Title: Field Testing of LED technologies for Pavement Markings

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Select ONE Subject Area
- Materials/Pavements
- Maintenance
- Traffic Mgmt/Safety
- Structures/Geotech
- Preconstruction
- Planning
- Perf Mgmt/Data Analytics
- Public Transportation

1. Describe the problem to be addressed:
   Night-time Visibility of Pavement Markings (especially during wet weather) has been an ongoing concern for decades. Traditional pavement markings and reflective beads quickly wear out due to traffic and plowing operations. New technologies are emerging that include light emitting from the markings rather than relying on light from headlights reflecting back from the markings. As these new technologies continue to improve and evolve, it is in UDOT's interest to understand the technology. As short scanning tour of use in other states and a follow up test section are recommended to gain further knowledge on the technologies.

2. Write the project objective (25 words or less):
   1. Gain additional knowledge of use in other states, including past research, and test sections.
   2. Identify potential product suppliers, and short list to possible test section.
   3. Provide a test section, observe and document installation, cost, required training and equipment to install.
   4. Evaluate performance under real conditions for visibility and durability (compared to traditional methods).

3. Explain why this research is important:
   (In response, consider addressing specific UDOT goals, applicability in Utah or other states, etc.)
   1. Allows UDOT to gain additional knowledge of this innovative technology for potential use.
   2. Potential to improve safety, reduce accidents and severity (under permanent and work zone settings).
   3. Provides information that will help to write initial specifications, and potential uses (flowchart) for technology.

4. List the major tasks:
   1. Gather information from other states (Washington DOT, Oregon DOT) test sections and lessons learned.
   2. Test Section: Observe and Document Installation Process, Costs, etc. (WorkZone or Permanent)
   3. Evaluate In-Service Visibility and Durability.
   4. Prepare Report to document findings and recommendations.

5. List the expected deliverables (reports, manual, specification, design method, training, etc.):
   1. Literature Search, Scanning Tour, Compile Lessons Learned of use from other States.
   2. Short List potential products, test site locations, project.
   3. Install products on selected test sites, evaluate construction processes, lessons learned.
   4. Evaluate in service performance (visibility and durability)
   5. Prepare Final Report to Document Findings and Recommendations
6. Describe how the research results will be implemented:
   (In response, consider addressing UDOT leader support, process or standard improvement, etc.)
   1. Findings of Study will help UDOT to decide if this is a technology to further consider or not, and why.
   2. Assist UDOT in writing a draft specification for the use of LED pavement marking technologies.
   3. Assist UDOT in creating a Use Matrix (where and when to use technologies).

7. Requested from UDOT: $25,000  Other/Matching Funds: $10,000  Total Cost: $35,000
   (or UTA for Public Transportation)

8. Outline the proposed schedule, including start and major event dates:
   Task 1: (March 2018-June 2018): Literature Search, Scanning Tour of past research and Test Sections.
   Task 2: (May-June 2018) Identify Potential products and Test Sites
   Task 3: (July-Sept 2018) Install Test Section
   Task 4: (Oct 2018-March 2019): Evaluate Field Performance (visibility and durability)