City of Mankato Street Lighting Policy

I. OVERVIEW

The intent of this policy is to specify street lighting standards that will uniformly be implemented throughout the city. This policy has been designed to promote vehicle and pedestrian safety that is fair and affordable to the city and its residents.

Street lighting plans shall be submitted to the city for review, with the final approval of the plan determined by the city engineer. The following guidelines shall be implemented for new and existing developments.

A. New Subdivisions

The developer shall pay the full capital costs of every light to be installed by the appropriate utility company for that area. This includes, but is not limited to, poles, fixtures, underground wiring, and any equipment necessary to construct an operational lighting system. The developer shall pay all operational and maintenance costs associated with lighting above the city of Mankato's minimum standard lighting design until the costs can be transferred to the future property owners

All light poles and fixtures shall be the current city standard color.

1. Residential Streets - Minimum Standards

Street lights shall be located at all intersections. If intersections are spaced more than 750 feet apart, mid block lighting shall be provided at a maximum spacing of 500 feet or equidistant between the intersections. For dead end streets, lighting shall be provided at the intersection and a minimum spacing of 330 feet and maximum of 500 feet along the street segment.

Street light standards shall be as follows:

- Standard Street Light Type: 30' direct-buried fiberglass pole, 4' mast arm, 100W high pressure sodium bulb, and full cutoff Cobrahead style fixture.

Alternatives to the standards listed above may be proposed for consideration of the city engineer. See Special Lighting Districts for additional information.

2. Collector Streets in Residential Areas - Minimum Standards

Street lights shall be located at all intersections. If intersections are spaced more than 750 feet apart, mid block lighting shall be provided at a maximum spacing of 500 feet or equidistant between the intersections. Street lights shall also be placed on sharp curves.

Street light standards shall be as follows:

- Standard Street Light Type: 30' direct-buried fiberglass pole, 4' mast arm, 100W high pressure sodium bulb, and full cutoff Cobrahead style fixture.

Alternatives to the standards listed above may be proposed for consideration by the city engineer. See Special Lighting Districts for additional information.

3. Arterial and Collector Streets - Minimum Standards

Street lighting installed along these routes is typically designed and constructed by the city of Mankato.

Typical geometric layouts may be one or a combination of the following:

- Two-sided lighting
  - Staggered configuration
  - Opposite configuration
- One-sided
- Median lighting
- Trail lighting

4. Industrial and Commercial Areas - Minimum Standards

Street lights shall be located at all intersections. If intersections are spaced more than 750 feet apart, mid-block lighting shall be provided at a maximum spacing of 500 feet or equidistant between the intersections. Street lights shall be placed on sharp curves

Street light standards shall be as follows:

- Standard Street Light Type: 30' direct-buried fiberglass pole, 4' mast arm, 100W high pressure sodium bulb, and full cutoff Cobrahead style fixture.

5. Special Lighting Districts

Special lighting districts may be established where alternative lighting standards are proposed and are in excess of the standards listed in this policy. The district shall provide for the property owners benefitting the lighting to pay all costs associated with the lighting including , but not limited to, poles, fixtures, underground wiring, any equipment necessary to construct an operational lighting system, and all operational and maintenance costs associated with lighting. The Special Lighting District shall require the establishment of an owner's association with consent to be assessed for costs should the association fail to pay any billed costs. Special lighting districts will be reviewed by the city engineer, Multi-Modal Transportation Committee, and must be approved by the Mankato city council.

B. Existing Development

Where traffic and pedestrian safety clearly warrants, a street light may be placed upon the recommendation of the city engineer's office. Warrants shall include a minimum Average Daily Traffic (ADT) of 2000 vehicles and/or a layout such that, in the city engineer's estimation, significant safety improvement might be obtained by the installation of a street light. Benefits of such installations extend to the city as a whole and will be done at the city's expense.

Alternatively, property owners may request additional lighting for their neighborhoods through a petitioning process. It is requested that petitioners contact the city prior to circulating their petition, to obtain direction as to where street lights are warranted and where a special lighting district may need to be defined. The petitioning process will be as follows:

- The property owner shall contact the city engineering department and provide the location of the proposed light. The engineering department will then determine the affected area. The affected area will become a special lighting district if warrants are not met. If warrants are met, no further action is required by the petitioner.

- If warrants are not met, the petitioner shall contact the appropriate utility company to obtain a quote, which shall include all capital costs for the installation and maintenance of the proposed lights.
- The petitioner shall circulate a petition and obtain signatures from 35 percent of the property owners in the affected area that are in favor of the proposed light location(s). The petition shall include proposed light location(s), cost of installation, and monthly maintenance cost. All costs associated with purchase, installation, and maintenance shall be divided among the affected area property owners.
- The engineering department will validate the petition for accuracy.
- If approved, payment shall be made prior to the installation of the light(s), including the cost of poles, fixtures, wiring, and any other cost that may be associated with the operation of the light(s). The method of payment shall be as directed by the city finance department.

