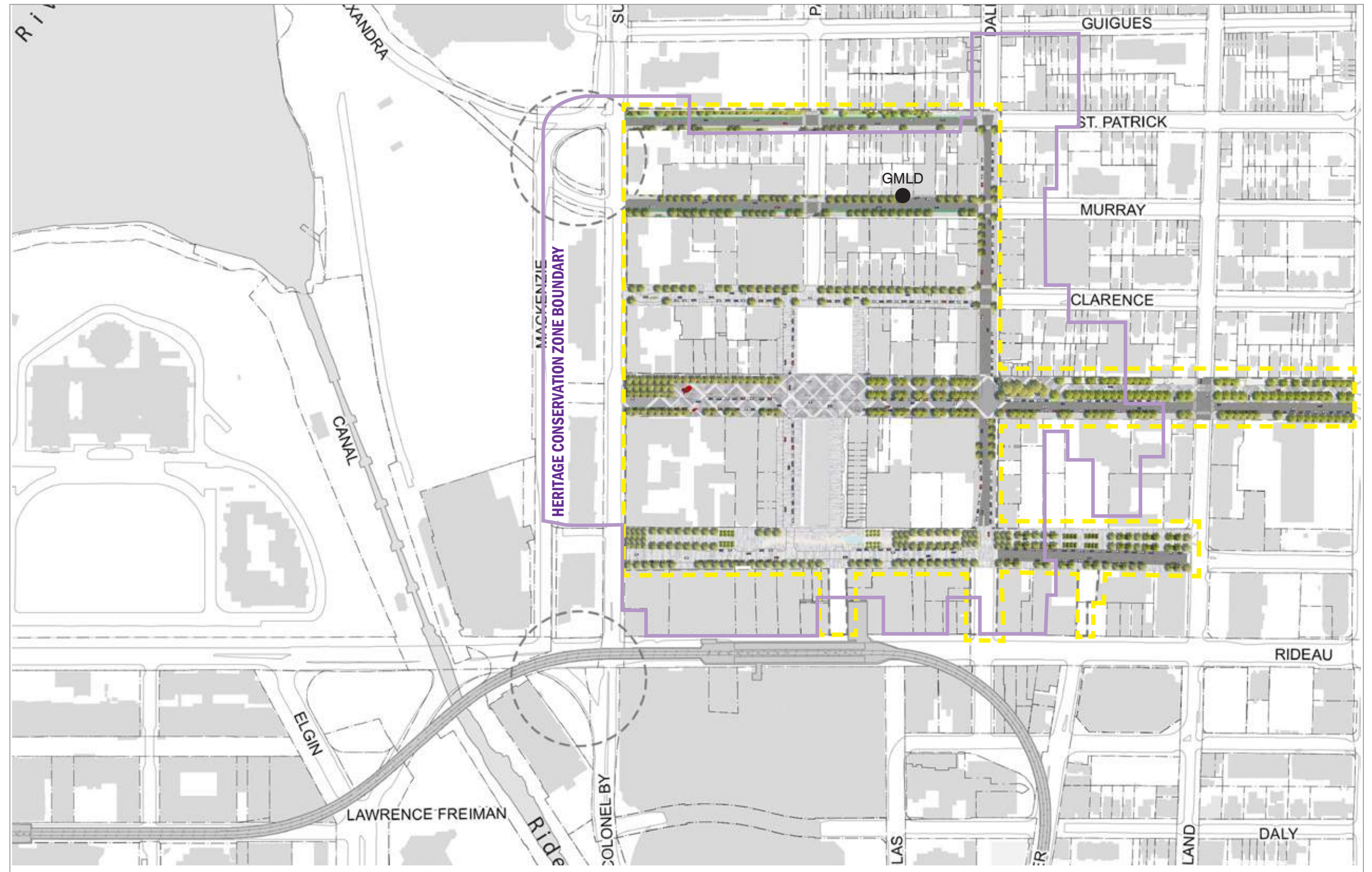


## PROJECT OVERVIEW

### LIGHTING SCOPE AREA

Gabriel Mackinnon Lighting Design (GMLD) has been located in the Byward Market for over 40 years. The Planning Partnership is developing a master plan for the area in concert with the Byward Market BIA, and has requested lighting input to enhance the report.

Project scope area is noted at right. Note that the scope area (yellow) falls almost completely within the Byward Market heritage Conservation District (purple).





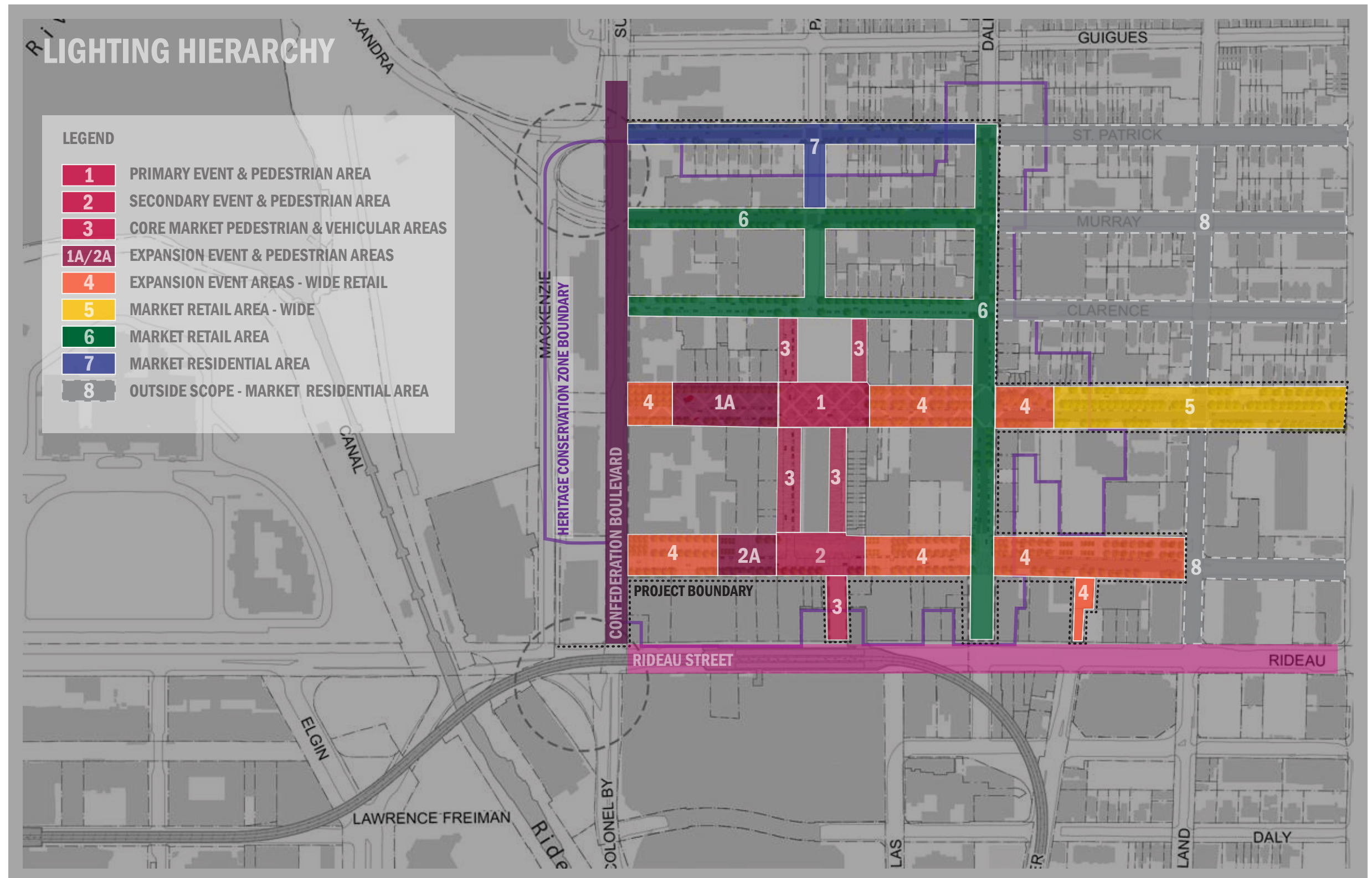
## PROJECT OVERVIEW

### LIGHTING HIERARCHY

Areas will be treated with varying levels of lighting corresponding to their importance in the master plan, radiating out from the heart of the market; the heritage and new market buildings.

### GENERAL NOTES

- Confederation Boulevard will continue to “own” Sussex”
- Rideau Street will retain it’s own commercial character
- Primarily residential areas outside of the scope may one day receive lighting and other street updates





**PLAZA LIGHTING INSPIRATION**  
POSSIBILITIES FOR ENRICHING CORE EVENT SPACE



LARGE SCALE ILLUMINATED RINGS (UNIVERSITY OF CHICAGO SHOWN)



STARRY NIGHT LIGHTING



POSSIBLE TO INCORPORATE SEASONAL ELEMENTS



INCORPORATE DYNAMIC / COLOURED LIGHT



LIGHT PATTERNING WITH GOBOS TO INTRODUCE TEXTURE AND INTEREST



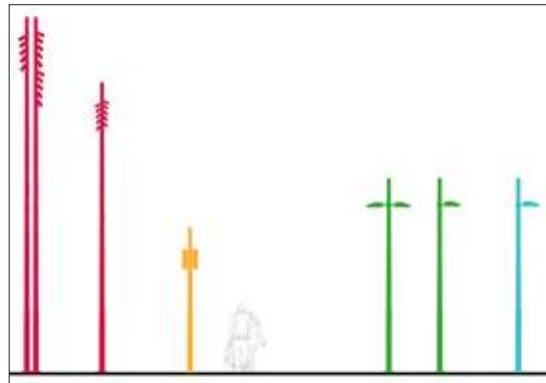
POSSIBILITY TO EXPRESS A STATEMENT COLOUR



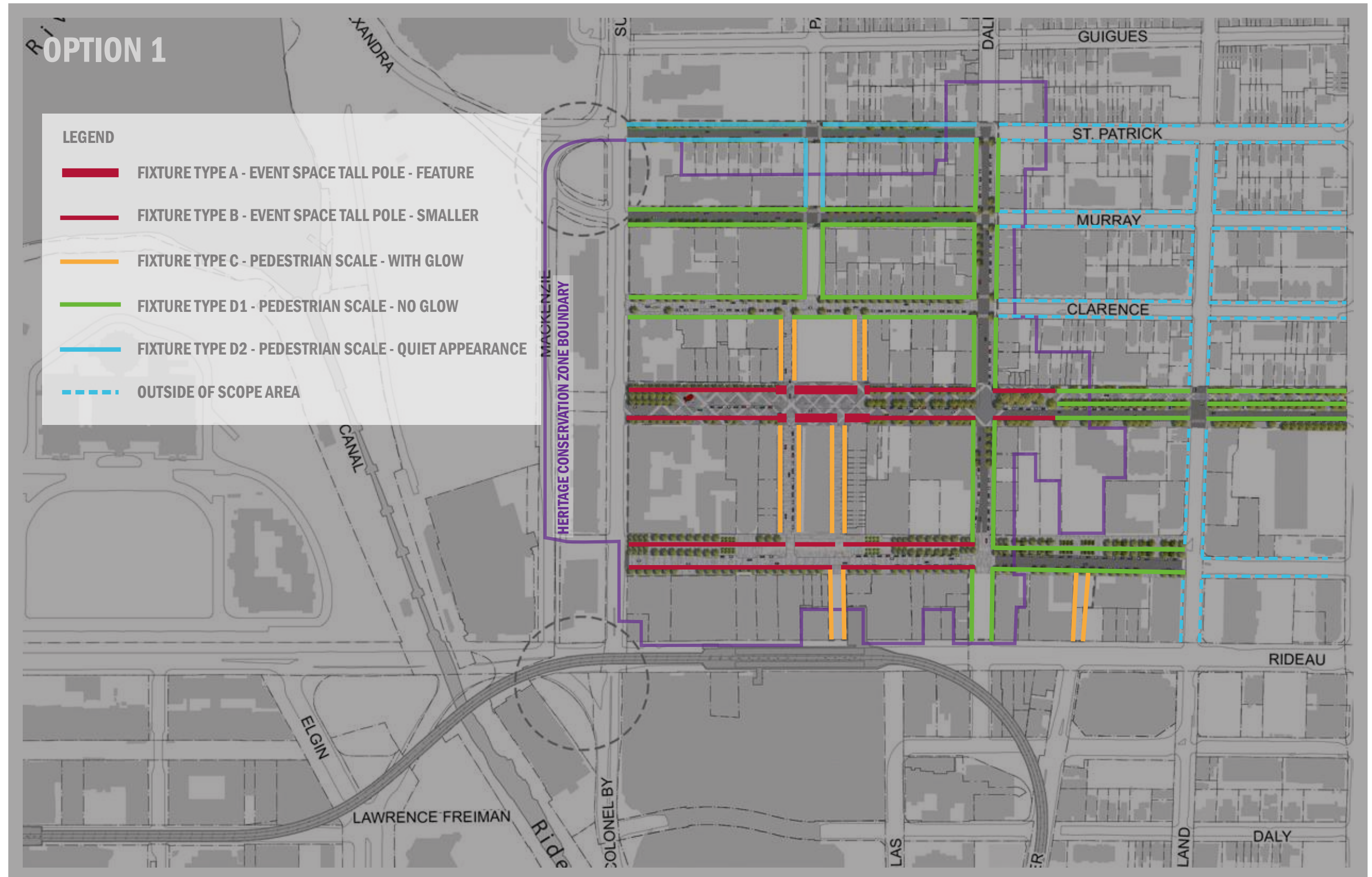
## OPTION 1

### DEDICATED LIGHTING SYSTEM

This lighting plan uses only one type of lighting per zone, to help establish the character of each type of space and aid in place-making and wayfinding.



