Streetlighting Contracts Resource

Published by:

The MEARIE Group
May 2025

Managing risk together

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Introduction

Fact. Streetlighting claims continue to trend in both frequency and severity across LDC Affiliates and municipalities in Ontario. Within the MEARIE Membership, one of the top three single largest claims relates to an LDC Affiliate design project that reached completion fifteen years before the accident/injury occurred and well after the LDC Affiliate had discontinued providing streetlight maintenance and monitoring services to the area.

When negotiating contracts for streetlighting maintenance or monitoring, the primary objective is to effectively assess risk and reward while ensuring balanced risk allocation across all aspects of the work, from design to servicing. Contract negotiations can become increasingly complex, particularly when responding to competitive RFPs or engaging with municipal stakeholders. In this context, it is essential to remain aware of the risks and responsibilities involved and to carefully evaluate potential unintended liabilities and financial consequences.

This resource offers key considerations for negotiating streetlighting-related contracts. **MEARIE advises that all contract negotiations and agreements be reviewed by legal counsel, particularly regarding critical elements such as scope of work, liabilities, caps, and indemnification.**

Contract Basics

- Ensure the recitals set out the specific legal entities entering into the scope of work.
- Clearly state the specific scope of work, including frequency.
- Clearly state limitations on the scope of work including limitations on liability and resulting losses to both first and third parties.
- Ensure defined terms are capitalized and clear definitions are set out.
- Meaningfully consider the substance of the agreement and how resulting obligations may or may not fundamentally differ from your company's Conditions of Service. For example, by contrast to terms of service which preclude the guarantee of electricity supply, there can be an inadvertent expectation that lighting design and servicing means that the lights are guaranteed to be 'on' without interruption, which is simply not the case.

The following provides some specific guidance on considerations to help manage your company's exposure as it relates to streetlighting-related work, with the aim to support appropriate risk sharing by contract type.

Streetlight 'Maintenance' Contracts

The contract should contain the following:

Save Harmless – If your company's streetlighting contract is for "maintenance only," the contract should contain a provision that the municipality will save harmless the company for claims alleging either:

a) Nonfunctioning streetlights, where the date of the accident occurred prior to the expiry of the defined contract timeframe;
b) Inadequate streetlight monitoring/design/construction;

Services Being Provided – Clear and detailed description of the services intended to be provided, with defined terms. (E.g. performance of night time street patrols on a specific rotation basis).

Maintenance Timeframes – The streetlighting contract for maintenance should be worded so that the municipality must notify your company that a specific streetlight requires maintenance. There needs to be agreement that the municipality will receive confirmation from your company that the work has been completed within a defined timeframe. (e.g. 48 hours).

Regular Maintenance vs. Emergency – The contract should differentiate between (a) regular maintenance, and (b) emergency maintenance scenarios and, if applicable, that emergency maintenance would have a quicker turnaround time (e.g. 24 hours).

Notification Times – The notification type and response time should be clearly stated within the contract.

Tracking – Your company needs to positively track its compliance with these requests/agreed timeframes. This positive tracking will be useful to bolster available defenses, particularly arising from lawsuits against your company (and municipality), such as insurance claims alleging streetlights were not functioning at the time of an accident.

Monitoring System – The contract should clearly stipulate which party is responsible for the streetlight Monitoring System, and which party is responsible for facilitating any notification calls.

Updating of Maps – The contract should contain maps or otherwise well-defined descriptions of the streetlights that are included in the maintenance contract and define who is responsible for updating such maps and descriptions. This is important where boundary roads are within neighbouring municipalities and where there are non-municipal highways that intersect the municipality.

Calculation of Service Response Time – The contract should clearly state how Service Response time is calculated.

Streetlight 'Monitoring' Contracts

The contract should contain the following:

Save Harmless – If your company's streetlighting contract is for "monitoring only," the contract should contain a provision that the municipality will save harmless the company for claims alleging either:

a) Nonfunctioning streetlights, where the date of the accident occurred prior to the expiry of the defined contract timeframe;
b) Inadequate streetlight maintenance/design/construction;

Services Being Provided – Clear and detailed description of the services intended to be provided, with defined terms. (E.g. performance of night time street patrols on a specific rotation basis).

Tracking of Compliance – An internal process needs to be put into place to track compliance with outlined monitoring routines. Your company should maintain strict records of compliance with required street patrols, including a record of the results of the patrols and the disposition of any required maintenance noted by the street patrols.

