

## NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE SPECIFICATION

### LIGHTING SYSTEM IMPROVEMENT

#### CODE 670

#### I. SCOPE

The work will consist of furnishing and installing materials to replace traditional light fixtures with high performance fluorescent lighting fixtures, Industrial Grade Compact Fluorescent (CFL) bulbs, pulse start metal halide bulbs, and Dimmable Light-Emitting Diode (LED) bulbs.

#### II. INSTALLATION

All manufacturer's and testing lab installation instructions shall be followed during installation of the system. All equipment shall be installed so as not to void manufacturer's warranties. All fasteners and hardware shall be tightened to the manufacturer's specifications. All electrical work shall conform to requirements in the current edition of the National Electrical Code (NEC).

The systems shall be tested to determine if the system is in proper working order, and will deliver the required lumen output.

#### III. MATERIALS

Materials shall be selected based upon recommendations from an approved ASABE S612 Energy Audit.

#### IV. SUBMITTALS

The following items are to be submitted for review and approval prior to installation of the lighting upgrade:

1. Equipment and Materials list;
2. Warranty documentation;
3. Site specific construction and installation drawings and specifications; and
4. Procedures for Operation and Maintenance.

#### V. COMPONENTS

**CFL.** Bulbs must be industrial grade and should be housed in a suitable luminaire to minimize glare. In high humidity environments or areas subject to wash down, gasketed or weatherproof housings are required to prevent corrosion and premature failure of the light system.

**LED.** Minimum 10 Watt, 6,000 Kelvin, Dimmable, Grow-out bulb.

**High Performance Fluorescent.** T5 High-Output (HO) fixtures; T12 lighting fixtures with either High Performance (HP) T8 or T5 High-Output (HO) fluorescent fixtures.

**Pulse Start Metal Halide.** Ballast must be matched to fixture type.

#### VI. DISPOSAL

Lighting replacement materials no longer in working order shall be disposed of according to manufacturer's recommendations.

#### VII. SPECIAL MEASURES

Measures and construction methods shall be incorporated, as needed and practical, that enhance fish and wildlife values while minimizing disturbances to instream and riparian habitats. Special attention shall be given to protecting visual resources as well as the physical characteristics of the streambank, streambed and surrounding vegetation.

#### VIII. CONSTRUCTION OPERATIONS

Construction operations shall be done in such a manner that erosion and air and water pollution are minimized and held within legal limits. The owner, operator, Contractor or other persons will conduct all work and operations in accordance with proper safety codes for the type of construction being performed with due regards to the safety of all persons and property.

The completed job shall be workmanlike and present a good appearance.

#### IX. BASIS OF ACCEPTANCE

The acceptability of the lighting replacement shall be determined by inspection to check:

- Appropriate submittals are provided.
- The ability of the lighting replacement to deliver the

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required lumen output.

- Submittals are reviewed and approved by NRCS prior to installation of practice measures, and
- The lighting replacement is installed and tested for proper operation.
- All required certifications are provided.
  - The Installer shall certify the installation complies with the requirements of the installation instructions provided by the manufacturer.
- Component warranties are provided.

A written guarantee shall be furnished that protects the owner against defective workmanship and materials for not less than 1 year, and includes the names of the manufacturers of the equipment.

Acceptability of any associated conservation practices shall be in accordance with the appropriate NRCS Conservation Practice Specification