FULL SIZED GRAPHIC ON FOLLOWING  
PAGES



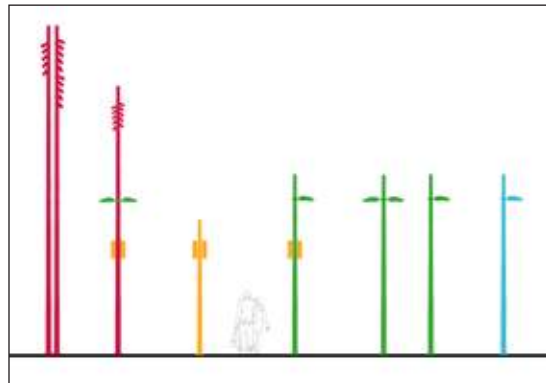


## OPTION 2

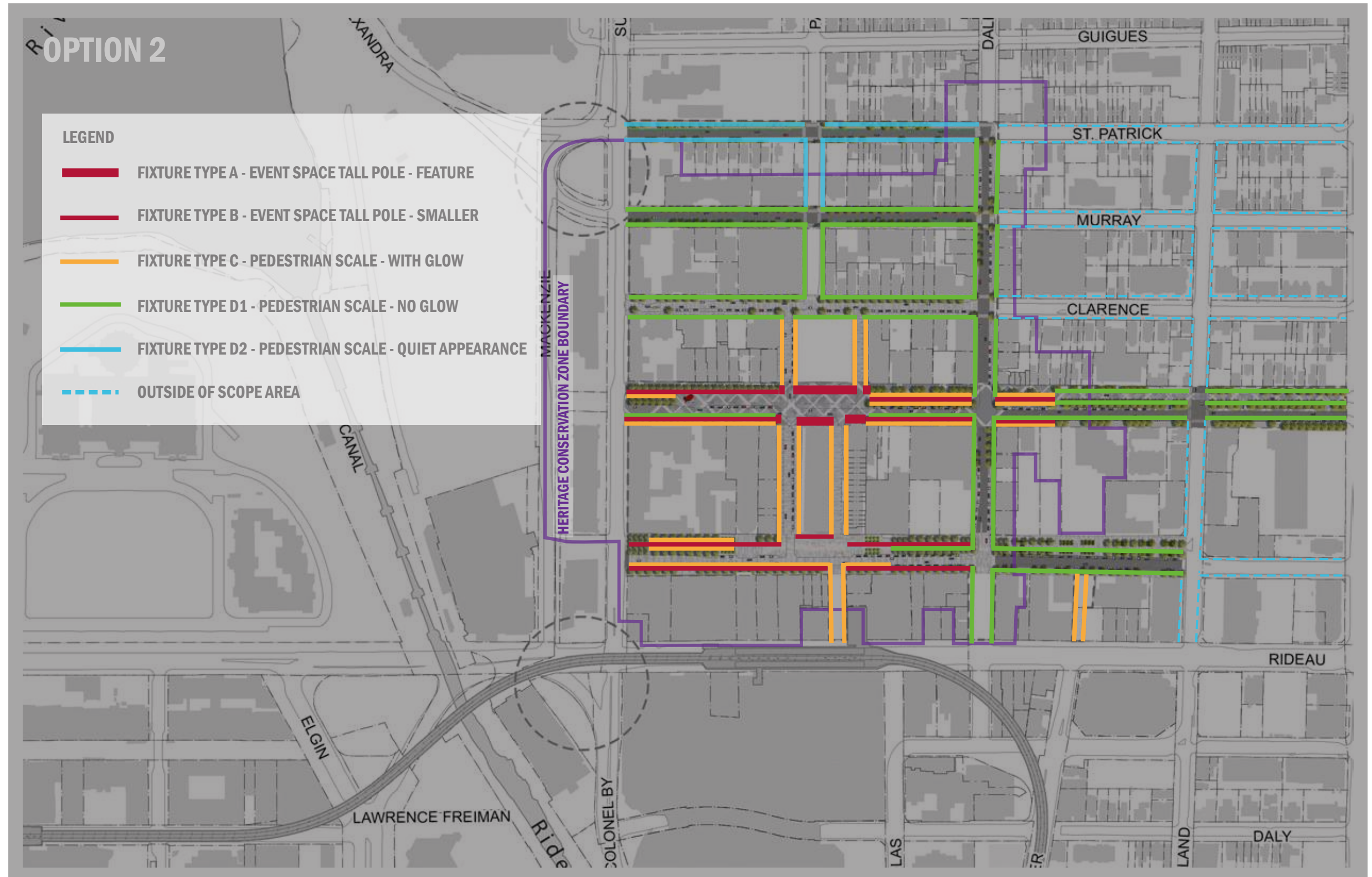
### COMPONENT LIGHTING SYSTEM

This lighting plan combines multiple types of lighting on single poles, providing tailored lighting for the variety of tasks that may occur in each zone (walking, driving, sitting, attending concerts).

Fixtures change in each zone to keep character with the surrounding streets, for example a bit of glow on fixtures to create a “living room” effect in pedestrian spaces, and quieter treatment on primarily residential streets.

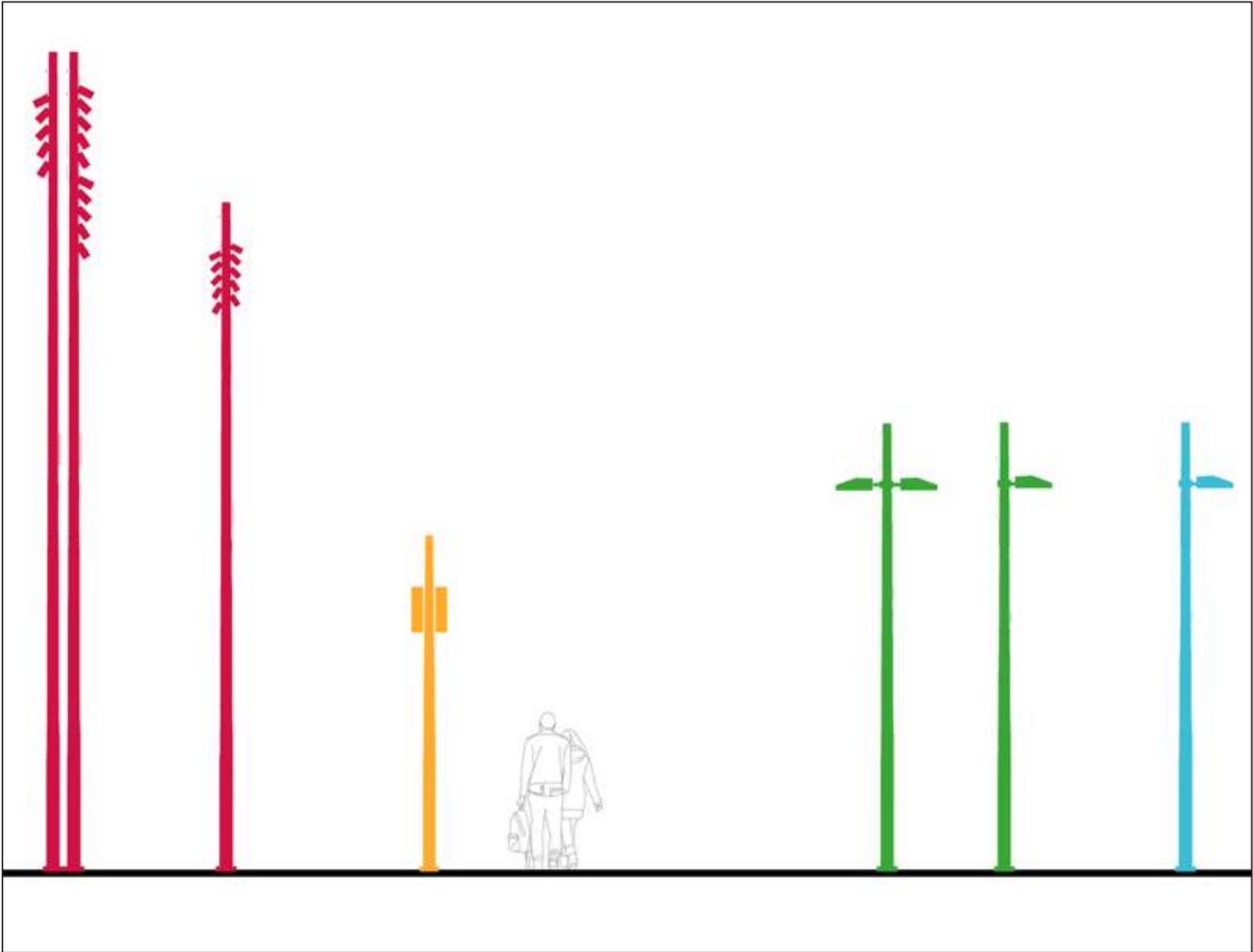


FULL SIZED GRAPHIC ON FOLLOWING  
PAGES

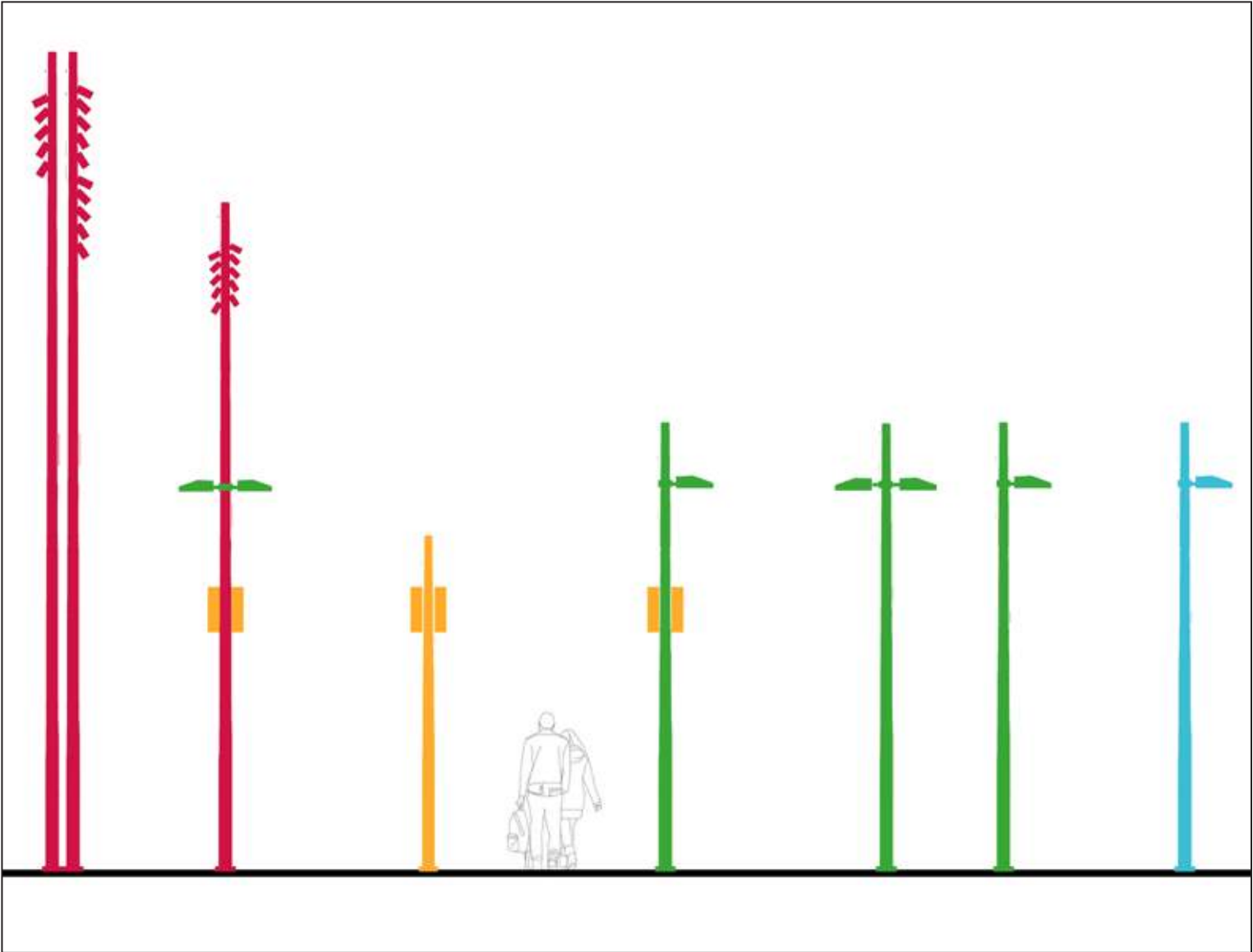


**FIXTURE TYPES**  
OPTIONS COMPARED

OPTION 1 - DEDICATED



OPTION 2 - COMPONENT





## **HISTORY OF THE BYWARD MARKET**

### *OTTAWA RIVER TIMBER INDUSTRY*

Established in 1826, the ByWard Market is one of Canada's oldest and largest public markets. Lt-Col. John By, the builder of the Rideau Canal, laid out the street plan of the Market, in a village he called Lower Town.