Documentation – In the process of monitoring the identified area, any documentation or forms that need to be submitted to the municipality should be identified, as well as the frequency of submissions required.

Notification Calls – Identification of who is responsible for handling any notification calls.

Monitoring System – The contract should clearly stipulate which party is responsible for the streetlight Monitoring System, and which party is responsible for facilitating any notification calls.

Calculation of Service Response Time – The contract should clearly state how Service Response time is calculated.

Streetlight Design/Build Contracts

If your company enters into a streetlight design/construction contract, ideally the contract would be worded such that the municipality:

a) Is in control of the design/construction project;
b) Signs off on the completion of the project;
c) Will save harmless your company for post sign-off accident claims alleging inadequate design/construction, and
d) Agrees to limit your liability to the total value of the contract so that you avoid accepting contractual obligations that exceed this amount. Do not agree to liability terms that expose your organization to financial risks beyond what is necessary or required.

Common Contract Issues

The following table illustrates some common contract issues and some best practice remedies for these issues:

Contract Issue	Best Practice
Verbal arrangements exist for services, including agreements made by former employees of the municipalities, LDC companies and affiliates.	Secure a written contract for any services being performed/expected.
Contracts contain **indemnification provisions which favour the municipality**.	Ensure indemnity and hold harmless agreements which are fair and equitable to all parties.
Contracts have **no absolute limit on the liability your company is assuming**, making the potential indemnification outsized compared to the agreed fees being paid for the service.	Limit your liability to value of the contract only, or another limited amount, to avoid overexposing your financial obligations.
Contracts include services your company may not be planning to perform, for example, streetlighting design.	Detailed description of the services expected – and if there is a service described, ensure your company is prepared to perform this service.
Contracts do not provide sufficient detail of the services expected (for example, it may state that your company agrees to provide maintenance, but it does not state if that includes ongoing monitoring).	Ensure specific, detailed language is used to elaborate on the services being provided, including the full scope and frequency required.
Contracts lack sufficient detail on the level of services your company is to perform (E.g. monitoring is described but frequency thereof not specified).	Ensure specific, detailed language is used to describe the services being provided, including the full scope and frequency required.
Performance of the service required by the contract is not documented once performed.	Document and record all work and/or services delivered, regardless of specific contract requirements.
Contracts do not clearly specify the service area (especially boundary roads) and do not provide for how your company is to be advised of changes to the service area.	Description of service area should be specific, including which side of streets are being used for boundary roads and who is responsible for the updates.
Streetlighting standards change and there is no clarity as to who is responsible for monitoring such changes and ensuring compliance with them.	Identify who is responsible for monitoring and ensuring compliance to standards.
Insurance requirements are identified in the contract but then certificates (either for proof of insurance or having parties added to policies) are not requested/received.	Ensure to receive and scrutinize all insurance certificates, also ensuring your company is added as an Additional Named Insured on the other party's policy, when appropriate.

Other Considerations

Aside from the points that need to be considered when it comes to contracts, it is imperative to follow some other best practices as well.

Streetlights Attached to Hydro Poles – Streetlighting exposures may exist where the LDC or Affiliate does not maintain the streetlight but where the municipality attaches streetlights to hydro poles. Best practices should be developed around the alteration or replacement of a hydro pole that has a streetlight attached to it. Retention of documentation supporting work that was completed on such poles is also important to illustrate anything that is done to change these poles.

Post-Incident Reporting and Record/Equipment Retention – When an incident does occur, the following should be collected/saved. These details become critical in the event of an insurance claim:

- Retention of documentation describing the supporting work that was completed on streetlights
- Investigation and documentation as to the status of the streetlight itself and weather conditions at the time of the incident
- Obtaining of police reports
- Retention of patrol reports and maintenance work orders
- Retention of any equipment that was replaced subsequent to the incident
- Obtain post-incident video/photographs of the scene, ideally as close as possible to the day and time of the incident

All of this material is important and could be useful during an insurance claim situation.

