

FEHR PEERS



Sir Francis Drake Boulevard Corridor Rehabilitation

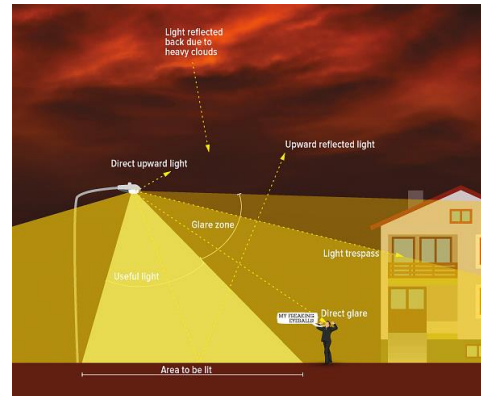
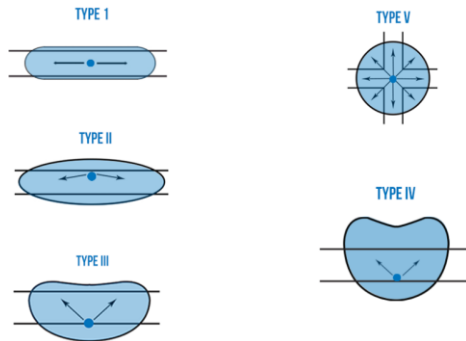
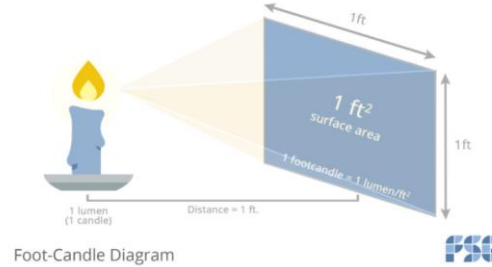
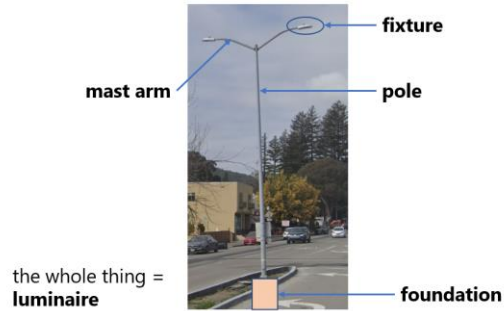
Lighting Assessment Update

Meeting Agenda & Objectives

- **Refresher of Previous Discussion**
- **Additional Analysis & Design Refinement**
- **Presentation of Our Recommended Modifications (And Expected Outcomes)**

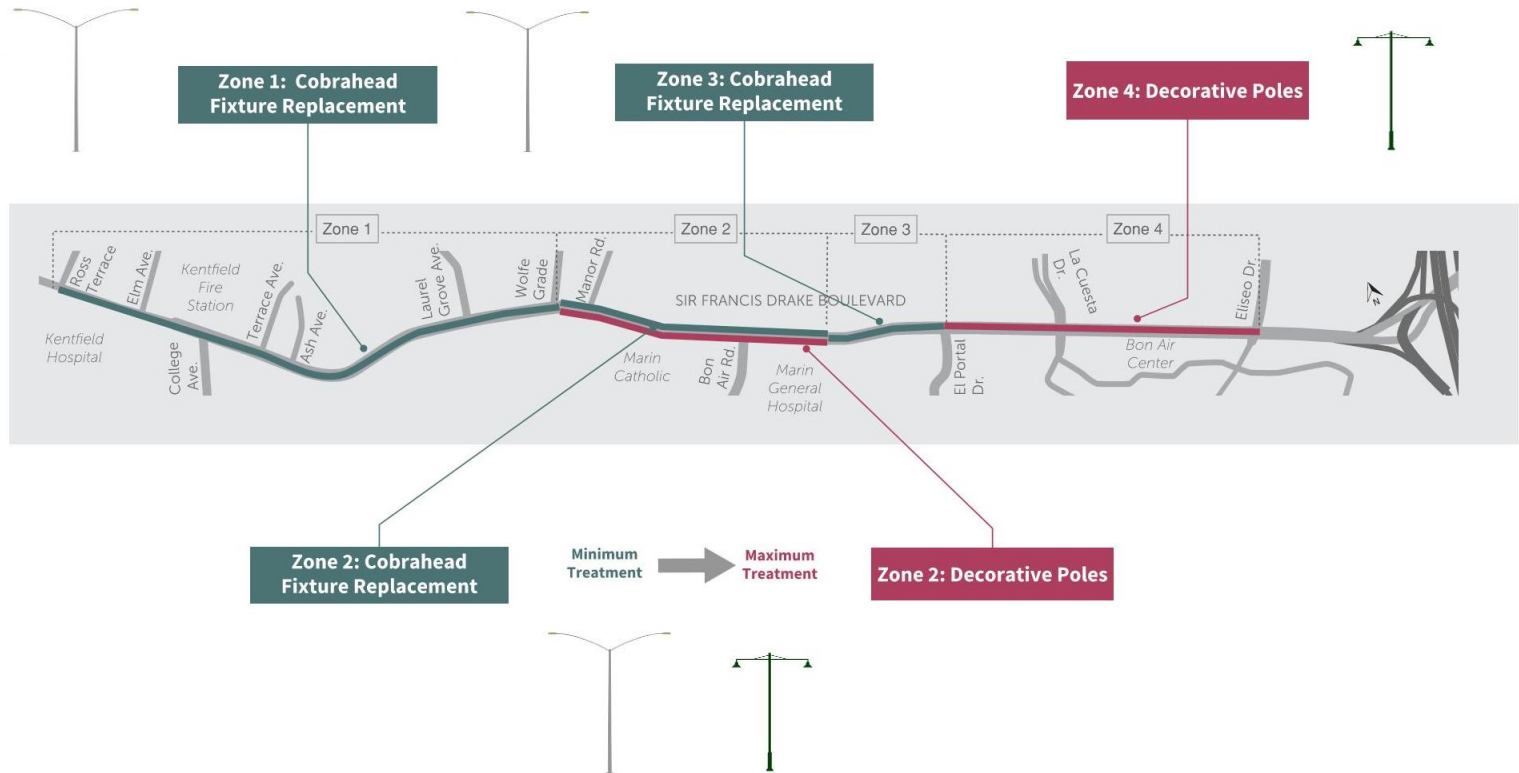
Refresher of Previous Discussion

Refresher

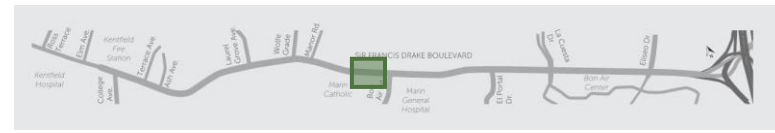


Road and Pedestrian Conflict Area		Pavement Classification (Minimum Maintained Average Values)			Uniformity Ratio E_{avg}/E_{min}	Veiling Luminance Ratio L_{max}/L_{avg}
Road	Pedestrian Conflict Area	R1 lux/ftc	R2 & R3 lux/ftc	R4 lux/ftc		
Freeway Class A		6.0/0.6	9.0/0.9	8.0/0.8	3.0	0.3
Freeway Class B		4.0/0.4	6.0/0.6	5.0/0.5	3.0	0.3
Expressway	High	10.0/1.0	14.0/1.4	13.0/1.3	3.0	0.3
	Medium	8.0/0.8	12.0/1.2	10.0/1.0	3.0	0.3
	Low	6.0/0.6	9.0/0.9	8.0/0.8	3.0	0.3
Major	High	12.0/1.2	17.0/1.7	15.0/1.5	3.0	0.3
	Medium	9.0/0.9	13.0/1.3	11.0/1.1	3.0	0.3
	Low	6.0/0.6	9.0/0.9	8.0/0.8	3.0	0.3
Collector	High	8.0/0.8	12.0/1.2	10.0/1.0	4.0	0.4
	Medium	6.0/0.6	9.0/0.9	8.0/0.8	4.0	0.4
	Low	4.0/0.4	6.0/0.6	5.0/0.5	4.0	0.4
Local	High	6.0/0.6	9.0/0.9	8.0/0.8	6.0	0.4
	Medium	5.0/0.5	7.0/0.7	6.0/0.6	6.0	0.4
	Low	3.0/0.3	4.0/0.4	4.0/0.4	6.0	0.4