In the 1830s, Lower Town enjoyed a period of rapid commercial growth. Stores of every description, hotels, taverns and industrial buildings sprang up all around the market area. The first sawmill in Bytown was erected on York Street and was driven by the waters of the By Wash, a sluice from the Rideau Canal.

From 1850 to 1900, forestry in the Ottawa area was one of the largest industries in Canada, employing thousands in felling, rafting and milling lumber. Ottawa Valley lumber was exported around the world, and used locally and across Canada to build a growing nation.



TIMBER RAFT OTTAWA RIVER



BYWARD MARKET - ESTIMATED 1860s



## **LUMBER AESTHETIC**

### *A NOD TO HISTORY*

Lumber, as a formative force in the growth of the area, can be celebrated in the design of the Master Plan for the ByWard Market, and can be incorporated particularly easily into the lighting elements. Wood's warm texture receives light well and is an ideal material to incorporate into the lighting master plan.



DEMONSTRATING THE GLOW OF LIGHT ON WOOD SURFACE



WOOD LIGHT POLE EXAMPLES



## FIXTURE TYPES

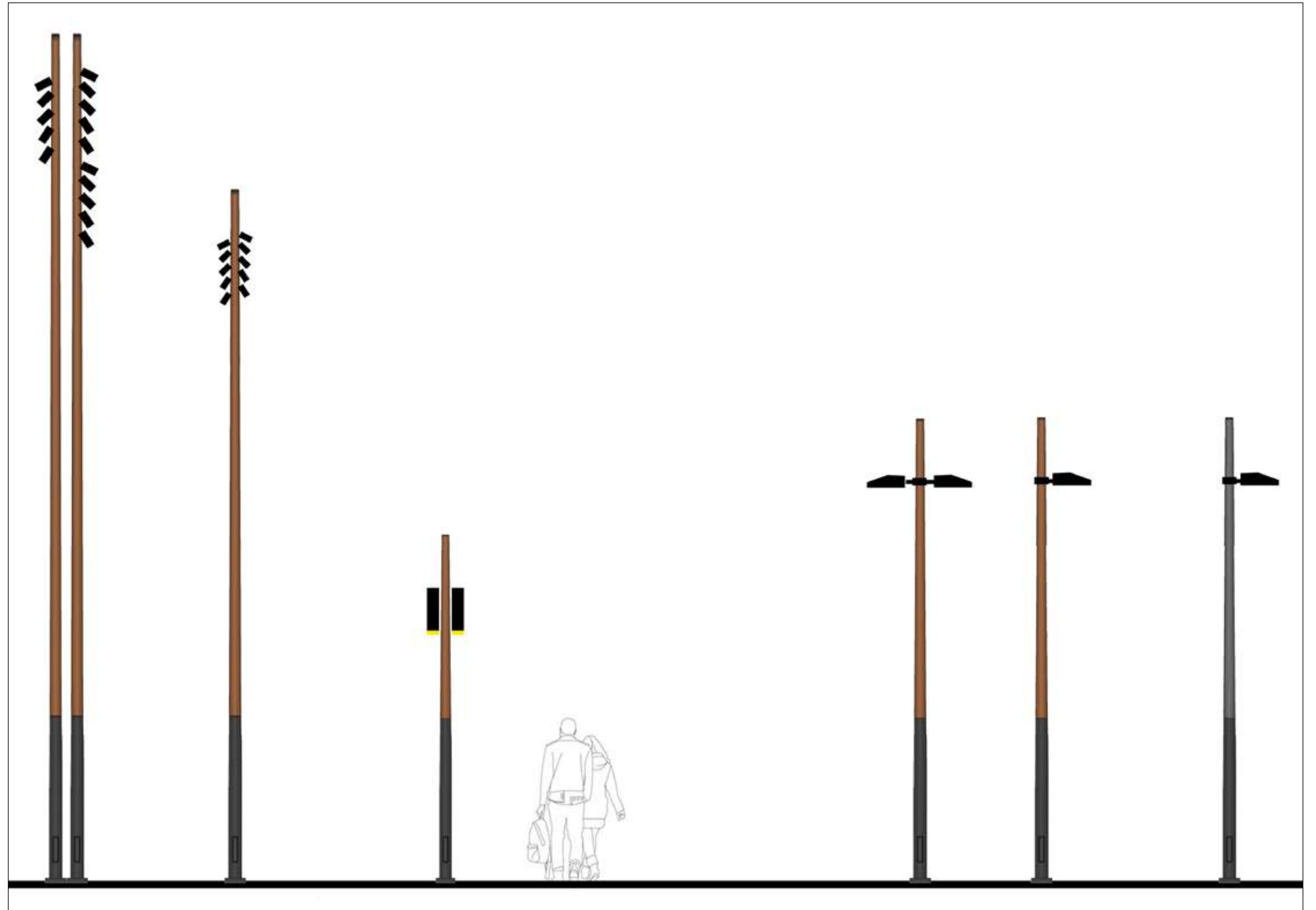
### VISUAL LANGUAGE

#### OPTION 1 - DEDICATED LIGHTING SYSTEM

This lighting plan uses only one type of lighting per zone, to help establish the character of each type of space and aid in place-making and wayfinding.



EXAMPLE FIXTURES FOR EACH TYPE





## FIXTURE TYPES

### VISUAL LANGUAGE

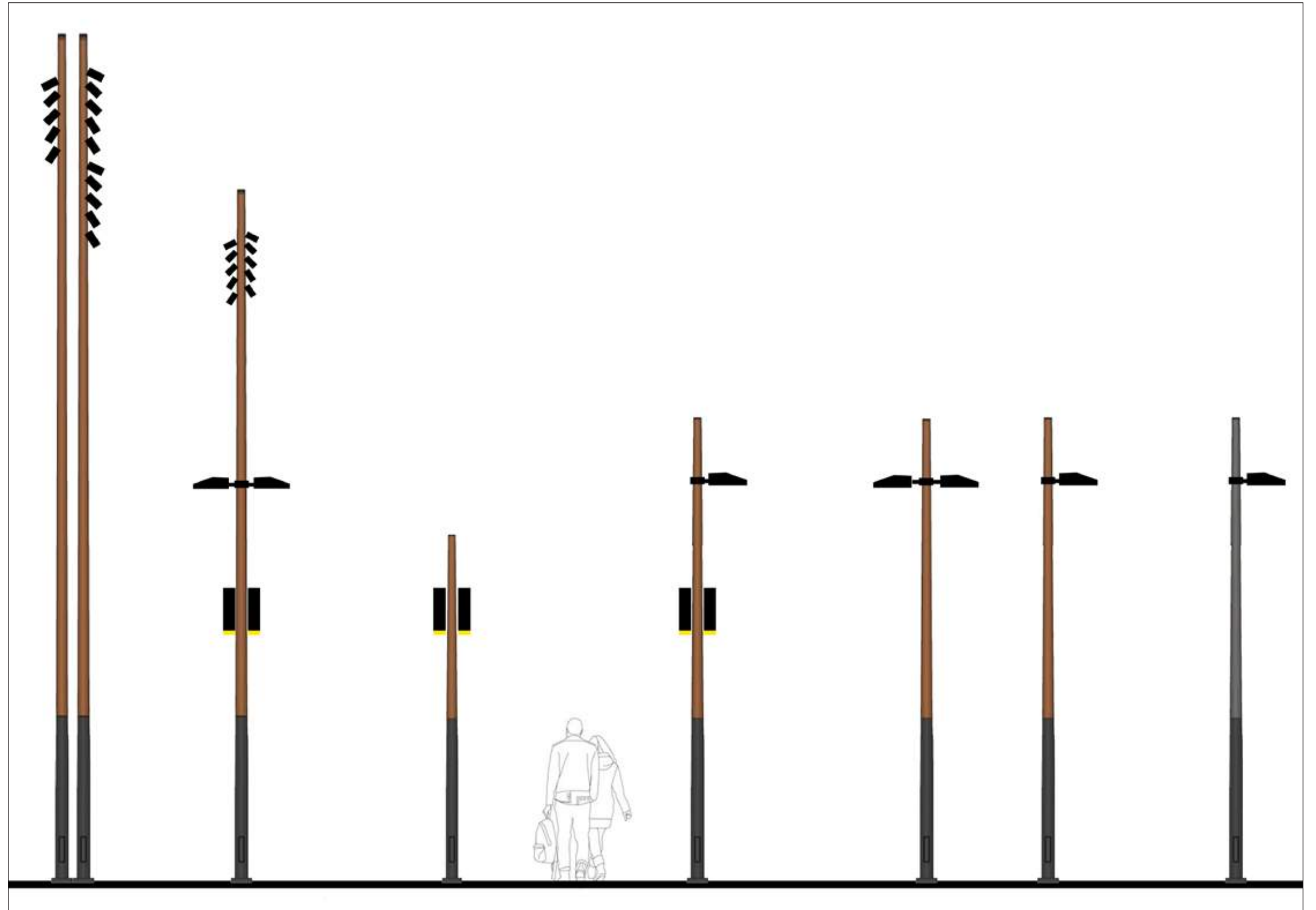
#### OPTION 2 - COMPONENT LIGHTING SYSTEM

This lighting plan combines multiple types of lighting on single poles, providing tailored lighting for the variety of tasks that may occur in each zone (walking, driving, sitting, attending concerts).

Fixtures change in each zone to keep character with the surrounding streets, for example a bit of glow on fixtures to create a “living room” effect in pedestrian spaces, and quieter treatment on primarily residential streets.