Non-Routine Minimum Maintenance Guidelines[i]

Non-routine minimum maintenance is required anytime there is a critical failure of any system component of the Roadway Lighting System, or whenever vehicular accidents, weather or other factors have caused damage to the system components. According to the Electrical Safety Association, after detecting or being made aware of the critical failure, non-routine maintenance should be initiated in a timely manner. The contract should state the time frame in which you are required to respond. Listed below are the possible critical failures:

- Aerial span wire down
- Pole knocked down or hit
- Power supply knocked down
- Power supply failure
- Ground fault
- Presence of voltage on non-current carrying system components
- Energization of surfaces accessible by the public
- Overhead equipment unfastened or hanging over roadway
- Damage that exposes the public to energized electrical equipment
- Faulty photo control circuits for group control of lighting
- Unbalanced, unlatched or partially unlatched high mast lighting ring
- Failure of a pole, arm or other structural element

Non-Routine Maintenance and Inspection Reports should be completed for all non-routine maintenance activities and should contain the following information:

- Date, time and origin of report
- Location of deficiency
- Date and time of arrival at the site
- Weather conditions at the site
- Defects as observed
- Steps taken to rectify the defects and description of repair work completed
- Inspection reports shall include status of the following functions:
    a) Operational status
    b) Status of all protection equipment – surge protectors, breakers, lightning arrestors, etc.
    c) Conditions and status of all hardware, poles, luminaires, etc.
- Status of all grounding and bonding equipment
- Any additional or follow-up work that may be required and the relative urgency of the follow-up work required, and temporary repairs made
- Note of any police officer's name and badge number and complete damage report detailing material and repairs required
- Record Incident or Motor Vehicle Collision Number if available
- All reports must contain full details of work performed
- Date and time repairs were completed

Routine Minimum Maintenance Guidelines

Routine Maintenance activities should be completed on all Roadway Lighting Systems and should include:

- Inspecting, checking, elementary testing, cleaning, lubricating and performing minor repairs on all Roadway Lighting System Components including luminaires, lighting brackets, wiring, poles, frangible and safety bases, pads and footings, lowering and raising devices, sub-stations, distribution assemblies, cabinets and power supplies on a regular basis.
- Visual inspection and repair of all grounding and bonding connections and terminations once every four to five years as part of the re-lamping cycle. Check that all connections and terminations are tight; and that wires are not corroded, frayed, or broken.
- Testing, repair and replacement of faulty components on all Roadway Lighting System Components including luminaires, lighting brackets, wiring, grounding, poles, pole bases, frangible and safety bases, pads and footings, lowering and raising devices, sub-stations, distribution assemblies, cabinets and power supplies a minimum of once every four years. Luminaires that are replaced should be replaced with luminaires of similar photometric performance, or as directed by the asset owner.
- Perform ground resistance testing at each power supply ground electrode a minimum of once every four years.
- Safety and Functionality – Ensure that all streets, roadway area, and sign lighting are operational and meets design and regulatory standards.

- Response Times:
    - Repair or replace lighting that poses a safety hazard within 1 hour.
    - Address lighting failures that cause traffic disruptions within 1 hour.
    - Repair or replace non-critical deficiencies within 30 days.
- Specific Lighting Failures:
    - If half or more of the luminaires at a signalized intersection fail, respond within 1 hour.
    - If any luminaires over a marked pedestrian crossing fail, respond within 1 hour.
    - If two-thirds or more of luminaires fail at an unsignalized intersection or roadway, respond within 1 hour.
    - If three adjacent luminaires fail, respond within 1 hour.
    - If less than half of the luminaires fail at a signalized intersection or pedestrian crossing, respond within 7 days.
    - If two adjacent luminaires fail, respond within 7 days.
- Preventative Maintenance – Conduct regular inspections and replace high-intensity discharge (HID) lamps every 48 months, with 25% being replaced annually.
- Documentation – Maintain detailed records of inspections, repairs, complaints, and equipment modifications.[ii]

In addition to the aforementioned Routine Minimum Maintenance activities, the following activities should be completed for all High Mast Lighting Systems:

- Top-latching raising and lowering systems should be inspected, operationally tested, and maintained at least once every two years.
- Non-latching raising and lowering systems should be inspected, operationally tested, and maintained at least once every six months.

Routine Maintenance and Inspection Reports should be completed for all routine maintenance activities and should contain the following information:

- Date, time and origin of report
- Location of light
- Date and time of arrival at the site
- Weather conditions at the site
- Defects as observed
- Steps taken to rectify the defects and description of repair work completed
- Inspection reports shall include status of the following functions:
    a) Operational status
    b) Status of all protection equipment – surge protectors, breakers, lightning arrestors, etc.
    c) Conditions and status of all hardware, poles, luminaires, etc.
- Status of all grounding and bonding equipment
- Any additional or follow-up work that may be required and the relative urgency of the follow-up work required, and temporary repairs made
- All reports must contain full details of work performed
- Date and time repairs were completed

