Lighting Prioritization Form

1. Warrants as per AASHTO
   A. Meets Nighttime Accident Ratio Warranting Criteria (2)
   B. Meets additional Warranting Criteria (1)
   C. Meets all warranting criteria (1)

2. Existing Traffic Volumes - Mainline
   A. 0 – 10,000 ADT (1)
   B. 10,001 – 20,000 ADT (2)
   C. 20,001 - 30,000 ADT (3)
   D. 30,001 – 40,000 ADT (4)
   E. 40,000 or above ADT (5)

3. Future increase in Mainline Traffic Volumes (%) – 20 year projection
   A. 0 – 10% (1)
   B. 10.1 – 20% (2)
   C. 20.1 – 30% (3)
   D. 30.1 – 40% (4)
   E. 40% or greater (5)

4. Roadway Type
   A. Non-State Route (1)
   B. Minor State Route (2)
   C. Major State Route (3)
   D. Interstate (4)

5. Participation by Local Government/Entity
   A. Design of Lighting (1)
   B. Design , Energy or Maintenance of Lighting (2)
   C. Design, Energy and Maintenance of Lighting (3)
   D. Design, Energy, Maintenance, and Installation (4)
   E. Percentage of Estimated Construction Cost Contribution

6. Benefit Cost Ratio
    A. Based upon formula

$$\frac{(ADT)(\%ADTn)(365)(NRU)(CRF)(ACC)}{(AIC+TMC+AEC)\ 1{,}000{,}000}$$

Where:

ADT = Average Daily Traffic (Existing or Projected)
%ADTn = Percent of ADT at night
NRU = Night Crash Rate **unlighted**
CRF = Crash Reduction Factor
ACC = Average Crash cost (dollars per crash)
AIC = Annualized installation cost
TMC = Total annual maintenance cost
AEC = Annual energy cost
ALC = Annual Lighting Costs, (AIC+TMC+AEC)

Annualized Installation Cost (AIC), Total annual maintenance cost (TMC), and Annual energy costs (AEC) are expressed in dollar per mile basis for mainline sections and total dollar value for interchanges. The Annual Lighting cost (ALC) is the sum of AEC, TMC, and AIC.

Night Crash Rate (NCR) is expressed as crashes per million vehicle mile for mainline sections or crashes per million entering vehicles for interchanges.

%ADTn is obtained by examining traffic data.

The following cost should be utilized when applying average crash cost:

$1.7 million/fatality
$14,000/injury
$3,000/property damage

Crash Reduction Factors (CRF) are based upon table:

Site Description	CRF
Urban Freeway Interchange	0.80
Urban Freeway Mainline	0.20
Rural Freeway Interchange	0.80
Rural Freeway Mainline	0.20
Non-Controlled Access Roadways	0.20
Rural Intersection	0.20
Rural Mainline	0.10
Urban Intersection	0.20
Urban Mainline(Commercial)	0.40
Urban Mainline(25% Commercial)	0.30
Urban Mainline(5% Commercial)	0.20

Benefit –Cost Ratios equal to 1.0 or more indicate that lighting is justified for high crash locations. At locations without supporting high crash data, benefit –cost ratios should be 2.0 or greater. Ultimately, ranking should be according to the overall value benefits to the public.