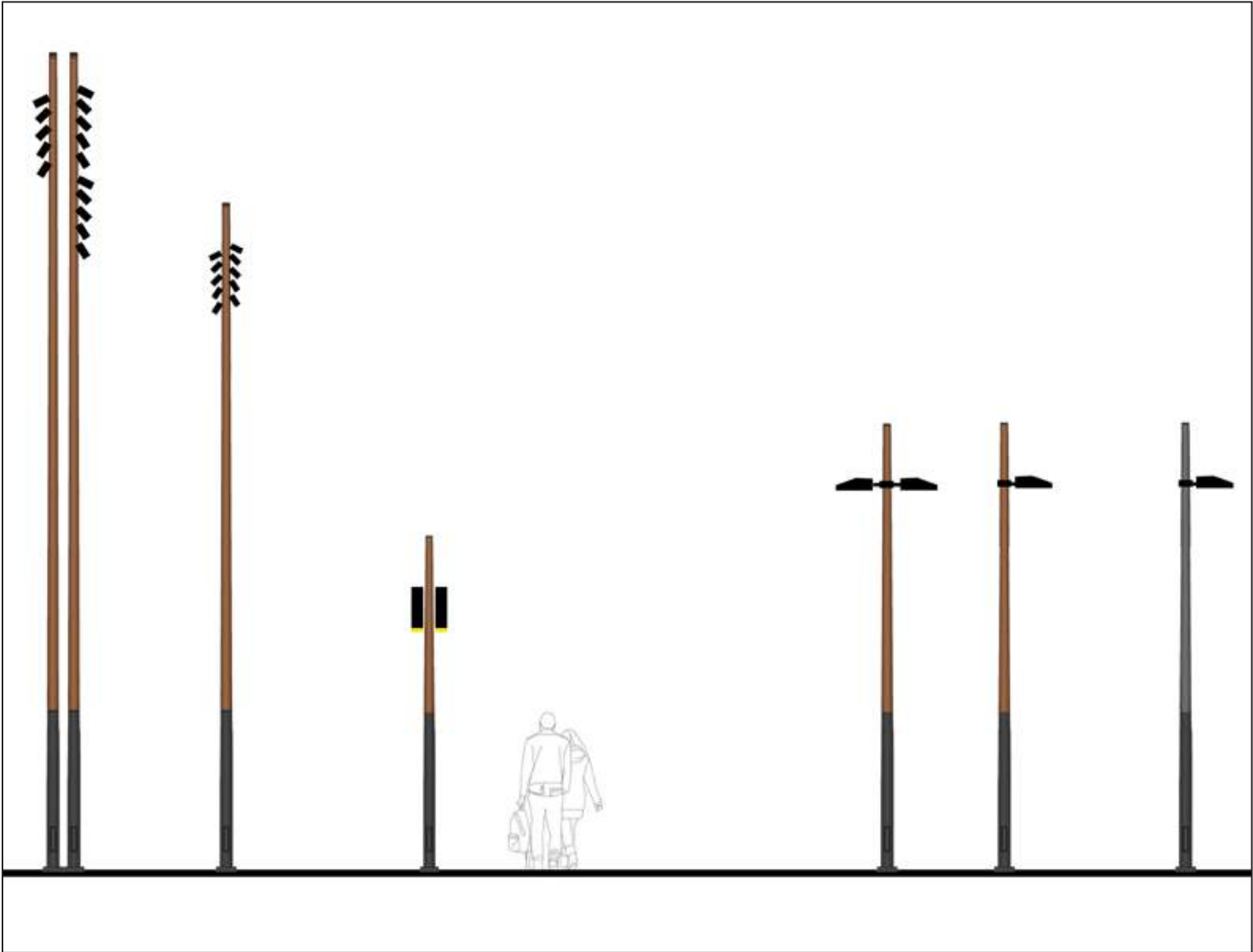


EXAMPLE FIXTURES FOR EACH TYPE

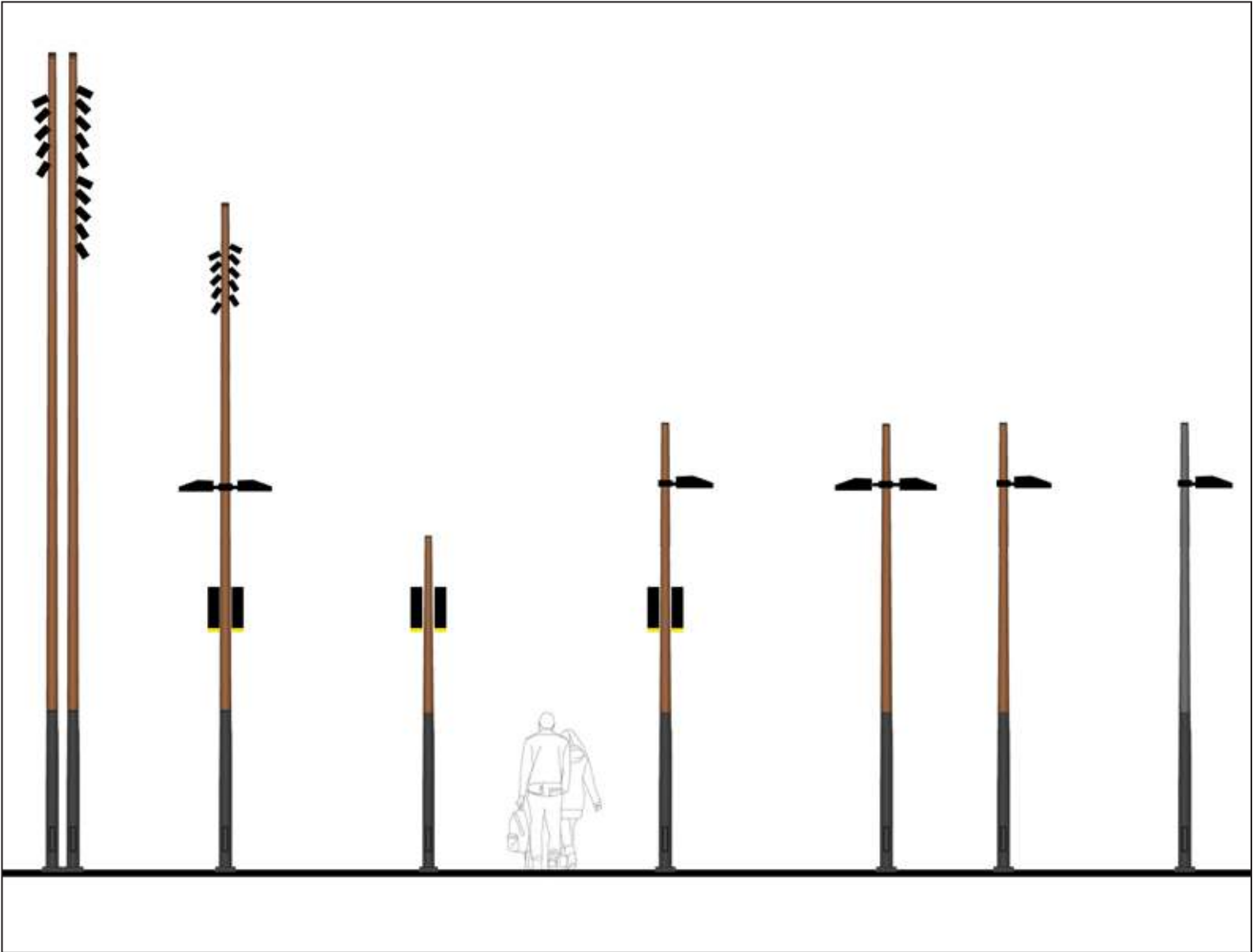


**FIXTURE TYPES**  
VISUAL LANGUAGE

OPTION 1 - DEDICATED



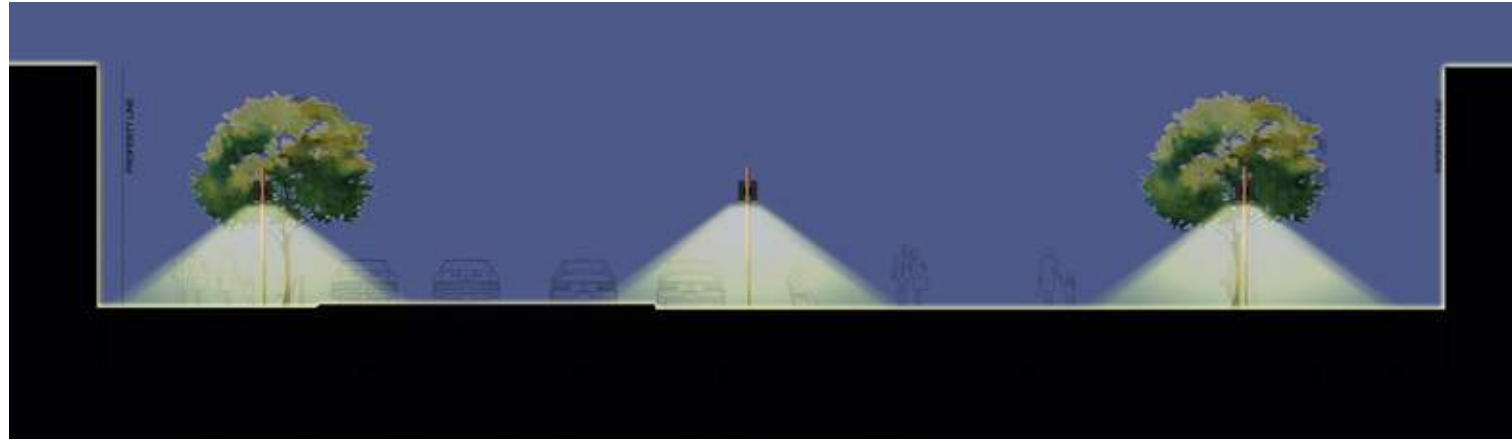
OPTION 2 - COMPONENT





## STREET SECTIONS

DEMONSTRATING SCALE OF LIGHTING POLES IN CONTEXT



YORK STREET BETWEEN SUSSEX AND BYWARD MARKET SQUARE - LOOKING WEST  
(SHOWING TYPE C FIXTURES)



SECTION THROUGH YORK BETWEEN BYWARD MARKET SQUARE AND DALHOUSIE - LOOKING WEST  
(SHOWING TYPE D FIXTURES)



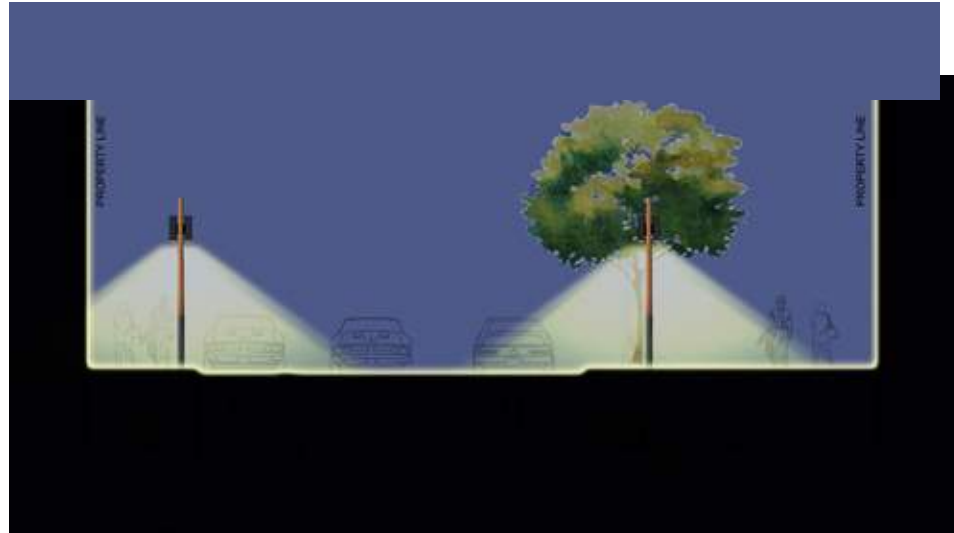
YORK STREET BETWEEN BYWARD MARKET SQUARE AND WILLIAM - LOOKING WEST  
(SHOWING TYPE A FEATURE POLES)



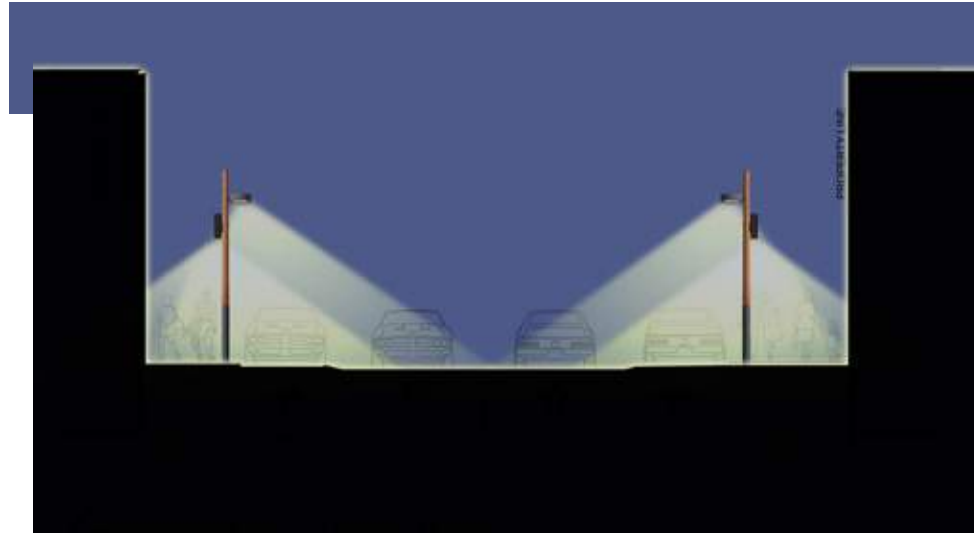
YORK STREET - LOOKING WEST  
(SHOWING TYPE B TALL POLES)

## STREET SECTIONS

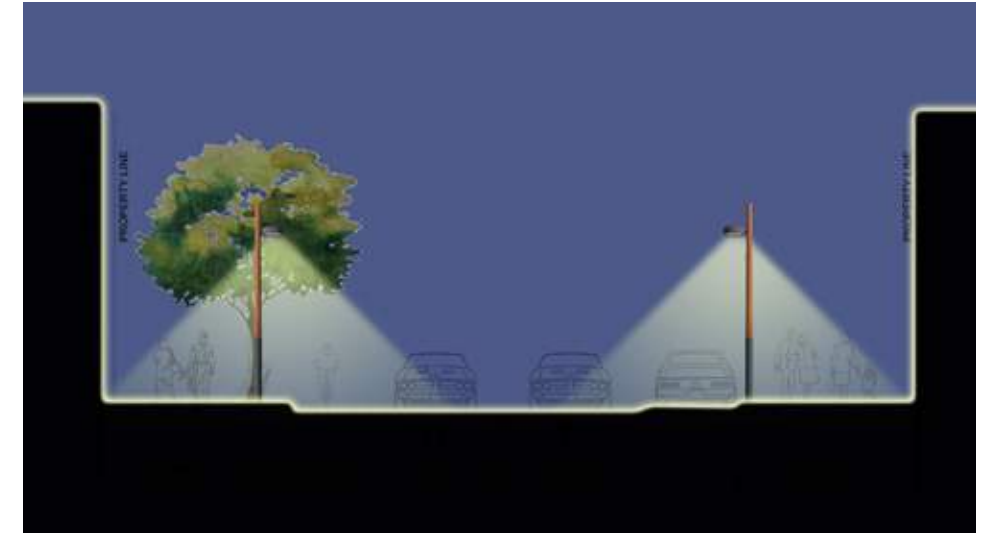
DEMONSTRATING SCALE OF LIGHTING POLES IN CONTEXT



CLARENCE STREET - LOOKING WEST  
(SHOWING TYPE C FIXTURES)



