



# MARK SEPPELT, P.E.

## **Career Summary:**

Prior to joining Wi-Skies LLC, Mark served as the Electrical and Mechanical Unit Chief in the Bureau of Design and Environment at the Illinois Department of Transportation (IDOT) for 21 years. In this position, Mark oversaw the design of hundreds of lighting projects on state, federal, and local highway systems. His daily responsibilities included creating, updating, coordinating, interpreting and maintaining the Department's policy on roadway lighting. Mark was responsible for providing responses for the Secretary of Transportation's office on roadway lighting related questions from the general public. He also provided position statements for the Secretary's office on legislative bills passing through the state legislature impacting IDOT policies on lighting. He was responsible for the design and review of all roadway lighting projects in Illinois with exception of Chicago. His duties also included addressing all RFI's and approving shop drawings during construction and ultimately inspected all roadway lighting projects during final acceptance. A practical engineer, Mark ensured all factors were carefully considered, specifically hosting an annual meeting with all District operation personnel to discuss lighting operation and maintenance issues. He oversaw a design team consisting of multiple consulting firms and sub-consulting firms over the span of his tenure in addition to an internal staff of electrical engineers and lighting designers and was in charge of reviewing all consultant submissions requiring prequalification in roadway lighting for the Department.

During his tenure, Mark also served as IDOT's liaison on NCHRP research projects, AASHTO committees, Illuminating Engineering Society of North America (IES), and other agency panels regarding roadway lighting. As the industry evolved, Mark corrected, updated, and modified the department's Standard Specifications for Road and Bridge Construction, Highway Standards Manual, design manual, and other manuals and guides on roadway lighting matters to be in line with these latest revisions to the recommended practice. He routinely monitored international, national, state, and local codes to keep department standards updated and technically accurate. Mark was in charge of working with the operating districts on roadway lighting related projects for new construction, maintenance, and facility relocations including supplying project cost estimates, manhour estimates, policy interpretation, design drawings, maintenance recommendations, construction questions, scheduling, and coordination issues. He assisted with the development and approval of pay items for all roadway lighting items and managed all roadway lighting project design files for the Department.

Mr. Seppelt is instrumental within the industry in guiding research regarding roadway lighting matters and was the sponsor of several research initiatives. He served on the NCHRP's 05-22 and 05-22A research projects, which is researching several critical roadway lighting issues. Mark has served as Technical Review Panel (TRP) chair for several roadway studies which investigated technological advancements in LED roadway lighting. He led a study to determine roadway lighting's Impact on Altering Soybean Growth, which led to more stringent spill lighting design criteria in rural areas. This study has led to a more robust study with the National Academy of Sciences for the affect of roadway lighting on other flora and fauna.

## **Project Summary:**

**Project Manager for Lighting at US 20 Bypass over IL 2.** The dual structures carrying US 20 over IL 2 were removed and replaced. The existing cloverleaf ramp configuration was reconfigured with two entrance and two exit ramps located at lighted intersections along IL 2. Raised median and left turn lanes were constructed along IL 2 with new traffic signal installations where interchange ramps meet IL 2. Mark was responsible for the new roadway lighting installed at the IL 2 intersections and at US 20 exit ramp terminals.

**Project Manager for Lighting at US 52/ IL 64 Bridge over Mississippi River.** The project consisted of the removal of the bridges which carried US 52/IL 64 over the Mississippi River and included reconstruction of 1,400 feet of US 52 causeway in Iowa. Also included in this project was the reconstruction of 2,400 feet of IL 84 roadway in Illinois. IL 84 reconstruction included removing and replacing guardrail, curb and gutter, sidewalk, and driveway entrances. Mark was responsible for lighting on the new bridge and at the intersection of US52 and IL 64 in Illinois was designed by Mark. Roadway lighting includes an ITS technology pilot using adaptive lighting controls with data being streamed back to the District headquarters at Dixon, IL. Lighting will be dimmed after 10PM and motion sensors will bring lighting up to full brightness as sensors detect approaching vehicles. US Coast Guard approved navigation lighting was also part of the roadway lighting design for this major river bridge.

