Purpose
To define the criteria and processes for installation and maintenance of highway lighting by the Utah Department of Transportation (Department).

Policy
The Department will review all requests for the illumination of State highways. Highway lighting is divided into two categories: lighting for non-freeway or partial access controlled highways, and lighting for freeway or full access controlled highways.

Both types of highway lighting can increase efficiency of traffic operations, improve the visibility of roadway geometry, and improve overall roadway and intersection safety, especially during inclement weather.

1. Non-Freeway Highway Lighting

Lighting in urbanized or high crash locations will be considered for locations where the Department and the local government agency agree that lighting will contribute substantially to the safety, efficiency, and comfort of vehicular or pedestrian traffic operation.

Lighting of spot locations in rural areas may be considered for sections of highway with unusually high crash history, complex geometry or raised channelization. This type of lighting is similar to freeway ramp terminals.

a. Small Area Lighting Requests
Requests for highway lighting projects should come through the Department Region Offices to the Division of Traffic and Safety. These projects will be prioritized, if approved, on the basis of crash rate (crashes per million vehicle miles) and the night time to day time crash ratio. This priority listing and the availability of funds will be the critical factors in determining which highway lighting projects will be funded.

b. Approved Roadway Projects
The Department is responsible for plan preparation, specifications, estimates, inspection, and funding for material and labor costs for approved, state-funded roadway projects that specify standard highway luminaires.
The local governmental agency is responsible for betterment costs when non-typical design considerations have been requested by the agency, such as providing materials for decorative poles and luminaires, or similar.

The local agency is responsible for plan preparation, specifications, estimates, and funding for material and labor costs for approved lighting projects in which a local government agency has requested State funding for a local project. The Department in these cases is responsible only for review of project plans to confirm appropriate design, and for final inspection to verify proper installation.

The local governmental agency with jurisdiction will pay for operating costs and will maintain the non-freeway lighting system according to Section 72-3-109(1)(f) of the Utah Code. An appropriate operating and maintenance agreement will be drafted to confirm the local governmental agency has full understanding of their responsibilities under Utah law. Funding for local agency requested highway lighting projects will not be allocated until this agreement is signed and executed by representatives from the local agency and the Department.

2. Freeway Lighting

The Department will provide freeway lighting at the locations defined below only after a proper engineering evaluation that considers the conditions described in the latest version of the AASHTO Roadway Lighting Design Guide, and in accordance with this policy. Projects to reduce or adjust existing lighting will likewise be approved only after an identical engineering evaluation.

Future growth is also a consideration for lighting warranting. A lighting system may be installed as part of a project when 3-5 year traffic projections indicate the location will warrant it. Such projections must be based on historical data.

a. Complete Interchange Lighting

A complete interchange lighting system provides relatively uniform illumination within the limits of a freeway interchange. Complete interchange lighting should be considered where the following cases occur:

1) Interchange is within a segment of continuous freeway lighting.
2) Interchange consists of converging or intersecting freeway routes.

b. Partial Interchange Lighting
Partial interchange lighting is a freeway lighting system that provides illumination only at decision making areas of roadways, such as the following:

1) Off ramp gore areas.
2) Ramp terminals, including cross streets and ramp entrances.
3) Major weaving sections approaching or departing from the interchange.
4) Lane drop areas.
5) Complex alignment changes such as curves greater than 5 degrees.

c. Continuous Freeway Lighting
Continuous freeway lighting is a system that provides relatively uniform illumination on all main travel lanes and direct connections. Continuous freeway lighting should be considered when the following conditions exist:

1) High traffic volumes in an urban environment.
2) Segments with unusually high crash history.
3) Segments with interchanges within one half mile or closer of each other.

3. Overhead Sign Lighting
Traffic signs placed over the roadway must be adequately legible during both daylight and nighttime conditions. This may be accomplished by use of a fixed lighting system or by relying on the retroreflective properties of the sign material.

A fixed lighting system for overhead mounted signs should only be installed after a proper engineering evaluation of the location. Reasons for specifying sign lighting may include, but are not limited to, the following:

a. The sign consists of or includes directional diagrams.
b. The signs are for “Exit Only” lane drops.

c. The signs are located within a high-volume segment, such as a freeway-to-freeway interchange.

d. The area has a high level of ambient light causing glare issues which may cause the sign to be difficult to read.