DALHOUSIE STREET - LOOKING NORTH  
(SHOWING COMBINED TYPE C / TYPE D FIXTURES)



MURRAY STREET - LOOKING WEST  
(SHOWING TYPE D FIXTURES)



## LIGHT FIXTURES BY TYPE

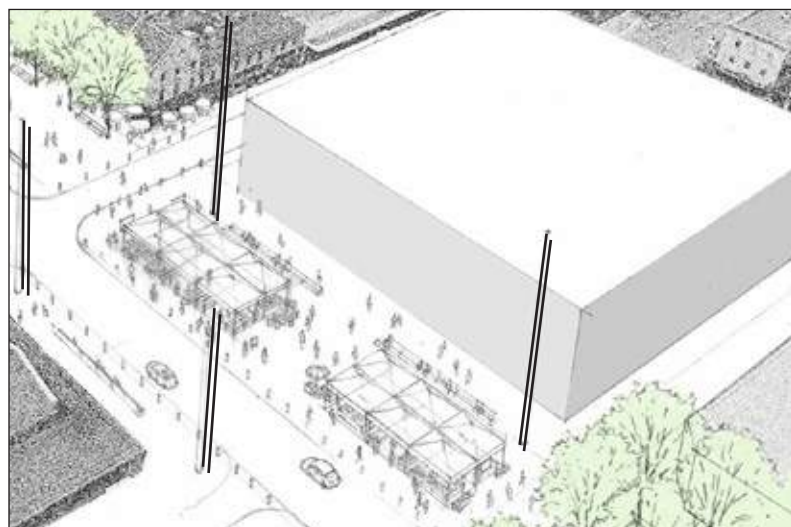
### DETAILS

#### FIXTURE TYPE A - HIGH MAST EVENT LIGHTING

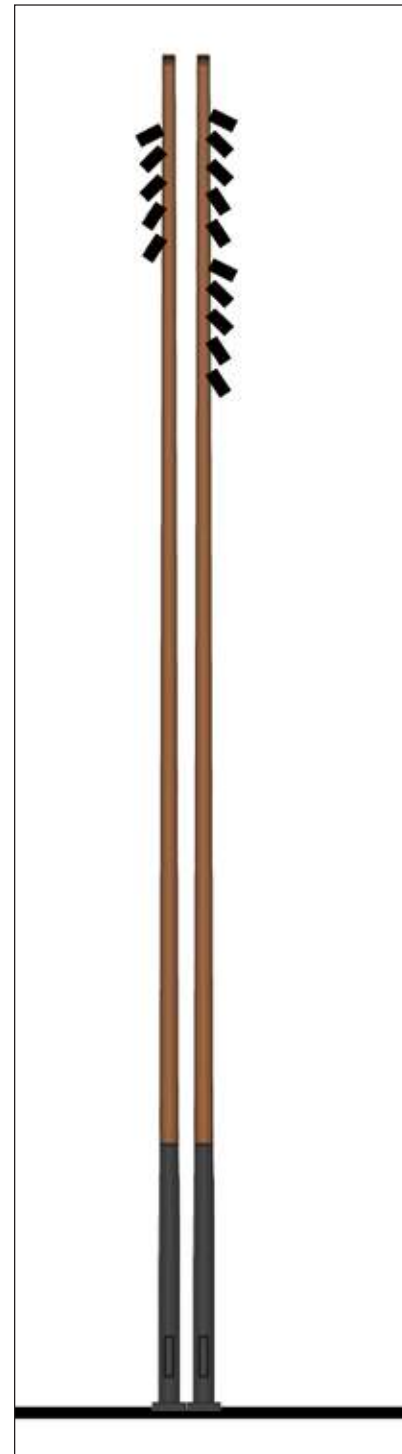
A family of tall poles is used to distinguish the core special event area. Fixtures are centralized onto a minimal amount of large poles to keep the plaza clear for events. This also celebrates the core event areas in a distinct way, assisting with place-making.

The four tall poles (to be located between the new and old market buildings) are proposed as paired, to further distinguish them and announce the importance of the area.

In all options, the paired feature poles are not to be used to mount any other light fixtures.



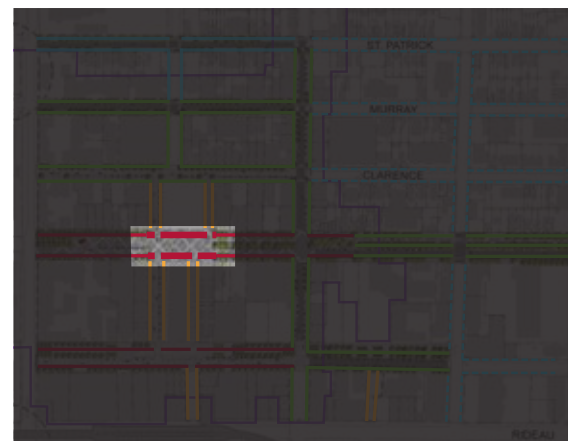
PAIRED FEATURE POLE LOCATIONS (PLAN PARTNERSHIP SKETCH)



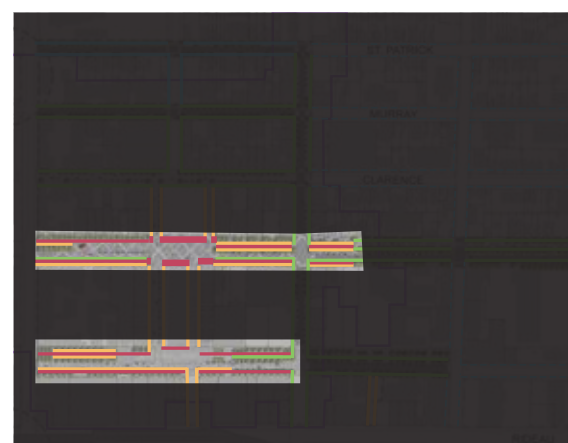
OPTIONS 1 & 2 - IN ALL CASES, FEATURE POLES ARE USED ONLY FOR PLAZA LIGHTING



SECTION ELEVATION



KEY PLAN - OPTION 1



KEY PLAN - OPTION 2



EXAMPLE FIXTURE MOUNTING

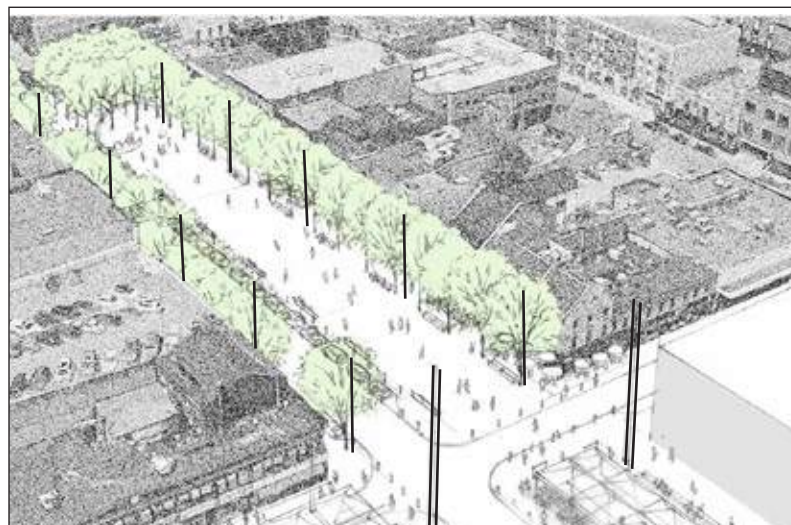
## LIGHT FIXTURES BY TYPE

### DETAILS

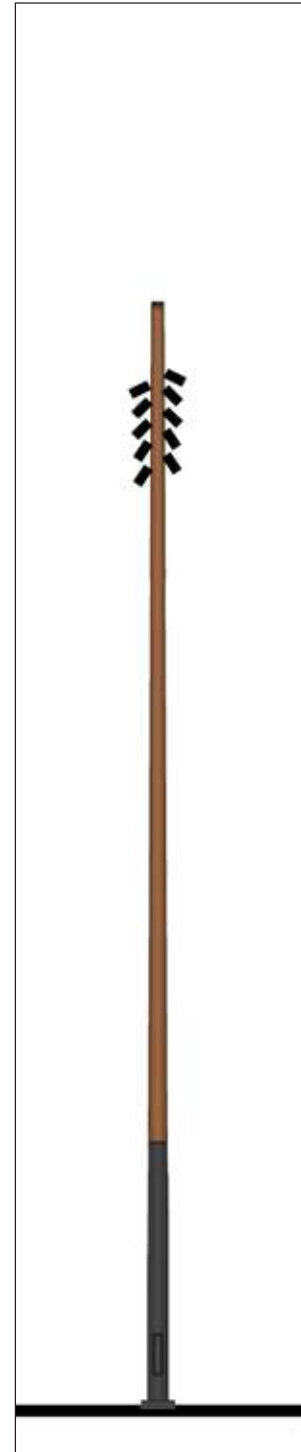
#### FIXTURE TYPE B - SMALLER SCALE EVENT AREA LIGHTING

A smaller member of the family of tall poles is used to link the expansion event areas to the core event area. Fixtures are centralized onto a minimal amount of large poles to keep the plaza clear for events. This also celebrates the core event areas in a distinct way, assisting with place-making.

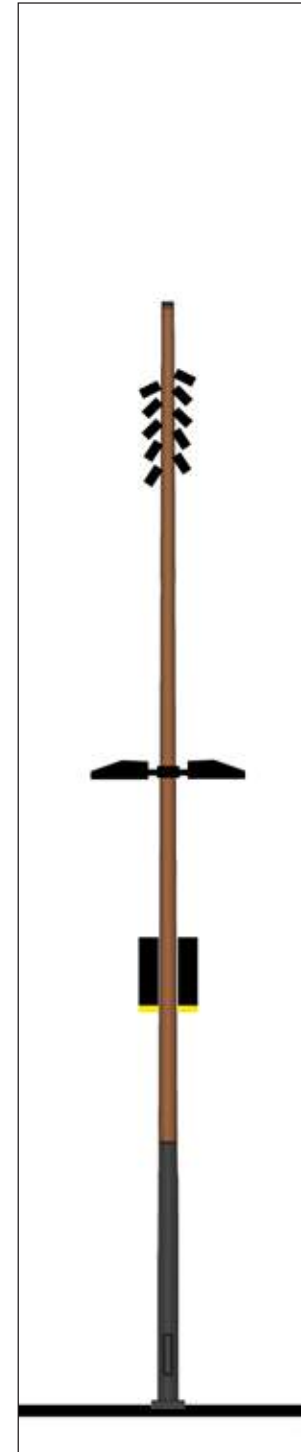
In Option 2, the tall poles are used to mount other area and ambient lighting fixtures.



POSSIBLE SMALLER SCALE EVENT SPACE FIXTURE LOCATIONS - TO BE CONFIRMED (PLAN PARTNERSHIP SKETCH)



OPTION 1 - DEDICATED LIGHTING POLES - FIXTURES ARE KEPT TO ONE DEDICATED FIXTURE TYPE



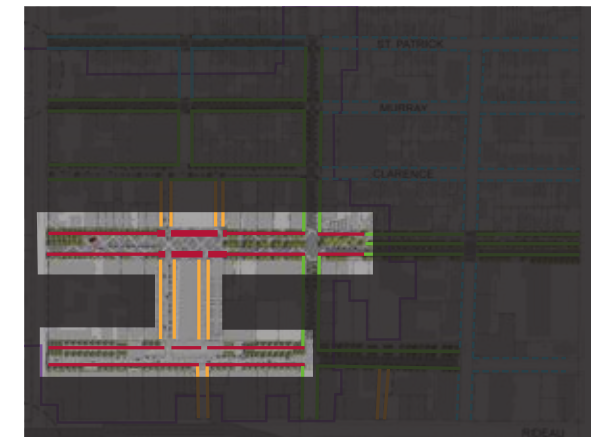
OPTION 2 - COMPONENT POLES - OTHER LIGHTING MAY BE MOUNTED TO FIXTURES



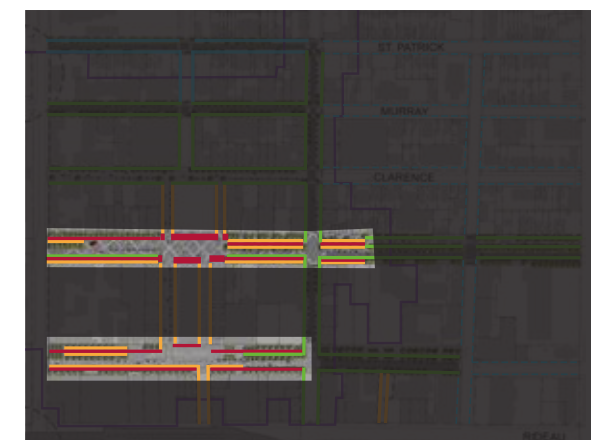
SECTION ELEVATION - WIDE STREET



SECTION ELEVATION - NARROW STREET



KEY PLAN - OPTION 1



KEY PLAN - OPTION 2



## LIGHT FIXTURES BY TYPE

### DETAILS

#### FIXTURE TYPE A - HIGH MAST EVENT AREA LIGHTING



MULTIPLE SMALL HEADS MOUNTED TO HIGH MAST POLES  
(GMLD PROJECT 2014 - CENTENNIAL PLAZA)