Overview of Potential Solutions

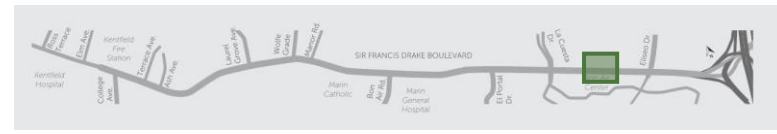


Zone 2 Existing

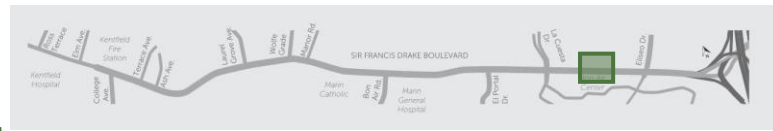




Zone 4 Existing

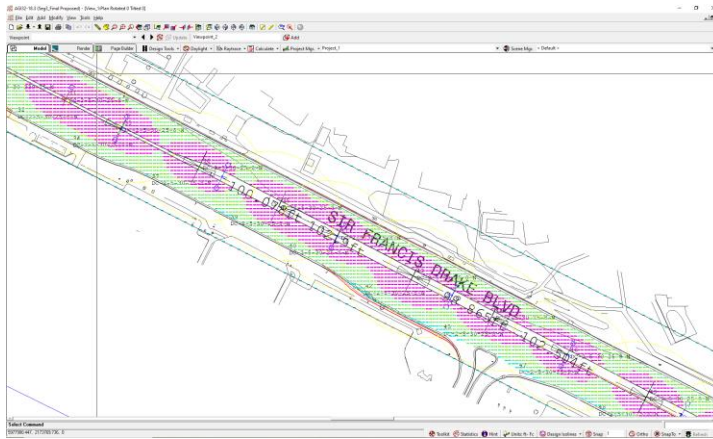


Zone 4 Decorative Poles

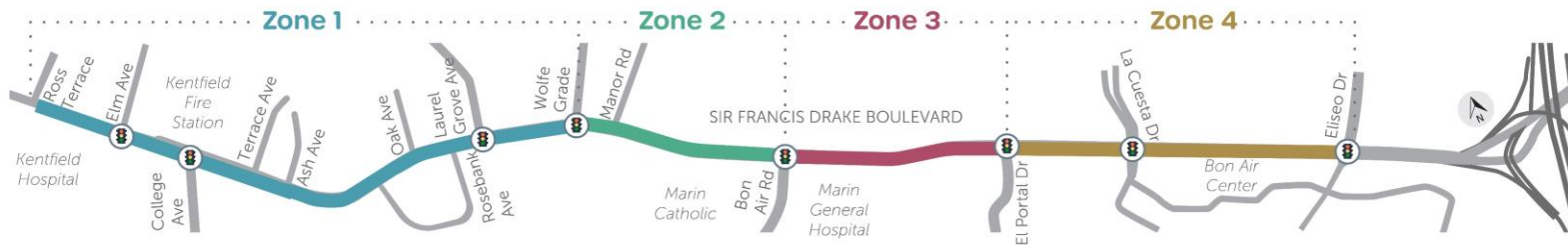


Additional Analysis & Design Refinement

Refined Analysis



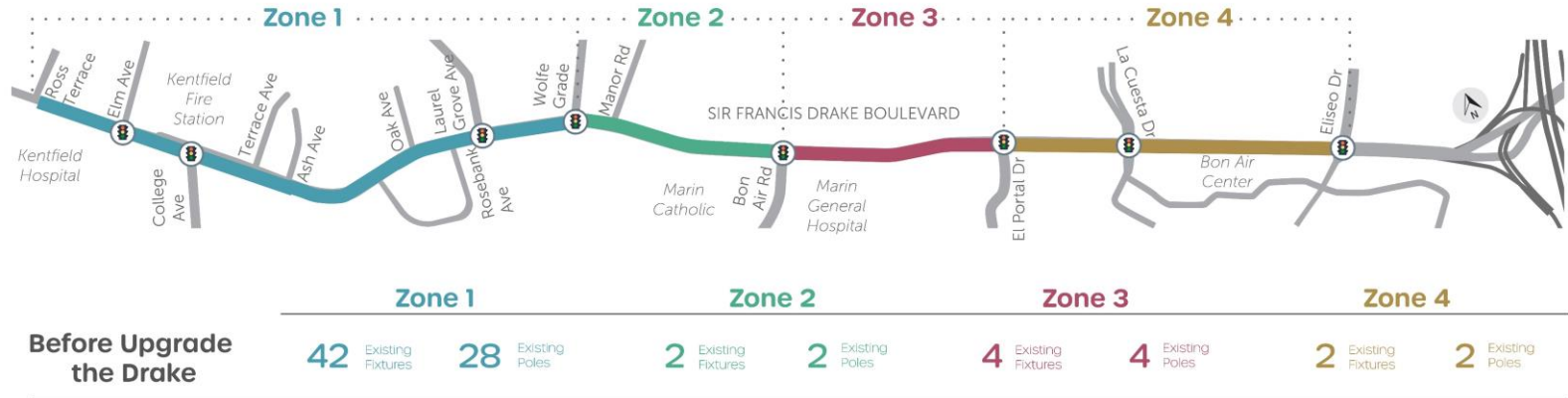
Recommended
Modifications (And
Expected Outcomes)



FIXTURE AND POLE CHANGES

Sir Francis Drake Lighting Update

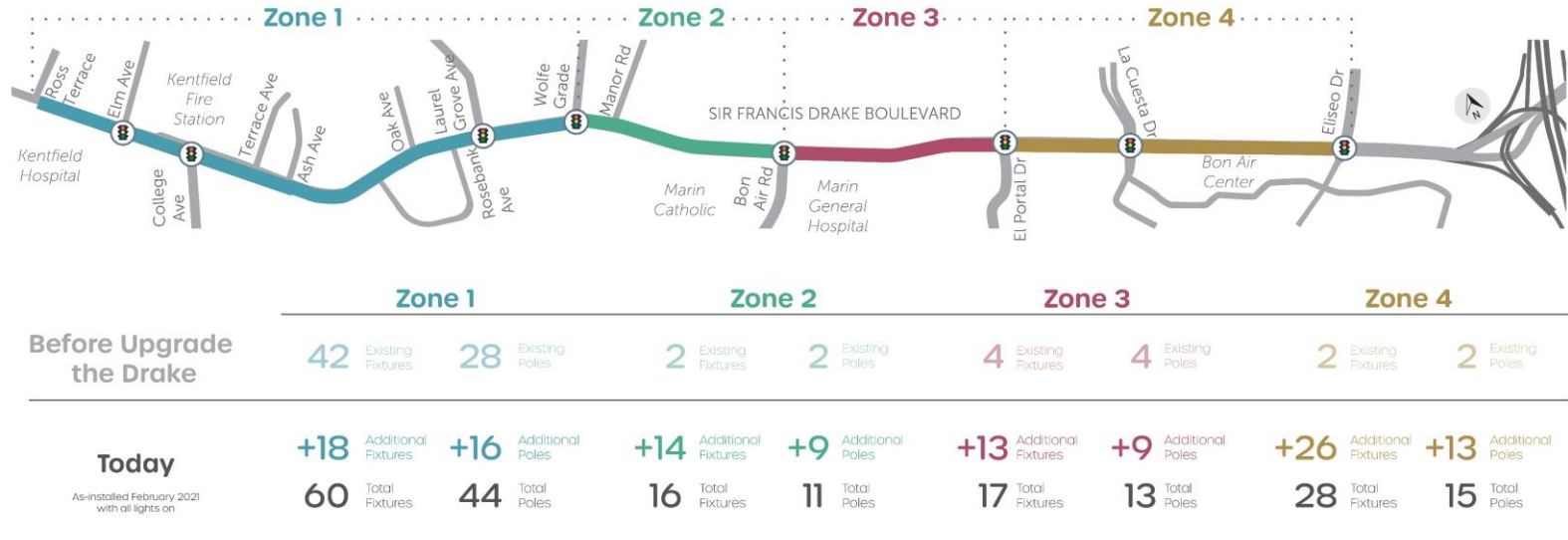
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FIXTURE AND POLE CHANGES