In existing developments, new lights shall match in style and wattage to those already in place. If no lights are currently in place, the 100 watt H.P.S. cobra style shall be the standard.

C. Alley Lighting

The city does not currently light alleys. Property owners may request lights to be installed in alleys and may proceed under one of three options: petitioning process, self installation, pedestrian safety.

Lighting fixture standards for all 3 options shall be as follows:

- Automatic Protective Light/Night Watch light semi-cutoff 100 watt H.P.S. lamp mounted on a wood pole, conforming to city standards.

1. Petitioning Process

The petitioning process will be as follows:

- Owners shall contact the city engineering department and provide the location of the proposed light. Engineering will then determine the affected area. Typically, affected areas will be defined as the alley providing access to one block area. The affected area will become a special lighting district if approved.
- The petitioner shall contact the appropriate utility company to obtain a quote, which shall include all capital costs for the installation and maintenance of the proposed lights.
- The petitioner shall circulate a petition and obtain signatures from a minimum of 4 property owners or 35 percent, whichever is less, in the affected area. The petition shall include proposed light location(s), cost of installation, and monthly maintenance cost. All costs associated with purchase, installation, and maintenance shall be divided among the property owners in favor of the proposed light.
- The engineering department will validate the petition for accuracy.
- If approved, payment shall be made prior to the installation of the light(s), including the cost of poles, fixtures, wiring, and any other cost that may be associated with the

operation of the light(s). The method of payment shall be as directed by the city finance department.

2. Self-Installation

A property owner residing along an alley may make a request to the appropriate utility company to install an automatic protective light/nightwatch light. The resident shall be responsible for all installation and operating costs. The costs may be distributed among the neighbors, but the city will have no involvement in this process.

3. Pedestrian Safety

Where pedestrian safety clearly warrants, a street light may be placed upon the recommendation of the city engineer's office. Benefits of such installations extend to the city as a whole and will be done at the city's expense.

II. FUNDING FOR INSTALLATION

1. New Subdivision

Residential, commercial, and industrial developers will pay for the installation of street lighting systems meeting street lighting standards. Requests for additional lights or alternate styles will result in a special lighting district.

2. Special Lighting Districts within Existing Subdivision

New street lights shall be paid for by the property owners within the affected area as determined by the engineering department. Payments will be received by the engineering department, who will then reimburse the appropriate utility company for the installation of the street lights. Property owners shall have the option to pay the city the total cost of installation immediately, or add it to their utility bill and have a monthly fee over the duration of 1 year plus interest.

III. OPERATION AND MAINTENANCE

1. Standard Street Lighting

Standard street lighting is defined as that lighting that conforms to the minimum requirements of this policy. The replacement of bulbs, fixtures, and poles are maintained by one of the city's appropriate utility companies through operating costs. Residents are requested to contact either the city of Mankato's website or the appropriate utility company for street lights that are burnt out, stay on continuously, or are turning on and off repeatedly. Maintenance costs, which include power, equipment failures and equipment replacement, are covered through the operating costs of the street lights and shall be a cost to the city of Mankato.

A lighting utility monthly charge is proposed for all city utility customers. The purpose of the utility charge is to fully fund the operation, installation, maintenance, and replacement of street lighting in the city. The amount of the utility charge shall be established by city council resolution.

The establishment of the lighting utility shall take into account the various lighting standards for the residential, commercial, and industrial streets. The utility must be

established by ordinance and conform to the standards of the Mankato City Code and Charter.

City of Mankato Public Works and Engineering Department
City of Mankato Website
www.ci.mankato.mn.us
Report a street light outage under the engineering or public works departments

Benco Electric
PO Box 8
Mankato, MN 56002
1.888.792.3626
http://www.benco.org/contactus.cfm

Xcel Energy
210 Lime Street, POB 1090
Mankato, MN 56002
1.800.960.6235
http://www1.xcelenergy.com/ODL/OUTAGEREPORT/

Please see the online Utility Territory Map on the city of Mankato website for the appropriate lighting utility company.

2. Special Lighting Districts

Special lighting districts may be established where alternative lighting standards are proposed and are in excess of the standards listed in this policy. The district shall provide for the property owners benefitting the lighting to pay all costs associated with the lighting including , but not limited to, poles, fixtures, underground wiring, any equipment necessary to construct an operational lighting system, and all operational and maintenance costs associated with lighting. The Special Lighting District shall require the establishment of an owner's association with consent to be assessed for costs should the association fail to pay any billed costs. Special lighting districts will be reviewed by the city engineer and Multi-Modal Transportation Committee, and must be approved by the Mankato city council.

