



MEMORANDUM

Public Works Department

DATE: October 30, 2019

TO: Bicycle/Pedestrian Advisory Committee

FROM: Helen Kim, Transportation Planner
Ria Hutabarat Lo, Transportation Manager
Dawn S. Cameron, Assistant Public Works Director

SUBJECT: Draft Downtown Lighting Study, Project 15-34

RECOMMENDATION

Receive public and Bicycle/Pedestrian Advisory Committee comments on the Draft Downtown Lighting Study (Attachment 1 to this memorandum).

BACKGROUND

In response to concerns received regarding the lack of adequate lighting in the City of Mountain View downtown area (Study Area), the City conducted a study to evaluate existing lighting conditions and provide recommendations to improve the lighting levels in the Study Area. The Study Area includes the central downtown Mountain View area from Evelyn Avenue to El Camino Real, and from Franklin Street to View Street, with emphasis on Castro Street and the City Hall/Center for the Performing Arts plaza area.

Downtown Lighting Study Area Map



LEGEND

- - - Downtown District
- ★ City Hall/Center for the Performing Arts Plaza
- ★ Pioneer Memorial Park
- # City Parking Lot (Number)

The Study provides the City with a comprehensive evaluation of the downtown lighting system, including an inventory of uneven or inadequate lighting spots, options for proper lighting levels, a photometric analysis (measuring each light fixture's lighting levels as perceived by the human eye), identification of obstructions to address in order to improve existing lighting, modifications to existing streetlight infrastructure (e.g., wattage, distribution, etc.), and criteria for new infill streetlights.

The Study's lighting technical guidelines and recommendations comply with the Illuminating Engineering Society of North America (ESNA) Roadway Lighting RP-84, American Association of State Highway and Transportation Officials (AASHTO) Roadway Lighting Design Guide, International Dark Sky recommendations, Federal Highway Administration (FHWA) Lighting Handbook, and City of Mountain Standard Details.

ANALYSIS

The purpose of the Downtown Lighting Study is to develop a comprehensive and planned approach to street lighting within the Study Area that provides a safe and secure streetscape for pedestrians, bicyclists, and motorists while reinforcing the City's unique downtown character.

The existing street lighting in the Study Area consists of a mixture of old and new light types, including incandescent, high-pressure sodium, and energy-efficient light-emitting diode (LED) bulbs. Many of the existing streetlights are also decorative post-top light fixtures that produce up-lighting (and result in light pollution or glare).

The Study found lighting levels generally lower than desired at key areas of focus: uncontrolled crosswalks, signalized and unsignalized intersections, parking lots, alleyways, Center for the Performing Arts and Civic Center Plaza, Pioneer Park, and City Hall and Public Library garage exits. Through input from stakeholders, community members, and City staff, the following lighting goals were identified for the Study:

- Maintain "sense of place" of the downtown.
- Consider different land uses and environments throughout the downtown area.
- Improve connections between the core downtown area and the peripheral residential areas.

- Improve lighting between City-owned surface parking lots and the core downtown area.
- Improve energy efficiency and maintenance activities.
- Improve safety and visibility at pedestrian crossing and pedestrian/vehicle conflict areas.
- Improve lighting at the Center for the Performing Arts and Civic Center Plaza.
- Incorporate lighting at Pioneer Park for events.
- Improve lighting at the City Hall and Public Library garage exits on Mercy Street.