Sir Francis Drake Lighting Update

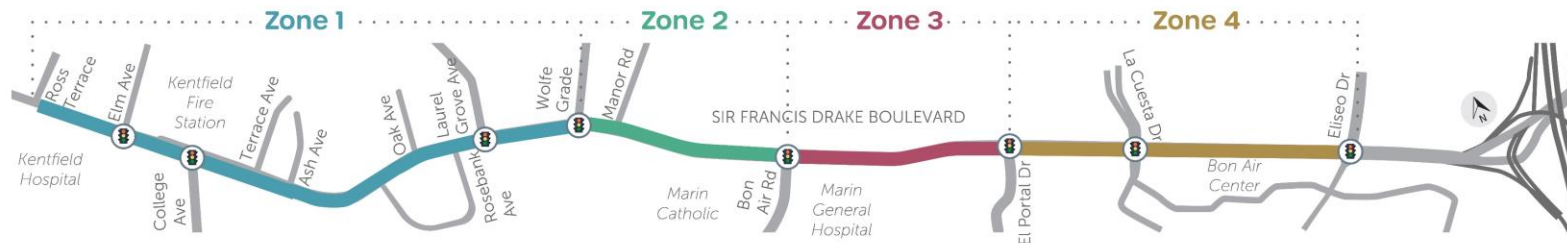
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FIXTURE AND POLE CHANGES

Sir Francis Drake Lighting Update

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	Zone 1		Zone 2		Zone 3		Zone 4	
Before Upgrade the Drake	42 Existing Fixtures	28 Existing Poles	2 Existing Fixtures	2 Existing Poles	4 Existing Fixtures	4 Existing Poles	2 Existing Fixtures	2 Existing Poles
Today	+18 Additional Fixtures	+16 Additional Poles	+14 Additional Fixtures	+9 Additional Poles	+13 Additional Fixtures	+9 Additional Poles	+26 Additional Fixtures	+13 Additional Poles
As-installed February 2021 with all lights on	60 Total Fixtures	44 Total Poles	16 Total Fixtures	11 Total Poles	17 Total Fixtures	13 Total Poles	28 Total Fixtures	15 Total Poles

Proposed

Details may be refined during design phase

Replace **50** of **60** Cobrahead fixtures
All 44 poles remain

Replace **all 11** poles with Decorative fixtures and poles

+4 additional poles

Reuse **10** of **11** foundations

Replace **10** of **17** Cobrahead fixtures
All 9 poles remain

Replace **all 15** poles with Decorative fixtures and poles

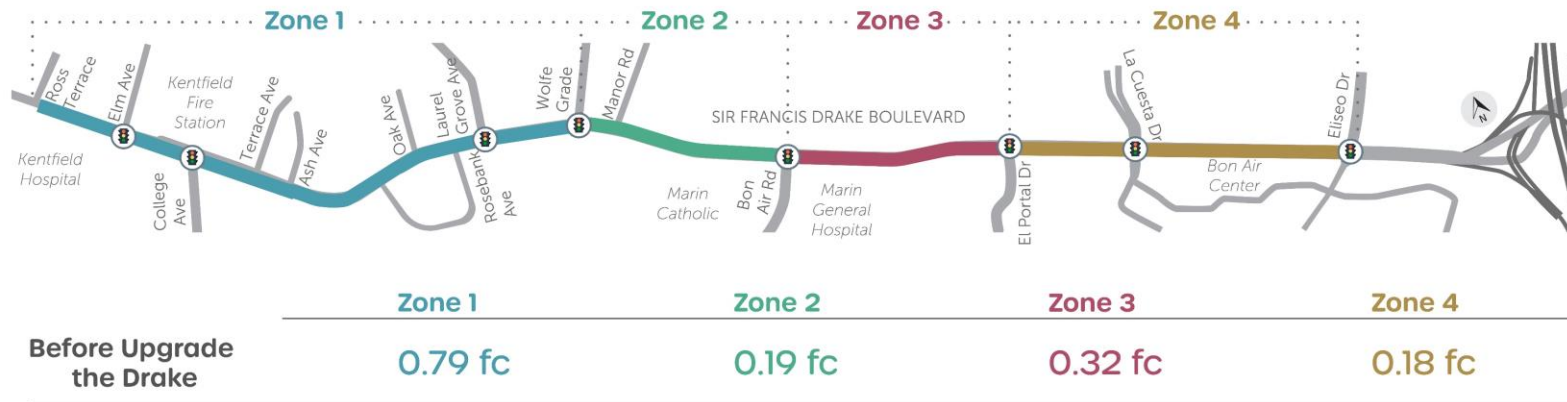
+6 additional poles

Reuse **9** of **15** foundations

AVERAGE ROADWAY BRIGHTNESS

Sir Francis Drake Lighting Update

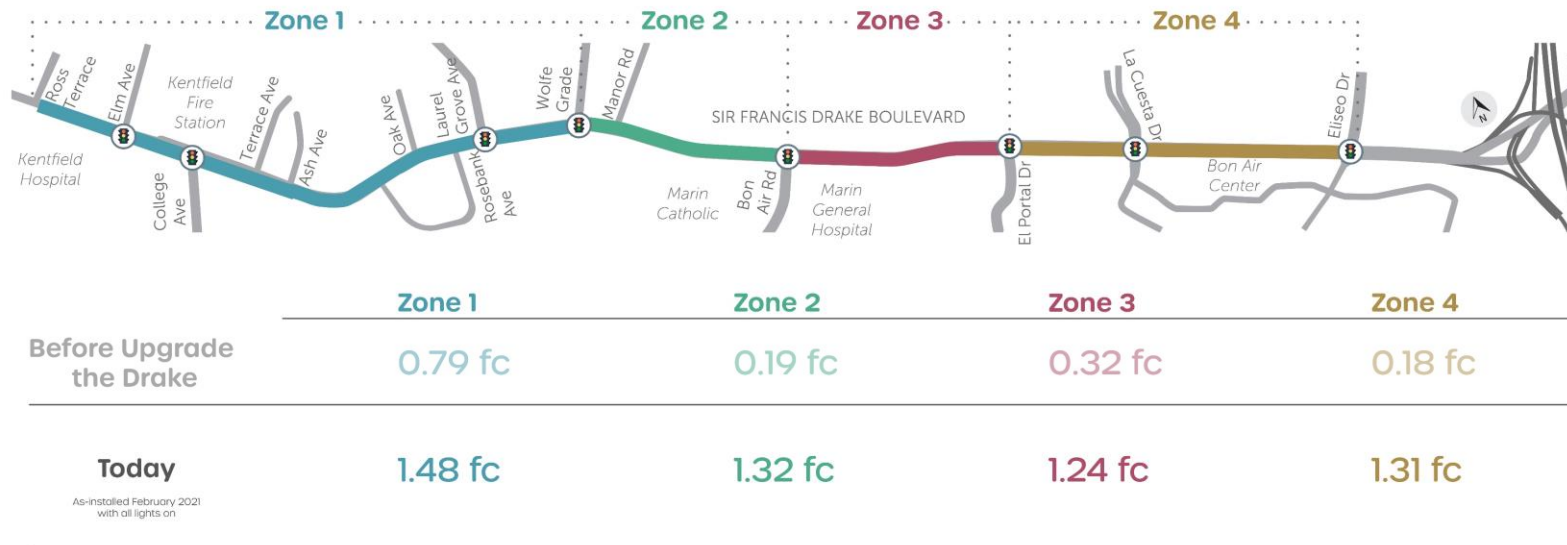
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AVERAGE ROADWAY BRIGHTNESS