## **Contact Information:**

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## **Education:**

- ◆ B.S. Civil Engineering  
Missouri University of  
Science & Technology,  
1978
- ◆ MBA University of Illinois  
– Springfield, 1992

## **Professional Engineering Licenses:**

- ◆ Illinois #062-041504
- ◆ Missouri #E-25872

## **Professional Societies:**

- ◆ IESNA Roadway Lighting  
Executive Committee  
Secretary



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**Project Manager for I-74 over Mississippi River Lighting.** In Moline, the 0.9-mile-long bridge of I-74 crossing over the Mississippi River, is being replaced. The project consists of several ramp interchanges and other local roadway improvement. Mark oversaw and approved the lighting design, which included smart lighting components as well as river navigation lighting and aesthetic lighting along the new bridge structure.

**Project Manager for I-57 Interchange Lighting at 6000N.** A new diamond interchange was constructed at the interchange of I-57 with 6000N. The improvement consisted of a new bridge over I-57, reconstructing and widening 6000N and intersection improvements at US 45/52 and IL 50. Other items include storm sewer, shared use path, sidewalk, embankment, curb and gutter and landscape restoration. The new interchange design called for the installation of roadway lighting and traffic signals. Mark was responsible for the complete interchange lighting for this major new interchange on I-57, which consisted of 18 high mast towers, 56 conventional poles, and underpass lighting.

**Project Manager for IL 178 Bridge over Illinois River Lighting** This project included the replacement of the existing IL 178 bridge over the Illinois River with a new bridge on a new alignment. IL 178 was reconstructed from Donaldson Street to the north, to Starved Rock Park Entrance to the south. The new alignment of IL 178 will be shifted slightly east to allow for construction of the new bridge while the current bridge remained open to traffic. The new bridge carries a 10'-0" shared-use path separated from the northbound traffic lane by a concrete barrier. Lighting for this major river bridge included navigation lighting, bridge deck and roadway lighting, which Mark was responsible for.

**Project Manager for Inspection and Replacement of High Mast Towers at Various Locations.** Mark was responsible for the inspection, removal and replacement of several light towers, removal and replacement of light poles, rewiring of the light towers and light poles, removal and replacement of the wiring, and removal and replacement of foundations for the towers and poles. Some of the affected interchanges included: IL 23/I-55 interchange, IL 116/I-55 interchange and IL 17/I-55 interchange, all in Livingston County and the IL 50/I-57 interchange in Kankakee County.

**Project Manager for Ongoing Daytime Lighting Research.** As part of ongoing high-level research work with IES, IDOT and other agencies, Mark is leading the effort to overhaul the international standard for daytime lighting within short tunnels, which are considered to be under 400'. Measuring of over a dozen tunnels has led to the belief that the amount of daytime lighting recommended within short tunnels is excessive and Mark is leading the charge to provide only lighting which would be minimally necessary to ensure good visibility throughout the tunnel and nothing more. From these tunnels and others, the hope is that international policy can be revised.

**Project Manager for Statewide Repair and Maintenance of Traffic Signals, Flashing Beacons and Roadway Lighting.** Illinois has several maintenance contracts with contractors to repair and maintain existing traffic signal, flashing beacon, roadway lighting and other electrical systems. Mark was in charge of developing revisions as necessary, and coordinating with State District Offices on all roadway lighting aspects of work.

**Project Manager for LED Retrofit Lighting at I-74 Interchanges.** Mark oversaw the design to retrofit several existing HPS interchanges to LED lighting. One such retrofit involved three interchanges along I-74 – at the IL97/US150 (Exit 54) interchange, CH 9 Knoxville (Exit 51) interchange and IL 17 (Exit 32) interchanges. These retrofit projects involved removing all existing HPS fixtures and installing new LED luminaires on existing light poles, including the design.

**Project Manager for I-74 Bridge Lighting over Illinois River.** The project included concrete deck removal and replacement, structural steel repairs, painting, roadway lighting, navigational lighting, decorative lighting and scour counter-measures. Mark was responsible for the design and construction oversight of the roadway, decorative and navigational lighting along the bridge.

**Project Manager for I-57 at I-74 Interchange Lighting.** This project consisted of completely rebuilding this major urban interchange complete with all new bridges, overpasses, and fly-over ramps. The lighting design was overseen by Mark and involves continuous freeway lighting, complete interchange lighting, and underpass lighting on both interstates and all connecting roads. Mr. Seppelt oversaw all aspects of the design including preparation of lighting plans, photometric calculations, cost estimate and specifications.