The decision to illuminate an overhead sign must be approved by the Traffic & Safety Design Engineer. All signs on an overhead structure must be illuminated if any one sign is illuminated.

4. Roadway Lighting Maintenance and Electrical Service Costs

Maintenance of and electrical service costs for roadway lighting systems are the responsibility of either the Department or the local government agency having jurisdiction over the road. Refer to Utah Administrative Code R918-6, Maintenance Responsibility at Intersections, Overcrossings, and Interchanges with Local Roads as well as Section 72-3-109(1)(f) of the Utah Code for a thorough breakdown.

The following summary is related specifically to roadway lighting responsibilities:

a. The Department is responsible for all maintenance and electrical service costs for freeway lighting systems, including:

1) Mainline freeway, interchange, and underpass lighting.

2) Cross street underpass lighting at interchanges with on/off ramps.

3) Sign lighting on state routes or along the freeway corridor.

4) Un-signalized intersection lighting at freeway on or off ramps intersecting cross streets.

5) Traffic signal-attached lighting at non-traditional signalized intersections, including Diverging Diamond Interchanges (DDI), Single Point Urban Interchanges (SPUI), Continuous Flow Interchanges (CFI), and Thru-Turn Interchanges.
b. Local governments are responsible for all maintenance and electrical service costs for non-freeway highway lighting, including:

1) Roadway lighting on all non-freeway state routes.

2) Cross street underpass lighting where no interchange on or off ramps exist.

3) All decorative lighting requested by the municipality, including street, bridge, and underpass lighting.

4) Lighting at traditional signalized intersections along state routes including lighting at signalized freeway ramp terminals.
Responsibility: Traffic and Safety Design Engineer

1. Receive request for local street lighting project. Requests will be initiated by:
   a. Region Director with local authorities.
   b. Traffic and Safety Design Section via inventory of community needs.

2. Establish compliance with warrants. Establish design requirements and preliminary estimate if lighting is warranted.

3. Coordinate with local government officials. Provide information concerning cost of project, local government responsibilities, and various power source alternatives available such as power company owned vs. locally owned, and secure letter of understanding from local government.

4. Establish an Authority Number for Expenditure document through the Engineer for Traffic and Safety and the Deputy Director after the decision of local government as to course of action. Furnish design requirements to the Region Utility Coordinator after approval to formalize an agreement with the local government.

5. Secure executed formal cooperative agreement from Region Utility Coordinator.

6. Prepare plans and specifications according to standard lighting practices.

Responsibility: Region Utility Coordinator

7. Prepare formal cooperative agreement for execution by local government and transportation officials.

Responsibility: Local Government

8. Sign and return cooperative agreement to Region Utility Coordinator.

Responsibility: Region Utility Coordinator

9. Forward cooperative agreement for final execution within Department. Send a copy of final executed agreement to the Traffic and Safety Design Engineer.
Responsibility: Traffic and Safety Design Engineer

10. Transmit plans and specifications to, or provide approval of local government developed plans for, the local government and notify them to proceed with lighting installation.

Responsibility: Local Government

11. Submit to the Traffic and Safety Design Engineer final costs of the completed project and provide request for any reimbursements outlined in the cooperative agreement.

Responsibility: Traffic and Safety Design Engineer

12. Inspect project to verify compliance with project plans and specifications and audit vouchers for reimbursement of material costs (if applicable) to local government. Submit final cost to Comptroller Office and approve payment to local government.

13. Notify Comptroller Office of completion of project and submit a Termination of Authority Form to close out the Authority Number.
Installation of Freeway Lighting

Responsibility: Traffic and Safety Design Engineer

1. Receive request for freeway lighting. Requests will be initiated by either:
   a. Region Director with local authorities
   b. Region Traffic Operations Engineer with project team.

2. Establish compliance with warrants. Establish design requirements and preliminary estimate if lighting is warranted.

Responsibility: Region Utility Coordinator

3. Contact local power company and setup on-site meeting to identify power source.

Responsibility: Design Engineer

4. Furnish design requirements to the Region Utility Coordinator to finalize design upon decision of power company.

5. Prepare plans and specifications according to standard lighting practices.

Responsibility: Traffic and Safety Design Engineer

6. Review and approve plans for conformance to Department policy, specifications, and standards.

Responsibility: Region Utility Coordinator

7. Request installation of meter in newly installed power pedestal.

8. Provide meter number to Traffic and Safety Design Engineer.