Sir Francis Drake Lighting Update

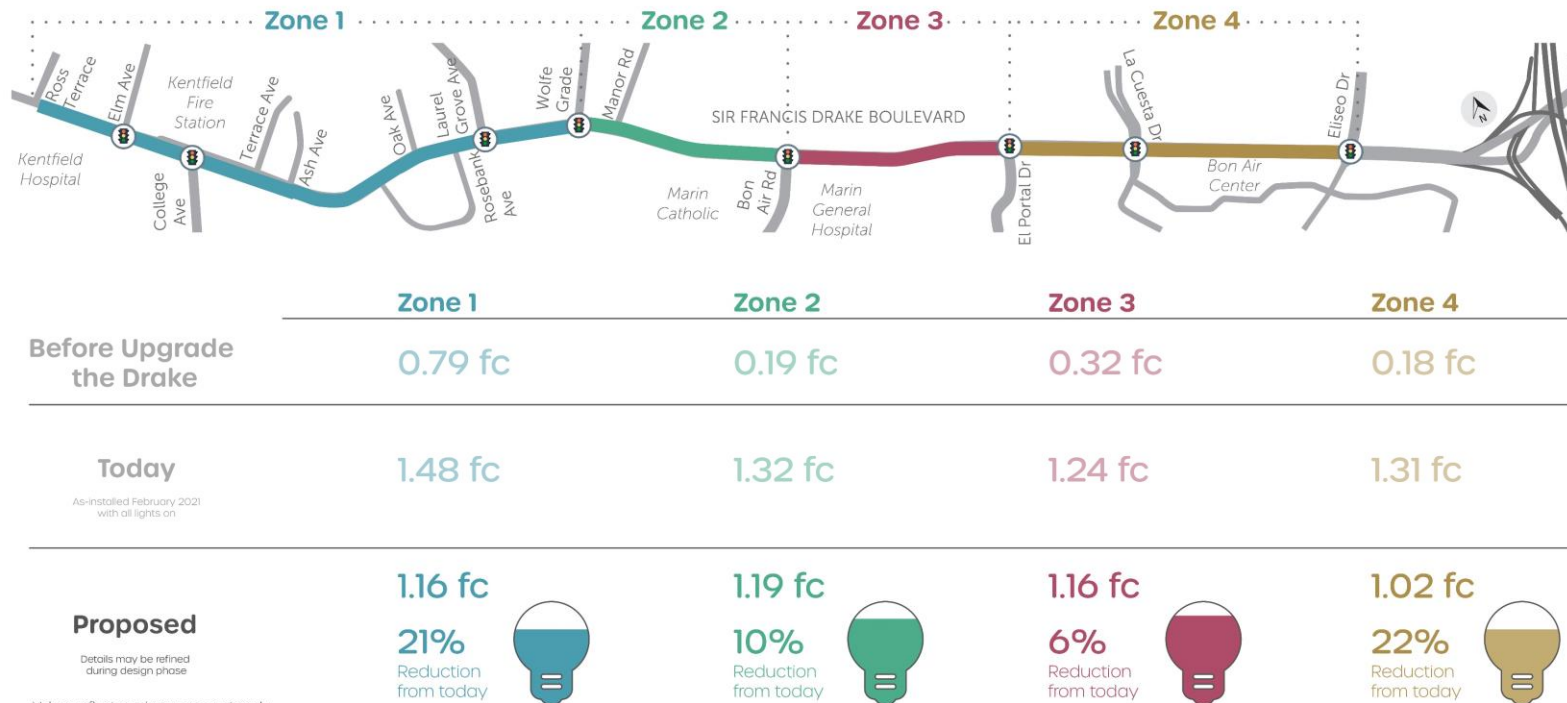
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AVERAGE ROADWAY BRIGHTNESS

Sir Francis Drake Lighting Update

DRAFT 2021

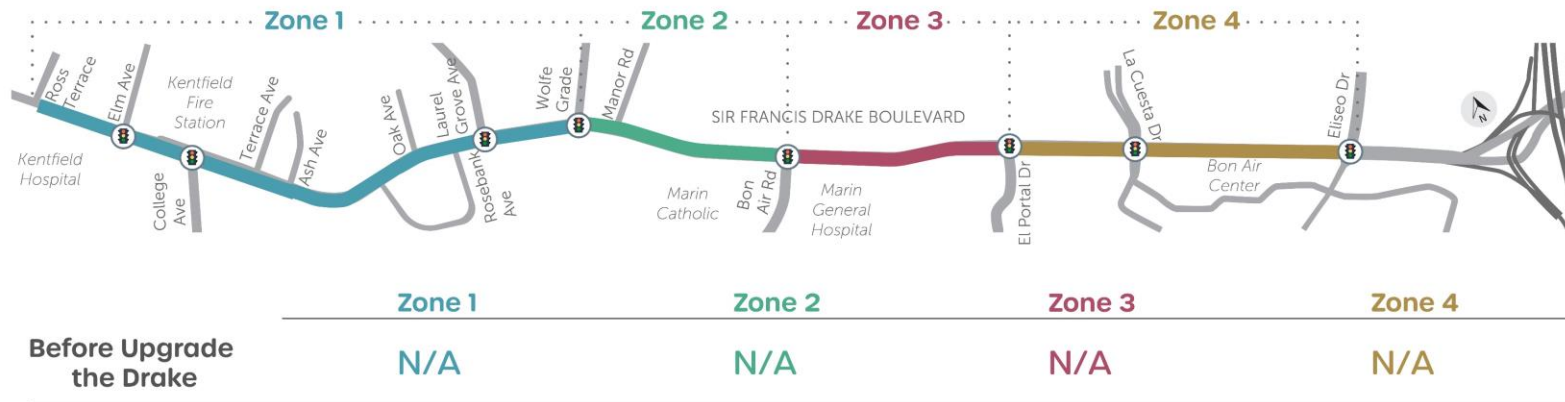


Values reflect roadway segments only
Does not include signalized intersections where roadway lighting is brighter due to safety standards

AVERAGE BRIGHTNESS OF LIGHT SPOILOVER

Sir Francis Drake Lighting Update

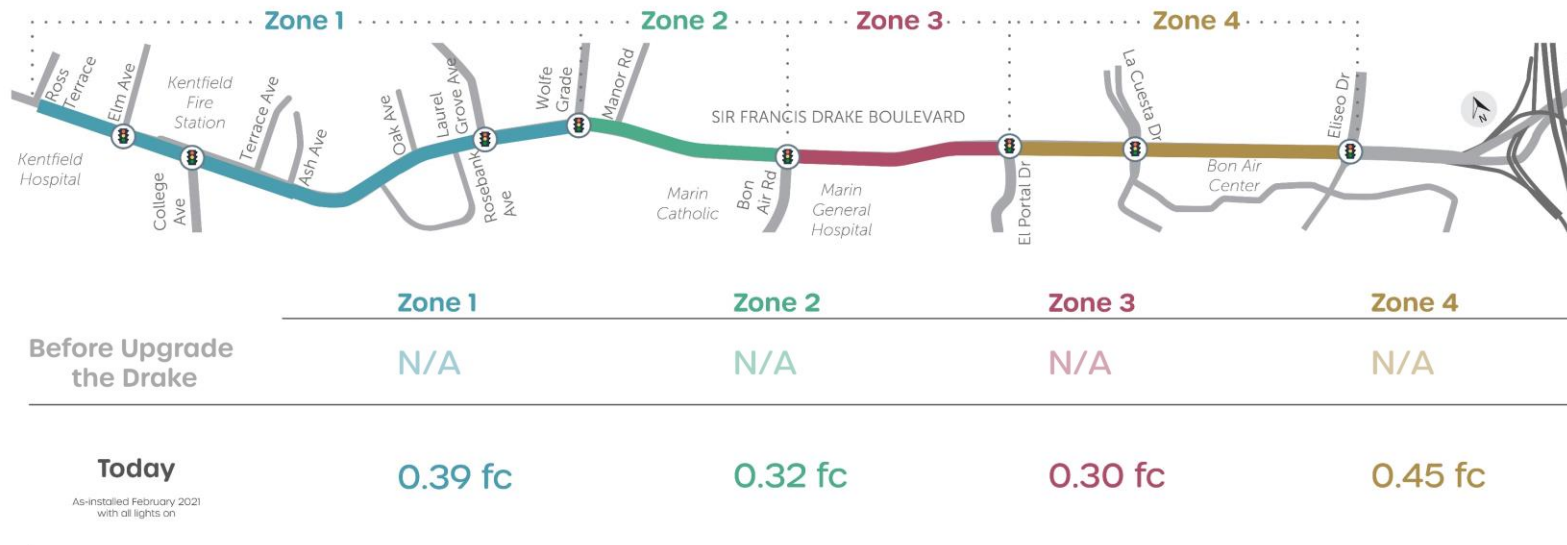
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AVERAGE BRIGHTNESS OF LIGHT SPILLOVER