DETAIL IMAGES OF HIGH MAST POLES AT CENTENNIAL PLAZA -  
MULTITUDE OF HEADS LENDS SPARKLING APPEARANCE AT NIGHT



LARGER SCALE HEADS MAY BE USED TO ILLUMINATE ROADWAYS

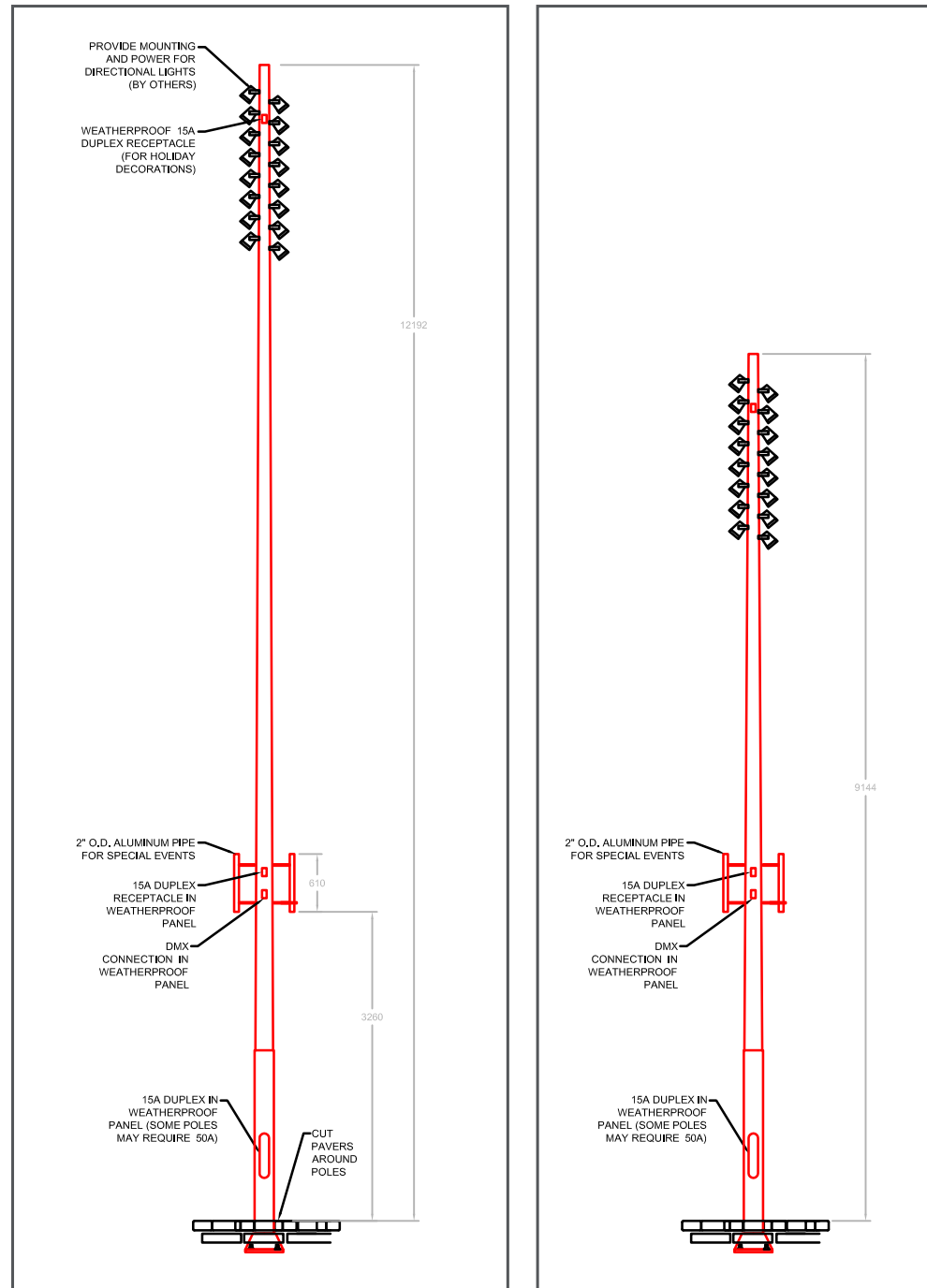


PAIRED POLES HELP DESIGNATE EVENT AREAS

## LIGHT FIXTURES BY TYPE

### DETAILS

#### FIXTURE TYPE A/B - EVENT AREA TALL POLE LIGHTING

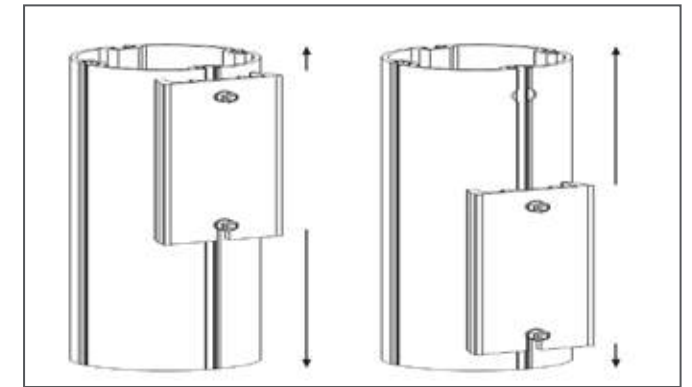


FAMILY OF TALL POLES WITH VARIOUS EQUIPMENT AS REQUIRED (BRACKETS FOR EVENT LIGHTING, POWER CONNECTIONS ETC.)

#### CONFIGURABLE POLES ALLOW INTEGRATION



POTENTIAL TO INCORPORATE SECURITY CAMERAS (ILLUSTRATED ABOVE), WIFI EQUIPMENT, LARGE BANNER ARMS ETC.



BOLT CHANNELS IN WOOD POLES TO ALLOW ACCESSORIES TO BE ADDED / REMOVED / MOVED EASILY



DETAIL - POWER OUTLETS INCORPORATED FOR PUBLIC USE, OR SEASONAL OR EVENT LIGHTING



DETAIL - SPEAKERS MOUNTED TO POLE



POTENTIAL FOR LARGE OR TRADITIONAL BANNERS (MORE DISCUSSION ON BANNER PAGE)



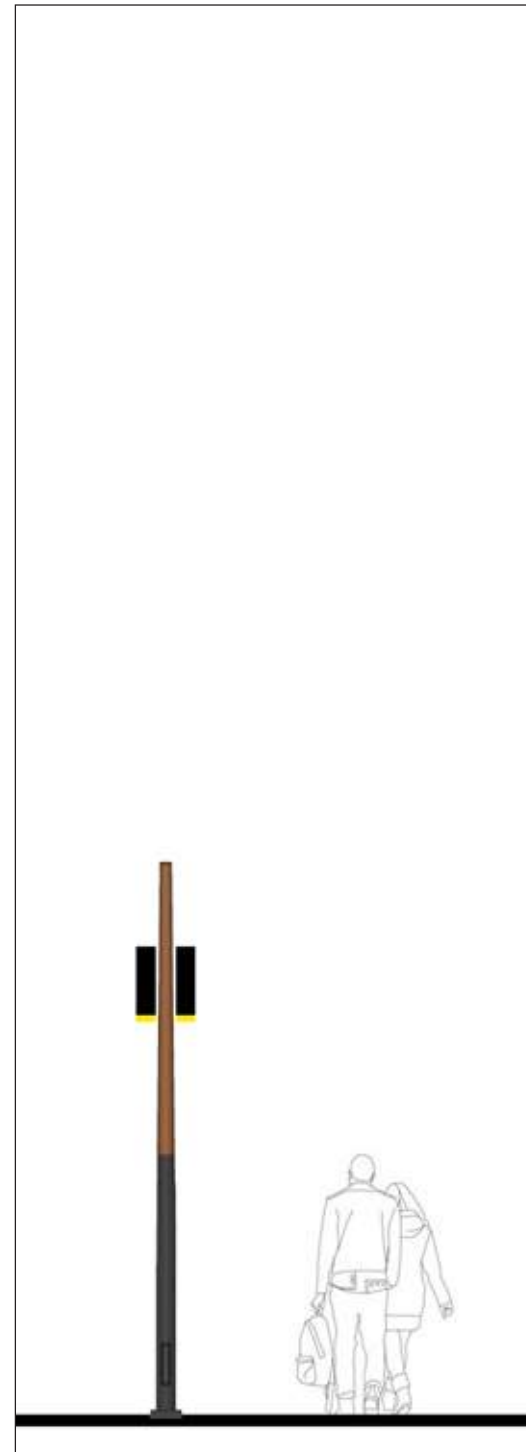
## LIGHT FIXTURES BY TYPE

### DETAILS

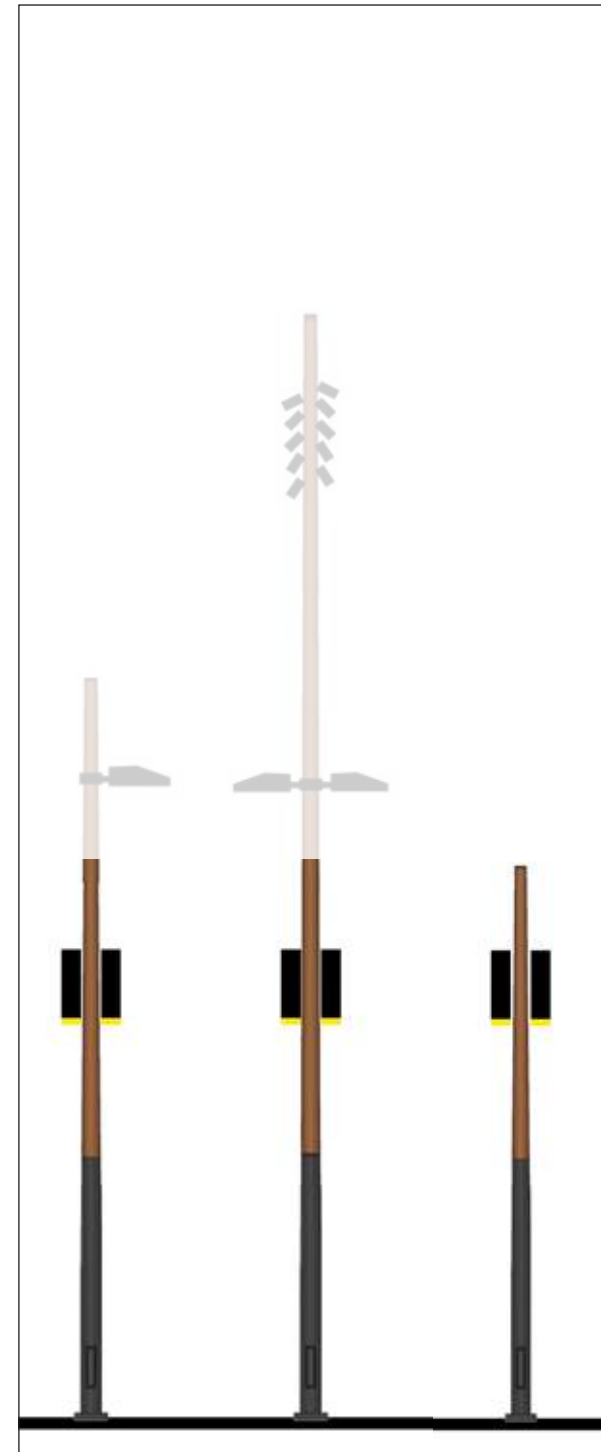
#### FIXTURE TYPE C - PEDESTRIAN SCALE GLOW

A smaller scale fixture with a bit of glow along the bottom edge is used to lend a living room effect to pedestrian scale streets, indicating to vehicles and pedestrians to slow down, explore and enjoy.

In Option 2, these heads may be mounted on a variety of pole types, as required to suit the needs of the different streets.