**Project Manager for Lighting along US 150 from Wright St to Cunningham Ave in Urbana, IL.** This project improved both pedestrian and vehicular safety on US 150 from Wright Street to Cunningham Avenue in Urbana as well as attempted to extend the service life of the pavement structure. These safety improvements consisted of construction of ADA compliant sidewalks and pedestrian ramps, traffic signal modernization, roadway street lighting, curb and gutter replacement, milling and resurfacing, guardrail replacement, raised reflective pavement markers and permanent pavement markings with continental style crosswalks. Appropriate measures were taken by the Contractor to preserve the surrounding environment and to provide maximum protection to the public while minimizing its disruption and inconvenience. Complete photometrics, voltage drop calculations, cost estimate, plans and specifications were managed by Mark.

**Project Manager for I-74 Bridge Deck Replacement Lighting over Market St and Illinois Central RR and Oak St.** A total of 0.8 miles of bridge deck was replaced, which spanned over both Market St and multiple railroad tracks and urban roadways below. Mark was responsible for the lighting photometrics, voltage drop calculations, cost estimate, plans and specifications for both bridge and underpass lighting.

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**Project Manager for Lighting along IL 104 from 385<sup>th</sup> Ave to US 67.** Mark was responsible for the lighting design of continuous roadway lighting along this corridor, which spanned nearly 8 miles and consisted of several bridges and urban arterial roadways. The project included the following structures: IL 104 over McGee Creek Drainage Ditch, IL 104 over Illinois River, IL 104 over Washington Street, Retaining Walls in Meredosia and a Pump Station in Meredosia. Mark also reviewed the electrical system for the pump station.

**Project Manager for Lighting along IL 29 from North Grand Ave to Hackmore Dr.** This roadway lighting project was very important to the City of Springfield because this is the major State route (IL 29, J. David Jones Expressway) from Abraham Lincoln Capital Airport into downtown Springfield. Aesthetics was not only paramount but this project was also very significant because it was the very first pilot project for IDOT to test an adaptive lighting control system. All roadway lighting design was managed by Mark.

**Project Manager for Replacement of Existing Lighting at Three Locations.** The work on this project consists of the removal and replacement of light towers, removal and replacement of light poles, rewiring of the light towers and light poles, removal and replacement of the wiring, and removal and replacement of foundations for the towers and poles. There were three locations this was completed at: Effingham County at the NB Green Creek Rest Area, Coles County at the I-57/US 45 interchange and the I-57/IL 16 interchange.

**Project Manager for I-255 from IL 15 to Collinsville Rd Lighting in St. Clair County, IL.** The work on this project consists of patching and resurfacing of mainline lanes, C-D lanes, ramps, and shoulders, structure rehabilitation, concrete barrier wall replacement, lighting replacement, guardrail replacement, pipe underdrain replacement and other drainage repairs, sign truss repairs and pavement marking. Mark was responsible for the lighting design, which included the complete replacement of continuous freeway lighting on a section of very busy interstate highway that was completely shut down for reconstruction.

**Project Manager for I-24 Bridge Lighting over the Ohio River.** This improvement consisted of navigational and aerial obstruction lighting repairs on the I-24 Bridge over the Ohio River located approximately one and a half miles south of US Route 45 near Metropolis, Illinois in Massac County. The project spanned approximately one mile and involved repairs to the navigational and aerial obstruction lighting of the existing bridge structure, which carries four lanes of I-24 over the Ohio River. Mark reviewed the electrical and lighting elements during design as well as provided construction advice.

**Project Manager for Roundabout Lighting at Herrin Rd and Cambria Rd.** The existing intersection of Herrin Rd at Cambria Rd in Williamson County was replaced with a roundabout. Mark was responsible for complete photometrics, voltage drop calculations, cost estimate, plans and specifications for the lighting at the roundabout.

**Project Manager for Lighting at the Intersection of IL 13 and Aurelia Dr.** This improvement is located east of Marion on IL 13 from Fair Street to the bridges east of Old IL 13, and includes the intersection of IL 13 and Aurelia Drive. It involved converting the IL 13 / Aurelia Drive intersection east of Marion to a Restricted Crossing U-turn (RCUT) intersection and added a right turn lane to the EB lanes for Aurelia Drive. The unusual geometric intersection lighting design was managed by Mark including full photometric calculations, voltage drop calculations, cost estimate, plans and specifications.