Sir Francis Drake Lighting Update

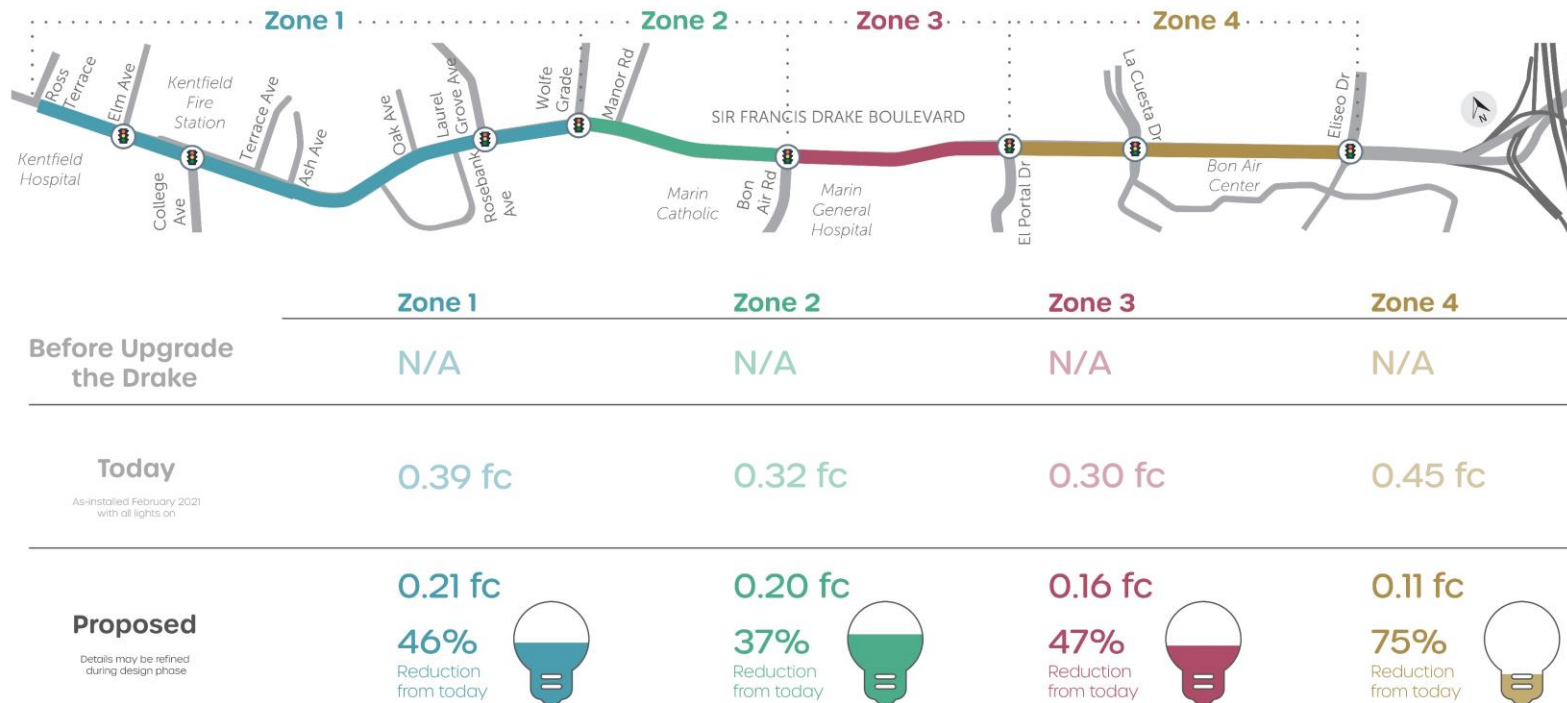
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AVERAGE BRIGHTNESS OF LIGHT SPOILOVER

Sir Francis Drake Lighting Update

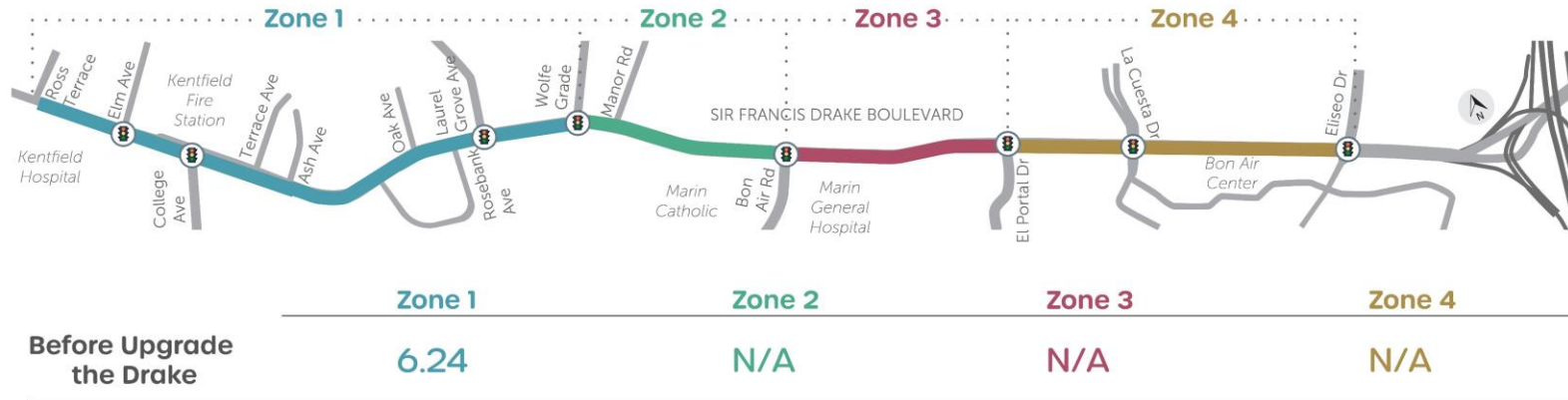
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UNIFORMITY (LIGHT CONSISTENCY)

Sir Francis Drake Lighting Update

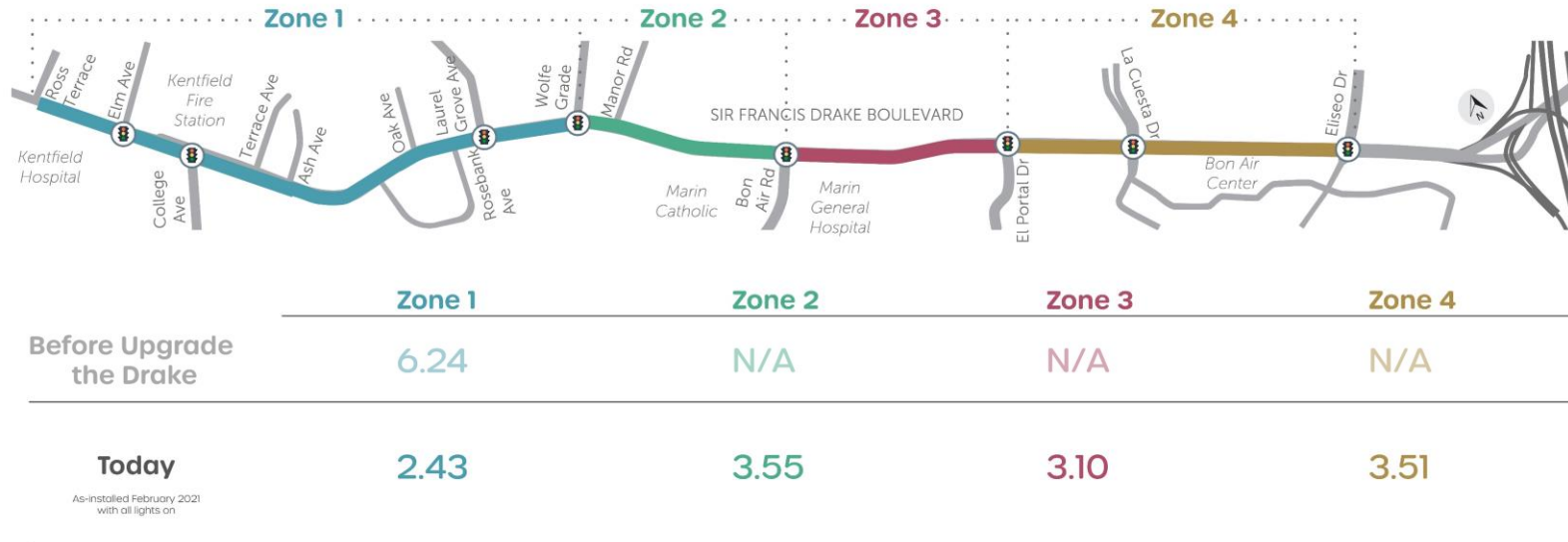
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UNIFORMITY (LIGHT CONSISTENCY)