**OPTION 1 - DEDICATED LIGHTING POLES** - FIXTURES ARE KEPT TO ONE DEDICATED FIXTURE TYPE



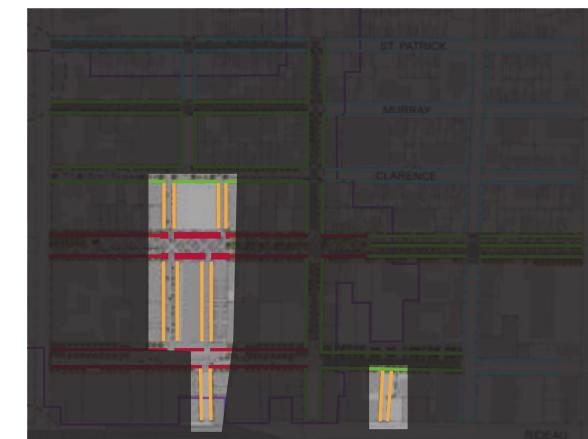
**OPTION 2 - COMPONENT POLES** - FIXTURE HEAD MAY BE MOUNTED TO ONE OF SEVERAL DIFFERENT TYPES OF POLES



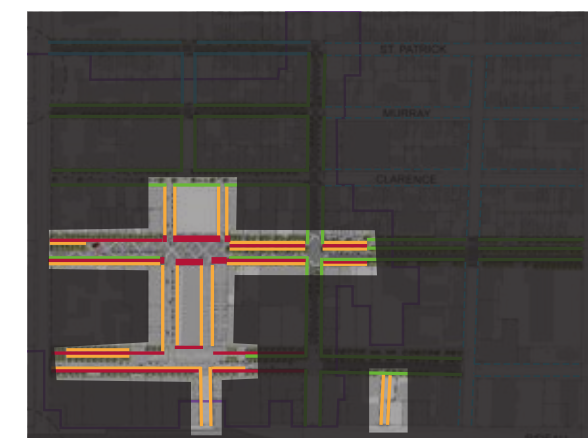
SECTION ELEVATION - WIDE STREET



SECTION ELEVATION - NARROW STREET



KEY PLAN - OPTION 1



KEY PLAN - OPTION 2



EXAMPLE FIXTURE WITH GLOW

## LIGHT FIXTURES BY TYPE

### DETAILS

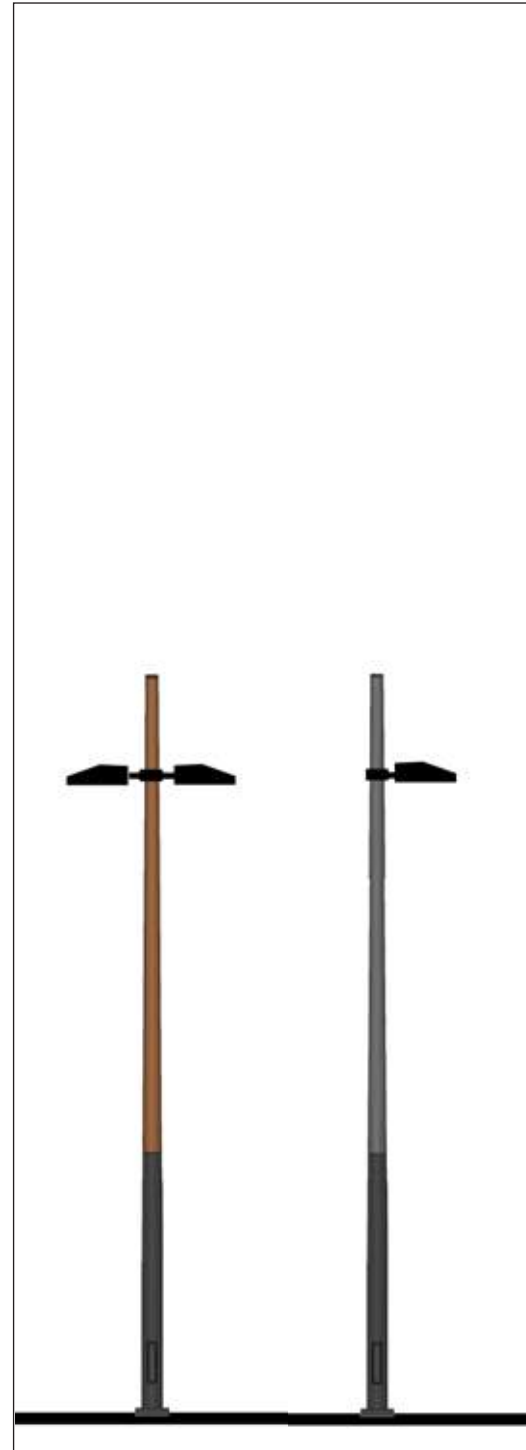
#### FIXTURE TYPE D1 / D2

##### PEDESTRIAN SCALE LIGHTING - NO GLOW

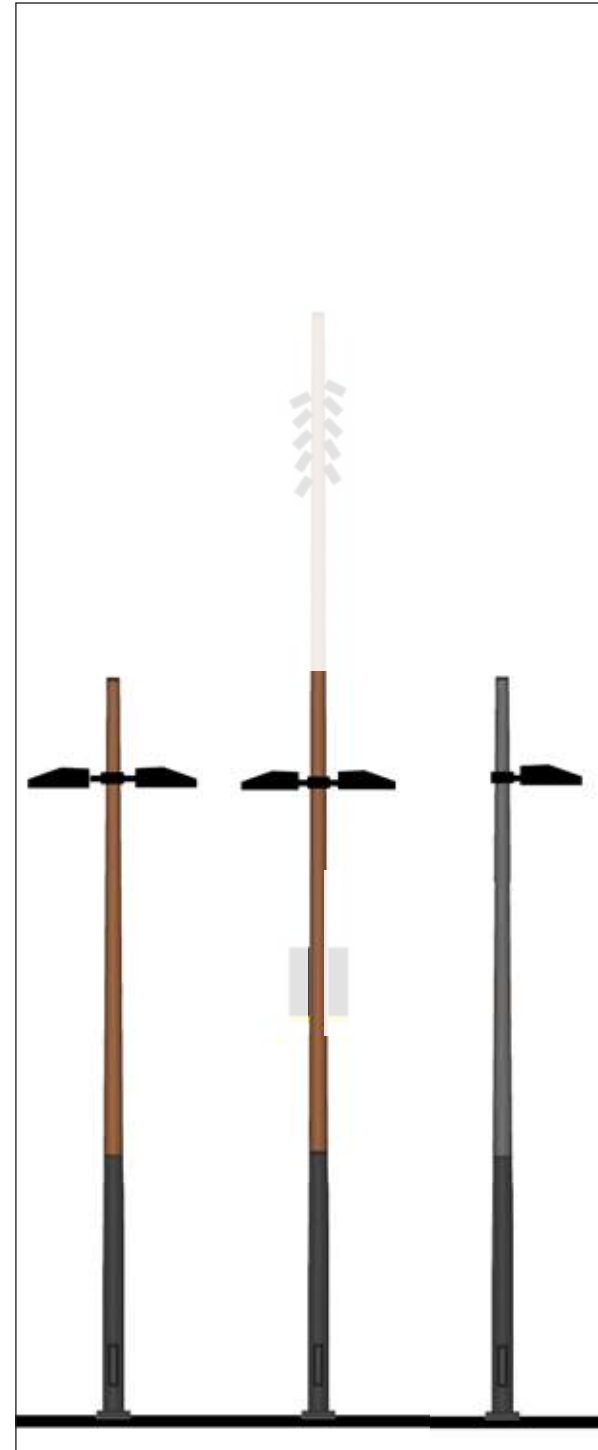
A smaller scale fixture brings a human scale to pedestrian scale streets, providing low-glare, functional lighting for sidewalks and roadways.

Wood or grey poles may be employed on a street by street basis, with glowing wood lending a warm ambiance to retail streets, and cooler grey indicating residential streets, for local traffic only. This provides a subtle cue to aid in wayfinding and placemaking.

In Option 2, these heads may be mounted on a variety of pole types, as required to suit the needs of the different streets.



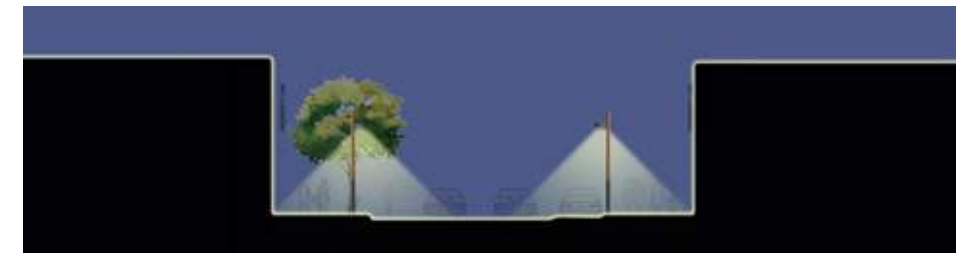
**OPTION 1 - DEDICATED LIGHTING POLES** - FIXTURES ARE KEPT TO ONE DEDICATED FIXTURE TYPE



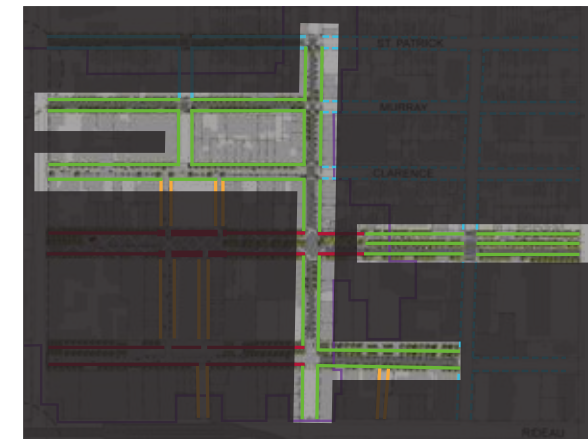
**OPTION 2 - COMPONENT POLES** - FIXTURE HEAD MAY BE MOUNTED TO ONE OF SEVERAL DIFFERENT TYPES OF POLES



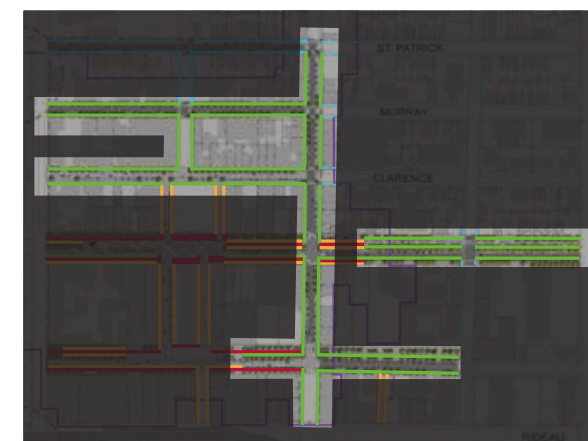
SECTION ELEVATION - WIDE STREET



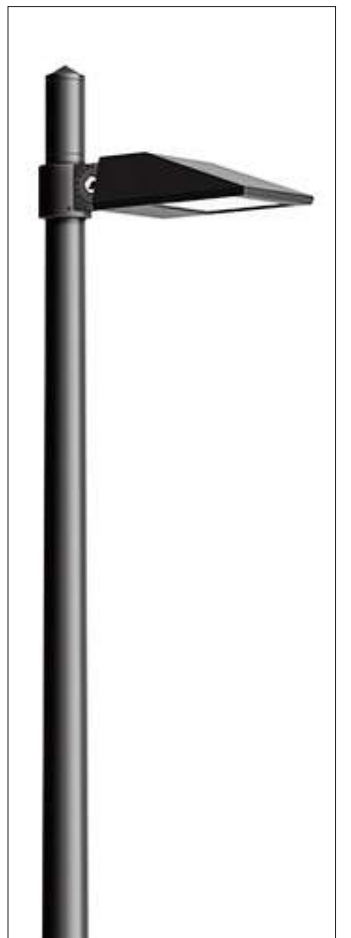
SECTION ELEVATION - NARROW STREET



KEY PLAN - OPTION 1



KEY PLAN - OPTION 2



EXAMPLE FIXTURE



## BANNERS & SIGNAGE

### INSPIRATION

The light fixture poles can carry banners or signs depicting ByWard Market branding, seasonal themes, event promotion or public art.

The high mast poles in the event area in particular can be made very sturdily, and would therefore be able to bear very large banners or artwork.