Based on the above lighting goals and taking into consideration the City of Mountain View standard details and industry lighting guidelines, the Study identified thirteen (13) recommended implementation strategies:

1. *Improve safety lighting at uncontrolled crosswalks:* Provide lights at uncontrolled crosswalks to improve pedestrian visibility through increased vertical lighting levels.
2. *Replace or repair broken lights:* Inspect lights regularly to confirm lights are operating and to address any necessary repairs or replacements.
3. *Address tree obstructions to streetlights (maintenance):* Evaluate the current tree trimming services and schedule to ensure routine trimming occurs and lights are free from tree obstructions.
4. *Replace existing non-LED lights with LED energy-efficient lights:* Replace all non-LED lights with LED lights for increased energy savings and better lighting control and performance.
5. *Improve lighting levels at high-use, nighttime activity areas:* Improve lighting in locations with high nighttime activity, like Civic Center Plaza and Pioneer Park, where a high number of people are expected to be gathering or walking.
6. *Improve safety lighting at signal-controlled intersections:* Replace old induction-type lights with new LED lights, replace existing poles with new standards with mast-arms, and add infill lighting at signal-controlled intersections.

7. *Improve safety lighting at stop-controlled intersections and traffic circles:* Improve lighting levels through the replacement of existing fixtures and addition of infill lights at stop-controlled intersections and traffic circles.
8. *Improve pedestrian lighting coverage on City walkways:* Identify City-owned pedestrian passageways and light them at appropriate levels according to industry guidelines by upgrading existing fixtures and adding new lights where there are gaps.
9. *Enhance lighting and security in City-owned surface parking lots:* Improve existing lighting to meet industry guidelines by adding new poles and lights in City-owned surface parking lots.
10. *Enhance safety lighting on corridors in the downtown area:* Add infill lighting and replace existing lighting with more energy and optically efficient lights to provide lighting along roadways that meets industry guidelines.
11. *Address tree obstructions to streetlights (infrastructure):* Review alternative methods to tree trimming that would help lights avoid the tree canopies, such as lowering mounting heights of lights under the canopy or relocating lights so they are installed between trees rather than adjacent to trees.
12. *Implement smart lighting control:* Incorporate smart lighting control into projects identified in this Study or with new lighting projects, such as surface parking lots where high light levels are recommended for certain peak periods with high expected activity, and lights could be dimmed to a lower power setting during nonpeak periods or motion-activated lighting for passageways and alleys.
13. *Implement Dark Sky-compliant lighting:* Select Dark Sky-compliant lighting fixtures that minimize glare, reduce light trespass, and do not pollute the night sky to be incorporated into all projects discussed in the Study and any new lighting installations.

These 13 strategies were grouped into near-term (one to two years), mid-term (two to five years), and long-term (five-plus years) projects as shown on the table below:

	STRATEGY	DEPLOYMENT TIMELINE
1	Improve safety lighting at uncontrolled crosswalks	Near-Term (1-2 Years)
2	Replace or repair broken lights	

	STRATEGY	DEPLOYMENT TIMELINE
3	Address tree obstructions to streetlights (maintenance)	
4	Replace non-LED lights with LED energy-efficient lights	
5	Improve lighting levels at high use, nighttime activity areas	
6	Improve safety lighting at signal-controlled intersections	Mid-Term (2-5 Years)
7	Improve safety lighting at stop-controlled intersections	
8	Improve pedestrian lighting coverage on walkways between parking and businesses	
9	Enhance lighting and security in City-owned surface parking lots	
10	Enhance safety lighting on corridors in downtown area	Long-Term (5+ Years)
11	Address tree obstructions to streetlights (infrastructure)	
12	Implement smart lighting control	
13	Implement Dark Sky-compliant lighting	

The intent of the list is to provide a prioritized list of recommended lighting projects for future implementation. The identification, prioritization, and implementation of specific lighting improvements will be an ongoing effort. This process will be flexible to allow for change over time to reflect vehicle pattern, pedestrian and bicycle conditions, new needs and priorities, and opportunities, including lighting-related improvements as part of larger public projects or private developments.

NEXT STEPS

The B/PAC's input on the Draft Study will be provided to the Downtown Committee as they deliberate on the Final Study. The Final Study will be used as the basis for future City Capital Improvement Program (CIP), development review opportunities, and grant funding availability to improve lighting in the City's Downtown Study Area.

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915-10-30-19M

Attachment: 1. [Draft Downtown Lighting Study](#)