Sir Francis Drake Lighting Update

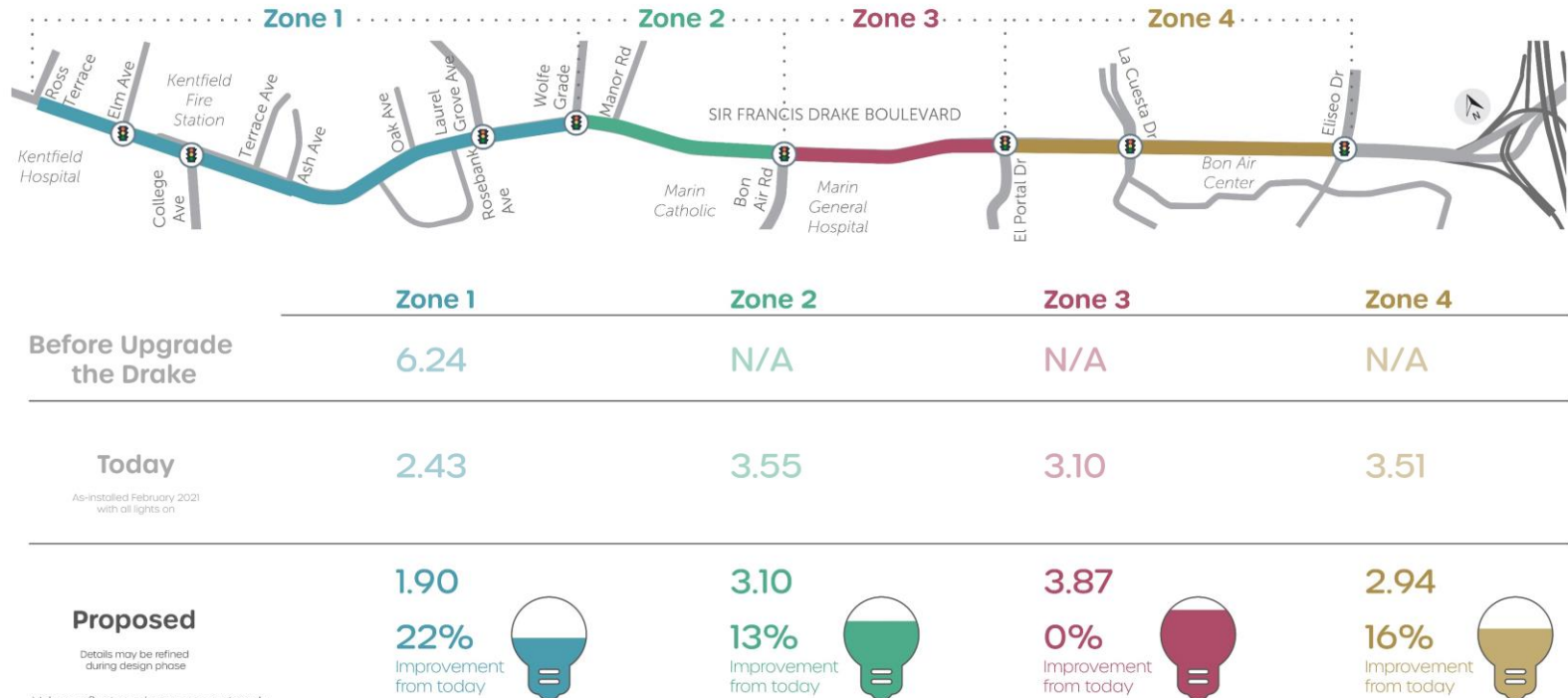
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UNIFORMITY (LIGHT CONSISTENCY)

Sir Francis Drake Lighting Update

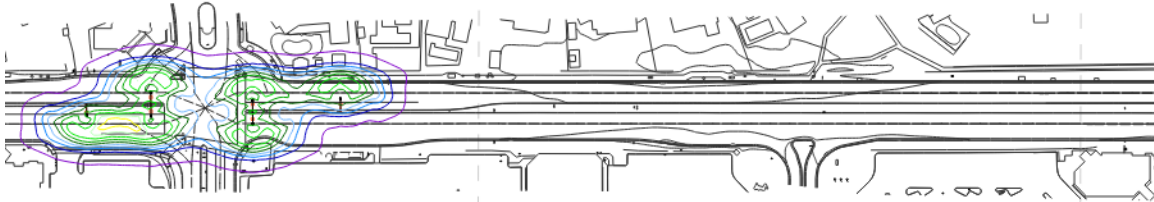
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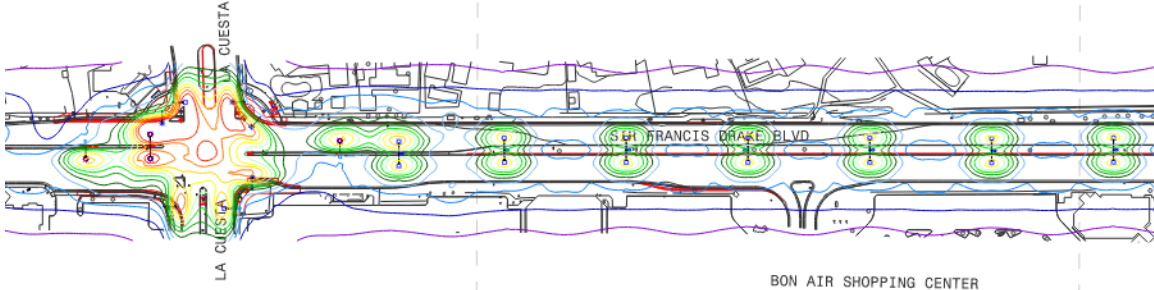
Values reflect roadway segments only
Does not include signalized intersections where roadway lighting is brighter due to safety standards