SCHEMATIC SHOWING BANNERS MOUNTED TO VARIOUS POLE SIZES



POSSIBLE TO SUSPEND LARGER BANNERS BETWEEN POLES



EXISTING MARKET SIGNAGE - MAY BE REPLACED WITH AN UPDATED WAYFINDING STRATEGY



VISUAL IMPACT OF MULTIPLE BANNERS



ACCOMMODATE ART EXHIBITS



HELP ESTABLISH "BRAND" FOR MARKET AREA

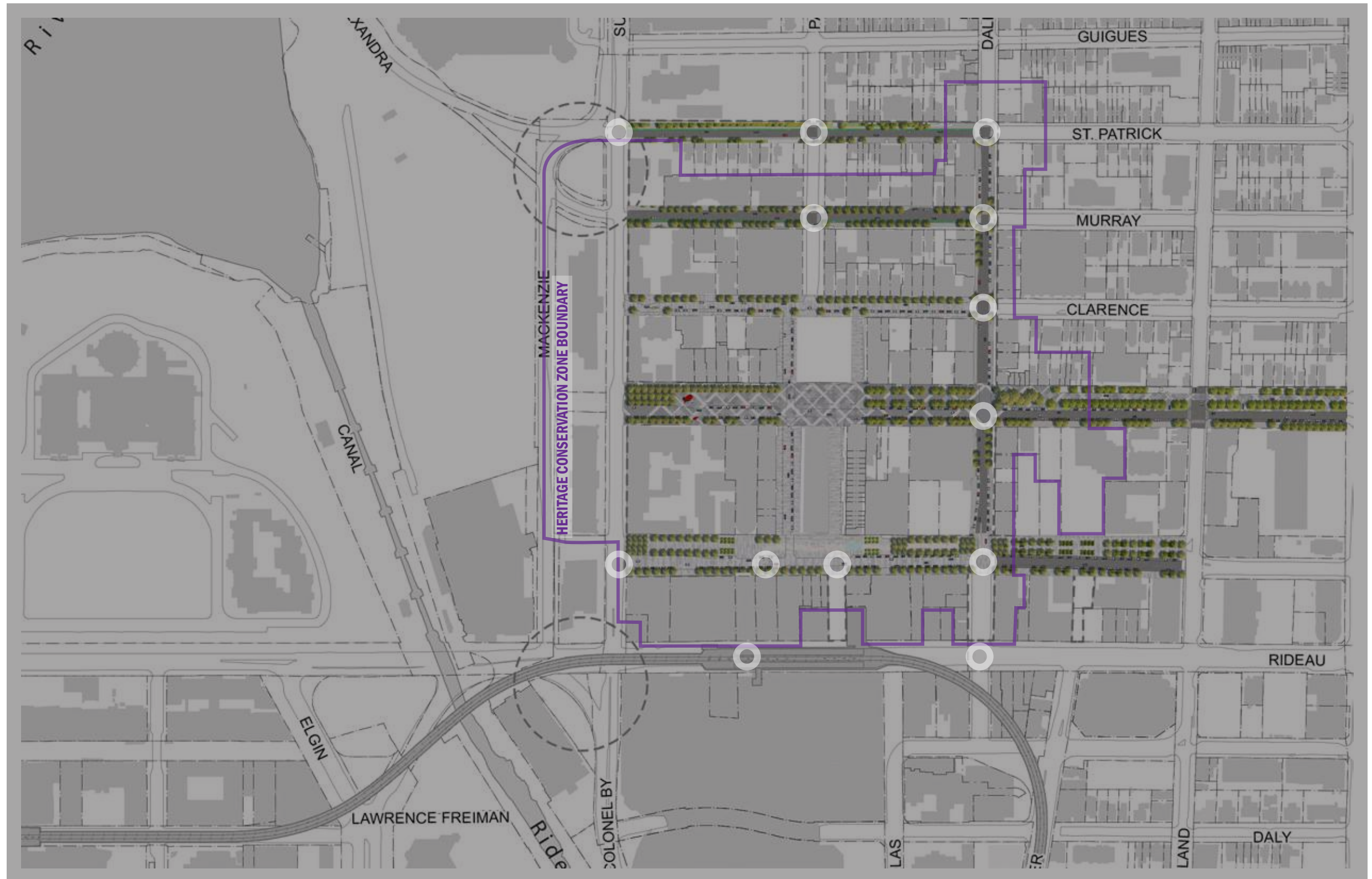


## INTERSECTIONS

### INTERFACING WITH OTHER LIGHTING SYSTEMS

Intersections will retain streetlighting and signage on separate poles. New lighting will in principle remain separate from traffic lights and street signage.

Signaled intersections are noted with a circle at right.

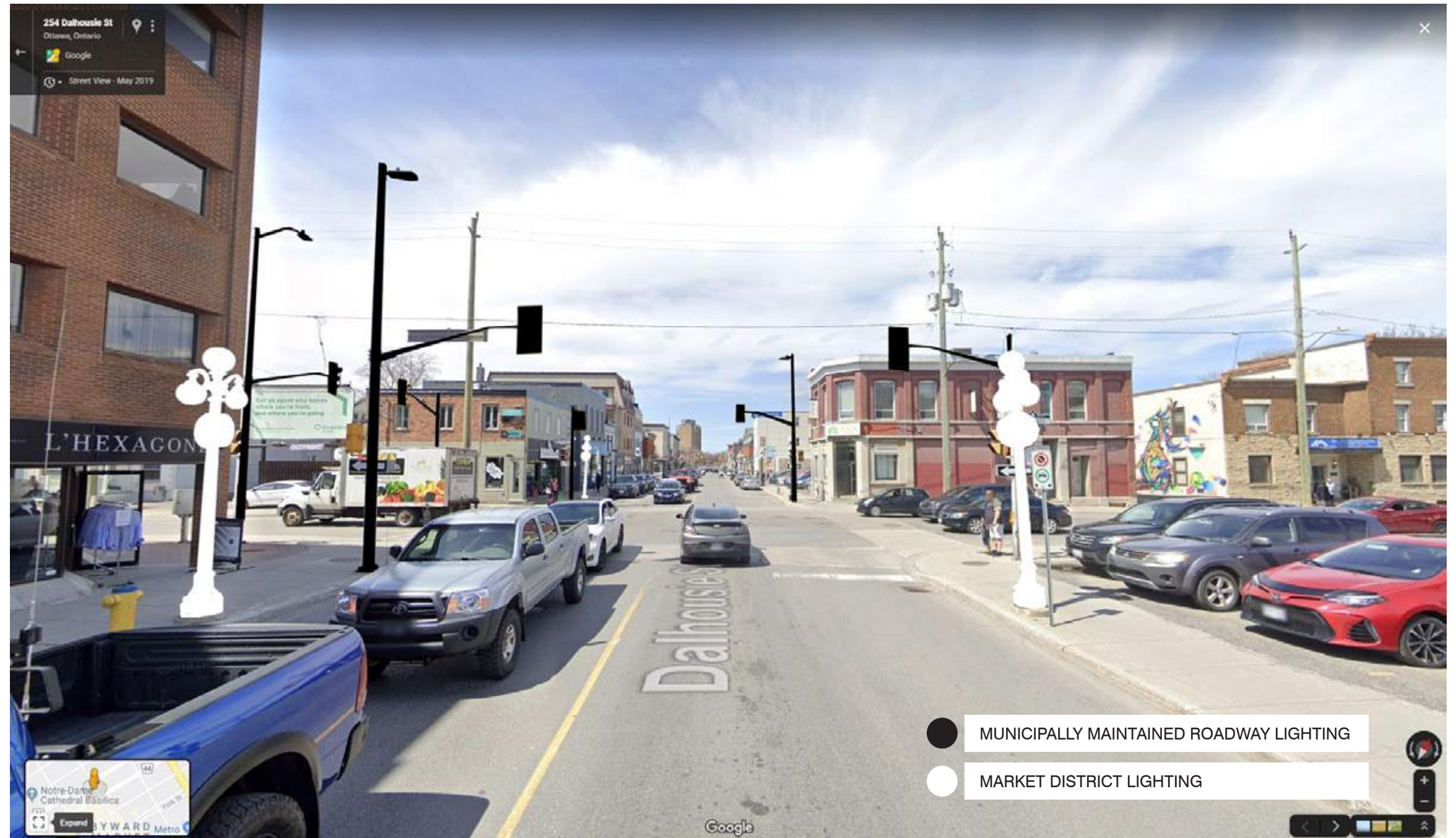




## INTERSECTIONS

### CURRENT CONDITIONS

Intersections will retain streetlighting and signage on separate poles.  
New lighting will in principle remain separate from traffic lights and street signage.



**CURRENT CONDITIONS** - MARKET DISTRICT LIGHTING BRACKETS MUNICIPALLY MAINTAINED ROADWAY LIGHTING AT INTERSECTIONS.  
THIS APPROACH TO BE MAINTAINED. (GOOGLE STREET VIEW 2019)



## **FACADE LIGHTING**

### *APPLYING FACADE LIGHTING PRINCIPLES FOR BYWARD MARKET AREA*

Illuminating the facades of buildings is an important element of the nocturnal ambiance of the ByWard Market area, lending an inviting ambiance and providing comforting “walls” to define the space for the nighttime visitor. This is currently done in a piecemeal manner, as many of the buildings are privately owned and managed.

Chapter 6 of the Capital Illumination Plan offers comprehensive guidelines for lighting buildings.

There is an opportunity for the streetlighting to wash onto facades, however much of the area is residential on the second floor and up, and light trespass must be considered.



CURRENT LIGHTING CONDITIONS - BYWARD MARKET



FACADE ILLUMINATION VIA STREETLIGHTING (DUBROVNIK)



PLANNING LEVEL BUDGETS

PRELIMINARY AND SUBJECT TO CHANGE

Rough budget figures are provided for described lighting solutions, however they must be used with caveats. The lighting design has not been detailed for every typical street cross section or particular location.

**This report does not comprise a budgeted layout.**

The following factors can greatly affect pricing:

- Quantities and locations of fixtures and poles can be changed fairly drastically to suit the streetscape, while keeping the quantity of lumens on the street and sidewalk the same. This would greatly affect the equipment and install costs.
- Tall feature poles (Types A and B) are estimates only, as fixtures would likely be custom items for which budget pricing is not available.
- Changes in market conditions for specification grade lighting
- Currency fluctuations and raw material cost changes
- Shipping and installation for large scale products like feature poles is subject to carrier

The budgets are provided per described pole **for preliminary planning purposes only**. They are for fixture equipment only and do not include allowances for installation or electrical wiring.

IES ILLUMINANCE STANDARDS USED

TYPE	ROADWAY	AREA	Minimum Maintained Avg Lux	Uniformity (Avg / Min)
Roadway	Major Collector	Mixed Use Centre	12.0	3.0
Roadway	Local	Mixed Use Centre	9.0	6.0
Intersection	Collector / Collector	Mixed Use Centre	24.0	3.0
Intersection	Collector / Local	Mixed Use Centre	21.0	6.0
Sidewalk	Major Collector		5.0	4.0
Sidewalk	Collector		3.0	4.0

RECOMMENDED LIGHT LEVEL TARGETS - USED TO DETERMINING APPROXIMATE FIXTURE SPACING (SEE CITY OF OTTAWA RIGHT OF WAY LIGHTING PLAN FOR MORE DETAILS)

TYPE	DESCRIPTION	MOUNTING	LOCATION	POLE HEIGHT	STREET WIDTH	FIXTURE SPACING	QTY	BUDGET	TOTAL
AP	Doubled Event Space Feature Pole - Approx 12m - Wood with Metal Base	Pole	York Street Plaza	12.0 m	n/a	n/a	1	\$ 28,000	\$ 28,000
AL	Floodlight luminaire for feature poles	Yoke	York Street Plaza				12	\$ 1,250	\$ 15,000
	Total for 1 Pole and 12 Heads	Four poles located throughout plaza							\$ 43,000
	Plus allowance for accessories (Banner connections etc.)						1	\$ 2,000	\$ 2,000
A	TOTAL PER LOCATION		4 poles / 12 heads per pole for 3500 sq.m. York Street Plaza Area						\$ 45,000
BP	Primary Streets Single Feature Poles - Approx 9m - Wood with Metal Base	Pole	York Street	9.0 m	40 m	30.5 m	1	\$ 20,000	\$ 20,000
BL	Floodlight luminaire for feature poles	Yoke	York Street				8	\$ 1,250	\$ 10,000
	Total for 1 Pole and 8 Heads	One Pole on each side of street							\$ 30,000
	Plus allowance for accessories (Banner arms, Hooks for planter baskets, etc.)						1	\$ 2,000	\$ 2,000
B	TOTAL PER LOCATION								\$ 32,000
CP	Pedestrian Scale Pole - Approx 16' - Wood with metal base	Pole	Various	4.8 m	13 m	21.3 m	1	\$ 4,500	\$ 4,500
CL	Cylinder Downlight with glowing edge	Pole	Various				2	\$ 2,000	\$ 4,000
	Total for 1 Pole and 2 Heads	One Pole on one side of street							\$ 8,500
	Plus allowance for accessories (Banner arms, Hooks for planter baskets, etc.)						1	\$ 1,500	\$ 1,500
C	TOTAL PER LOCATION								\$ 10,000
D1P	Street Scale Pole - Approx 20' - Wood with metal base	Pole	Various	6.0 m	18.5 m	30 m	1	\$ 5,000	\$ 5,000
DL	Full cut off flat glass face architectural streetlight luminaire	Pole	Various				1	\$ 2,100	\$ 2,100
	Total for 1 Pole and 1 Head	One Pole on each side of street (alternating)							\$ 7,100
	Plus allowance for accessories (Banner arms, Hooks for planter baskets, etc.)						1	\$ 900	\$ 900
D1	TOTAL PER LOCATION								\$ 8,000
D2P	Street Scale Pole - Approx 20' - Grey	Pole	Various	6.0 m	18.5 m	30 m	1	\$ 3,100	\$ 3,100
DL	Full cut off flat glass face architectural streetlight luminaire	Pole	Various				1	\$ 2,100	\$ 2,100
	Total for 1 Pole and 1 Head	One Pole on each side of street (alternating)							\$ 5,200
	Plus allowance for accessories (Banner arms, Hooks for planter baskets, etc.)						1	\$ 800	\$ 800
D2	TOTAL PER LOCATION								\$ 6,000

BUDGETS BY POLE TYPE



**THANK YOU**