Alley Lighting
Property owners signing and meeting the petition requirements will divide the cost amongst them and pay all associated operational costs.

The cost of energy, full maintenance, equipment, and equipment replacement shall be billed at the end of the year to the benefiting parties

IV. UTILITY TERRITORY MAP

The Utility Territory Map shows the boundaries between Xcel Energy and Benco Electric. This map may be used to route maintenance issues, requests for additional lighting and for additional development to the appropriate utility company. The utility map may be found online at the following address:

http://www.ci.mankato.mn.us/cityMaps.aspx

PRODUCT OFFERINGS OF XCEL ENERGY AND BENCO ELECTRIC COOPERATIVE

STYLE A (Standard)
A round, smooth tapered shaft available in varying heights, anchor based or direct buried.

Fiberglass – 18’ or 30’ direct buried.
COLORS: BRONZE ONLY

Aluminum – 18’ direct buried.
COLORS: BRONZE, BLACK & GREEN

Aluminum – 30’ base mounted.
COLORS: BRONZE & GREEN

Cobrahead (Standard)

Reliable Standard

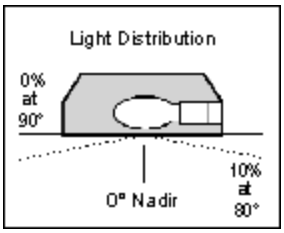
The Cobrahead is appreciated for function and form that contributes to the safety and security of well-lit streets for your residents and business patrons.

COLORS: GREY ONLY

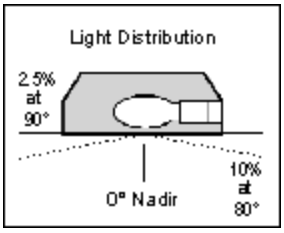
Available on pole style “A” only

V. DEFINITIONS

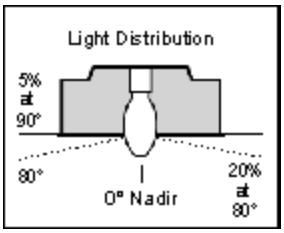
Photometry Terms and Lighting Terminology



- **Full Cutoff**: A luminaire is considered full cutoff when no light is present at or above a horizontal plane



- **Cutoff**: A luminaire is considered cutoff when a minimum amount of light is directed at a horizontal plane. Light above the horizontal plane is limited to less than 2.5% of the total lamp lumens.



- **Semi -Cutoff**: A luminaire is considered semi-cutoff when more light is permitted at a horizontal plane than in the cutoff luminaire. Similar to cutoff, light above the horizontal plane is limited to less than 5% of the total lamp lumens.

- **Luminaire:** A complete lighting unit consisting of one or more electric lamps, lamp holder, any reflector or lens, ballast and any other components and accessories.

- **Average Maintained Illuminance:** The average level of horizontal illuminance on the roadway pavement when the output of the lamp and luminaire is diminished by the maintenance factors; expressed in average footcandles for the pavement area.

- **Uniformity Ratio:** The ratio of the Average Maintained Illuminance level to the Minimum Maintained Illuminance level. The uniformity ratio is used as a design check to ensure lighting performance.

- **Footcandle:** The English unit of illuminance; illuminance on a surface one square foot in area on which there is uniformly distributed a light flux of one lumen. One footcandle equals 10.76 lux.

- **Special Lighting District:** A district or subdivision, with limits to be defined by the City Council, where property owners desire special decorative lighting or more lighting fixtures than the city's standard level of lighting and are willing to be assessed for the additional costs of the lighting.

Street Classifications

- **Major Arterials** – Facilitate relatively long trip lengths at moderate to high operating speeds with somewhat limited access to adjacent properties. Major arterials generally serve major centers of activity in urban areas and have the highest traffic volume corridors. These streets are often major gateways to the community.
- **Minor Arterials** – Provide somewhat shorter trip lengths than major arterials, generally interconnected with and augment major arterials routes at moderate operating speeds, and allow somewhat greater access to adjacent properties than major arterials.
- **Major Collectors** – Collect and distribute significant amounts of traffic between arterials, minor collectors, and local streets at moderate to low operating speeds. Major collectors provide for more accessibility to adjacent properties than arterials.
- **Minor Collectors** – Collect and distribute moderate amounts of traffic between arterials, major collectors, and local streets at relatively low operating speeds with greater accessibility than major collectors.
- **Local Streets** – Generally provide direct access to abutting properties. Local streets possess relatively low traffic volumes, operating speeds, trip lengths, and minimal through traffic movements.