Comparisons

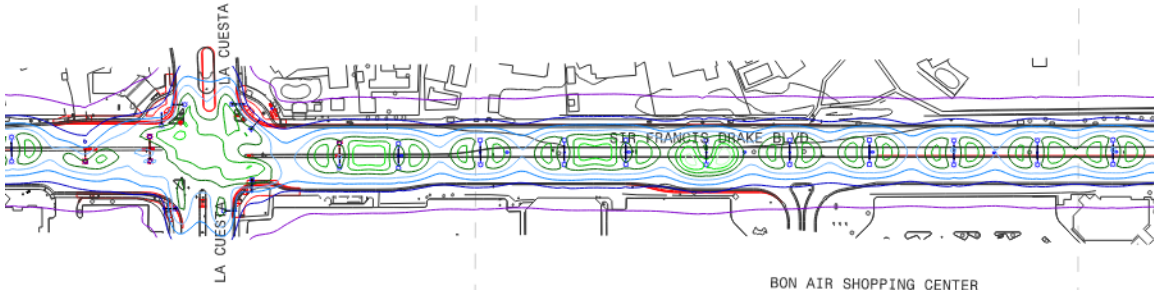
Pre-Project



As-Installed



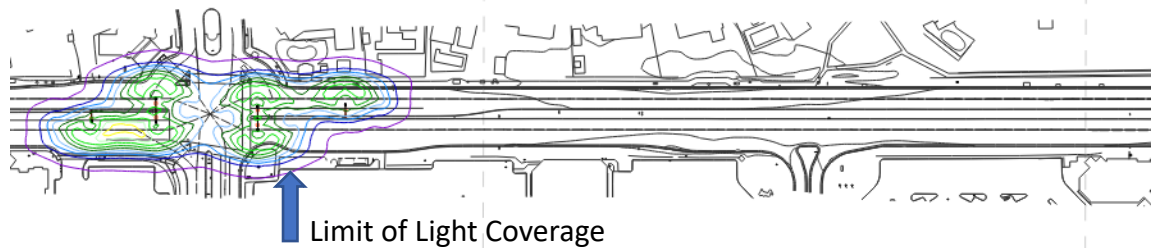
Proposed



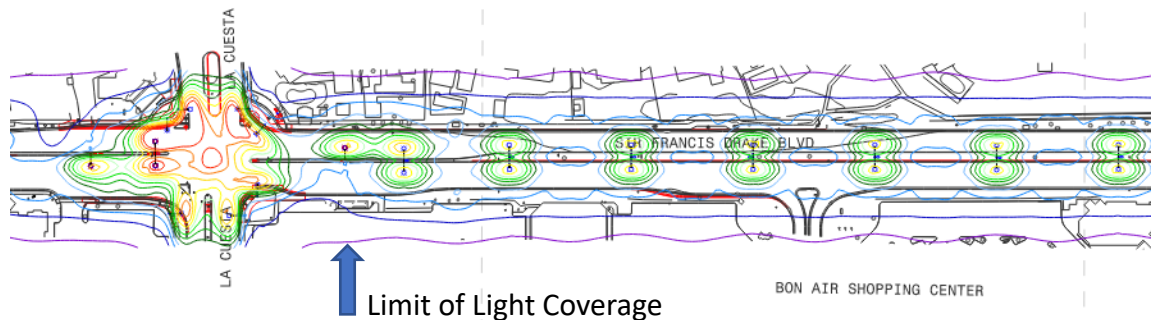
Legend

0.1 fc	1.0 fc	1.9 fc	2.8 fc
0.4 fc	1.3 fc	2.2 fc	3.1 fc
0.7 fc	1.6 fc	2.5 fc	3.4 fc

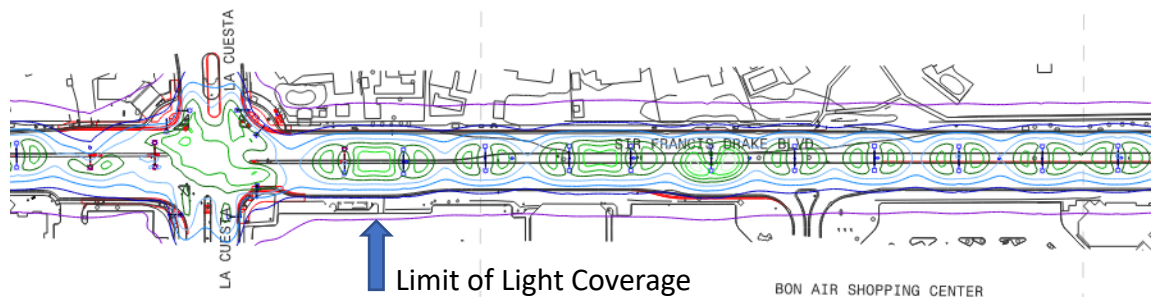
Pre-Project



As-Installed



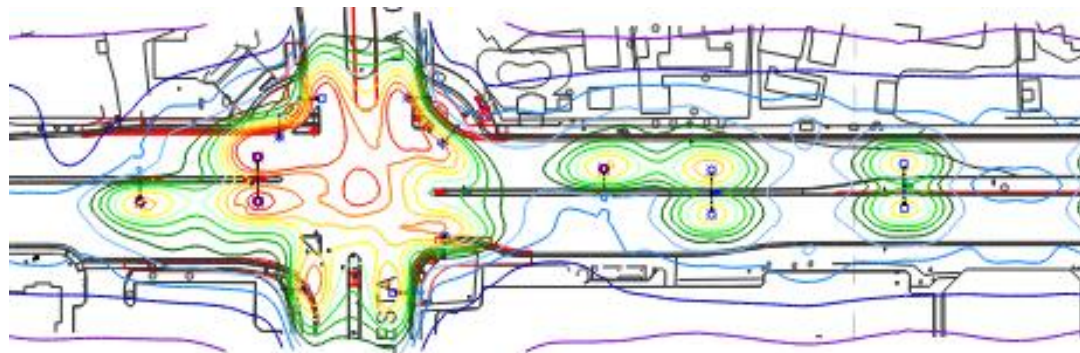
Proposed



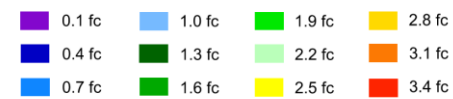
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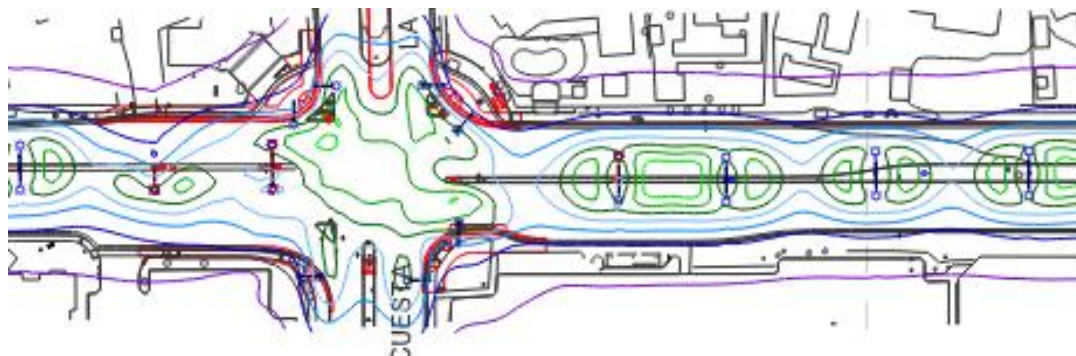
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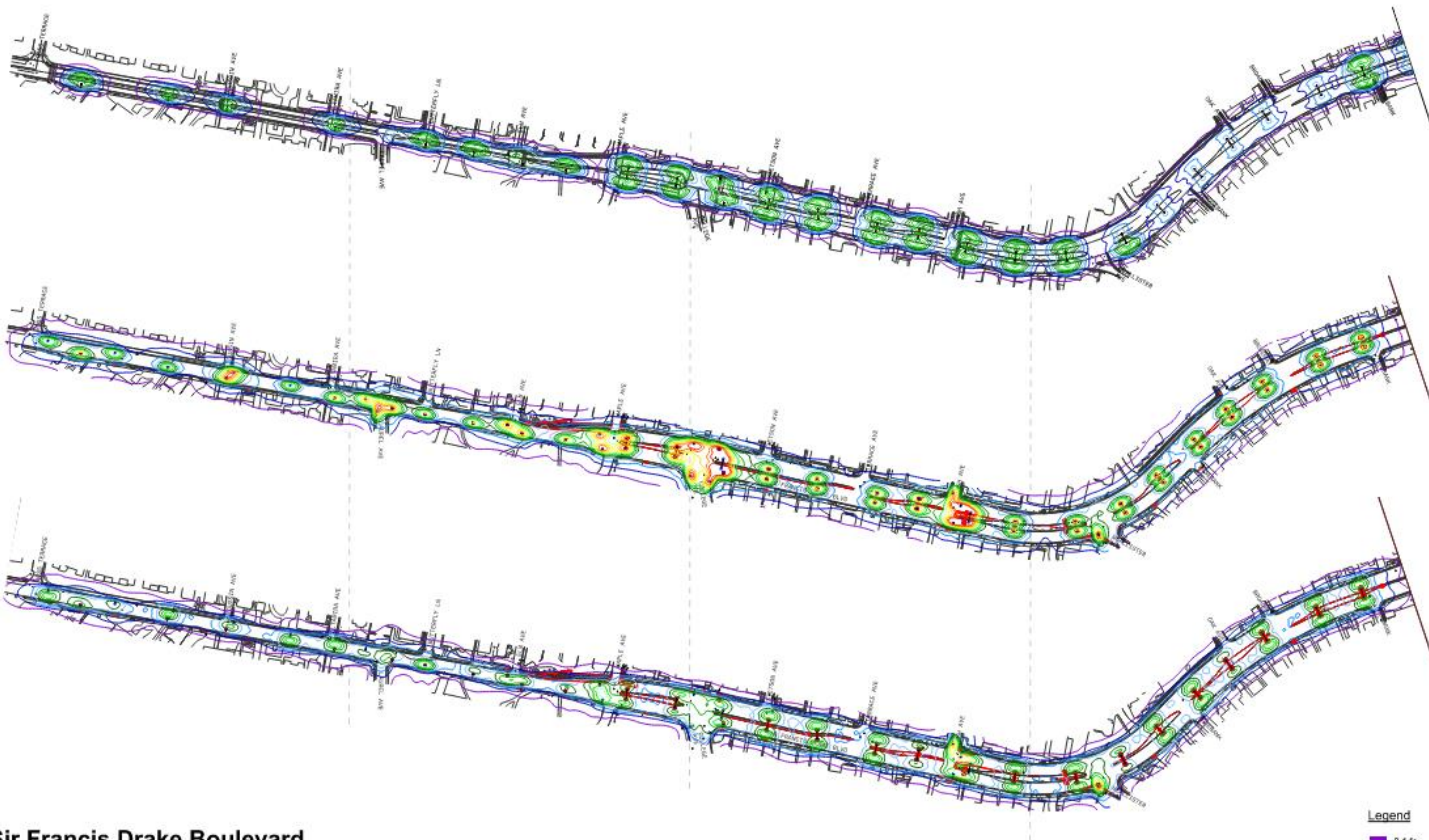


Legend



Proposed





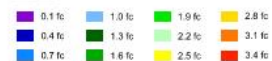
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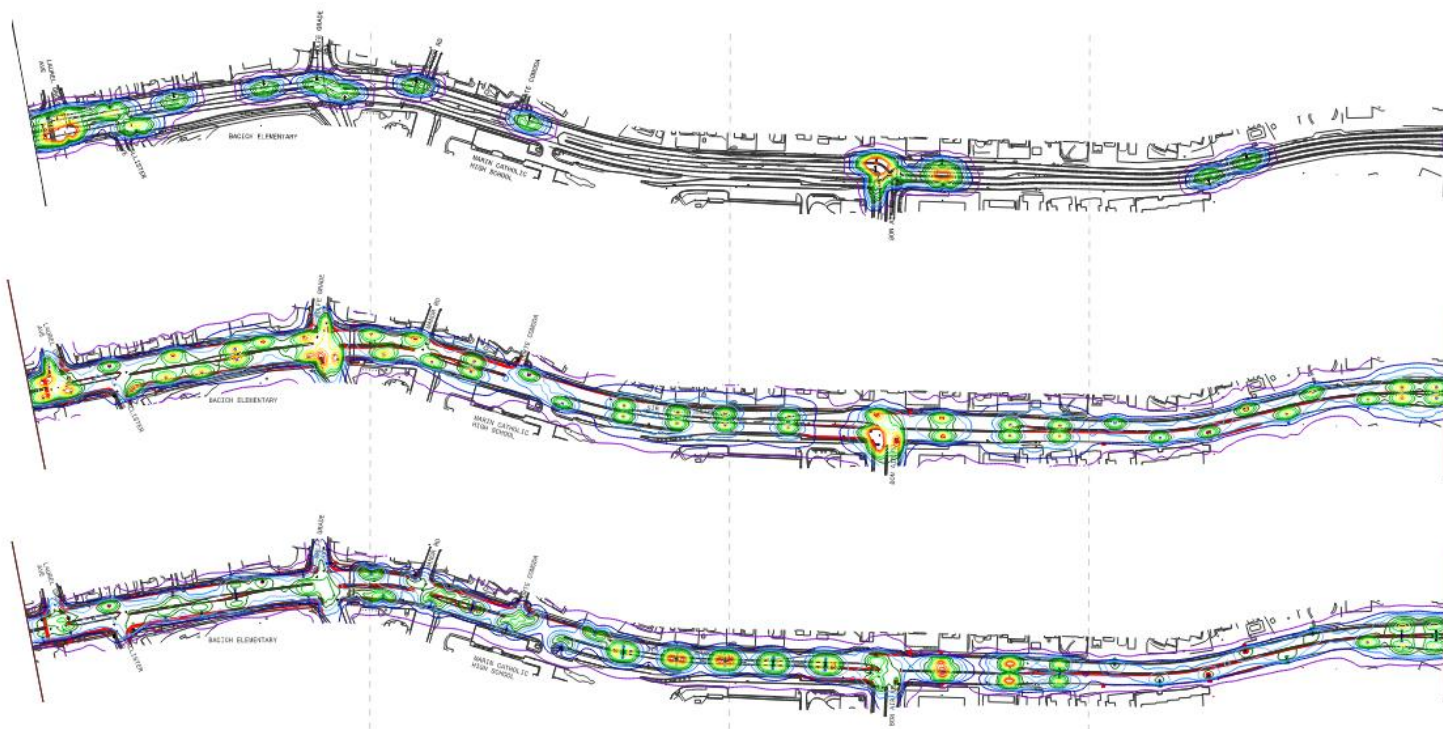
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Proposed

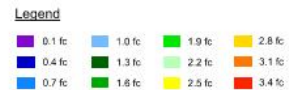
Sir Francis Drake Boulevard
Photometrics - Sheet 1 of 3

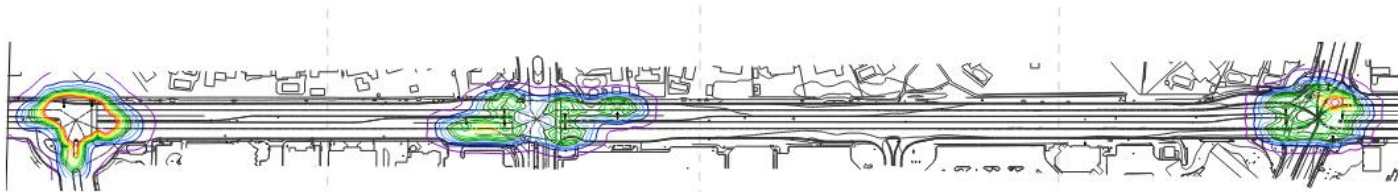
Legend



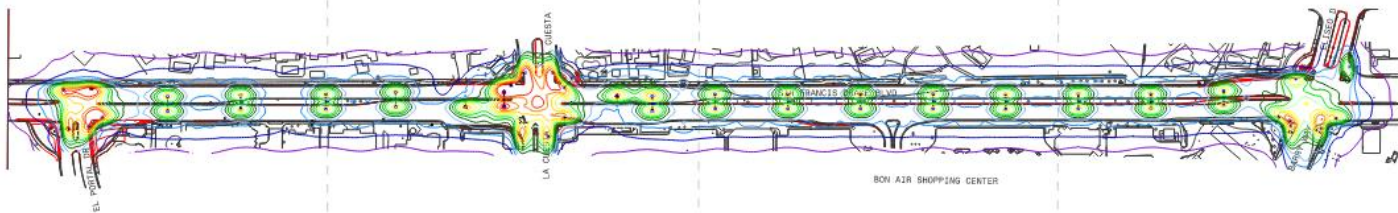


Sir Francis Drake Boulevard
Photometrics - Sheet 2 of 3

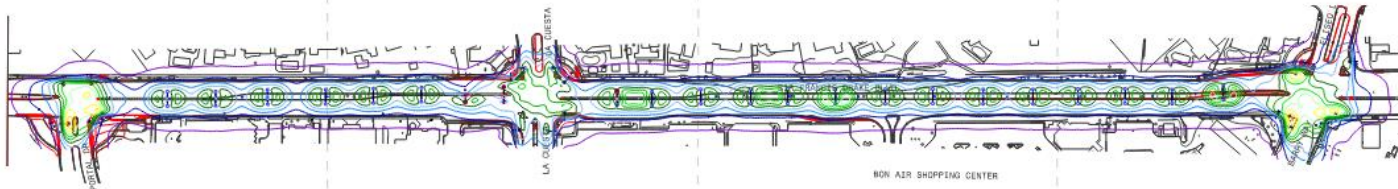




Pre-Project



As-Installed



Proposed

Sir Francis Drake Boulevard

Photometrics - Sheet 3 of 3

Legend