Municipal Highway Act

The government of Ontario has a minimum maintenance standard for municipal highways which fall under municipal jurisdiction. Based on average speed limit and amount of motor vehicles on the road a classification is set out to determine how often it needs to be maintained. Section 10 specifically talks about luminaires. The standards mentioned include:[iii]

1. The standard for the frequency of inspecting all luminaires to check to see that they are functioning is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 366/18, s. 12.
2. For conventional illumination, if three or more consecutive luminaires on the same side of a highway are not functioning, the standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 12.
3. For conventional illumination and high mast illumination, if 30 percent or more of the luminaires on any kilometre of highway are not functioning, the standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 366/18, s. 12.
4. Despite subsection (2), for high mast illumination, if all of the luminaires on consecutive poles on the same side of a highway are not functioning, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 366/18, s. 12.
5. Despite subsections (1), (2) and (3), for conventional illumination and high mast illumination, if more than 50 percent of the luminaires on any kilometre of a Class 1 highway with a speed limit of 90 kilometres per hour or more are not functioning, the standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 366/18, s. 12.
6. Luminaires are deemed to be in a state of repair,
    (a) for the purpose of subsection (2), if the number of non-functioning consecutive luminaires on the same side of a highway does not exceed two;
    (b) for the purpose of subsection (3), if more than 70 percent of luminaires on any kilometre of highway are functioning;
    (c) for the purpose of subsection (4), if one or more of the luminaires on consecutive poles on the same side of a highway are functioning;
    (d) for the purpose of subsection (5), if more than 50 percent of luminaires on any kilometre of highway are functioning. O. Reg. 366/18, s. 12.
7. In this section,

    “conventional illumination” means lighting, other than high mast illumination, where there are one or more luminaires per pole;

    “high mast illumination” means lighting where there are three or more luminaires per pole and the height of the pole exceeds 20 metres;

    “luminaire” means a complete lighting unit consisting of,
    (a) a lamp, and
    (b) parts designed to distribute the light, to position or protect the lamp and to connect the lamp to the power supply. O. Reg. 239/02, s. 10 (7).

The table below shows the frequency in which the streetlights would need to be serviced. The maintenance schedule that is set as part of the contract should at least meet these minimum standards to be compliant with the Municipality Highways Act.

Class of Highway	Time
1	7 days
2	7 days
3	14 days
4	14 days
5	14 days

Looking Ahead - Harnessing AI for Smarter Streetlight Management

Adopting technological solutions in your streetlight maintenance practice can reduce effort and create efficiencies. These solutions can also automate certain types of monitoring and data collection that can be incorporated into your risk management tactics, potentially reducing operational costs and avoiding losses. The following are features to consider:

- **Predictive Maintenance: Preventing Failures Before They Happen** – AI-powered analytics leverage historical data, environmental conditions, and sensor readings to predict potential failures before they occur. This proactive approach minimizes downtime, reduces maintenance costs, and ensures uninterrupted service.
- **Automated Monitoring & Fault Detection** – By integrating with **IoT sensors** and **smart lighting systems**, AI continuously monitors streetlights for outages, voltage fluctuations, or dimming issues. Automated alerts enable maintenance teams to respond swiftly, improving service reliability.
- **Optimized Energy Usage for Sustainable Cities** – AI-driven **adaptive lighting** adjusts brightness based on real-time conditions, such as traffic flow, weather, and pedestrian activity. This dynamic approach enhances safety while significantly reducing energy consumption.
- **Efficient Route Planning for Repairs** – AI optimizes maintenance schedules and repair routes, reducing travel time and fuel costs. By prioritizing critical repairs, municipalities can improve service efficiency and allocate resources more effectively.
- **Smart Integration with City Infrastructure** – AI seamlessly integrates with **traffic management systems**, **weather forecasts**, and **municipal databases** to enhance urban planning. For example, AI can adjust lighting based on weather conditions or emergency situations, improving overall city resilience.
- **Cost Reduction & Sustainability** – By minimizing unnecessary energy use and streamlining maintenance operations, AI helps cities reduce operational costs and lower their carbon footprint—supporting long-term sustainability goals.

AI-driven streetlight maintenance is paving the way for **smarter, safer, and more sustainable cities**. As municipalities embrace these innovations, they can expect improved efficiency, enhanced public safety, and significant cost savings.

Here are some case studies showcasing AI-powered streetlight technologies:

1. AI-Powered Adaptive Streetlighting – Greece

The **A8 Motorway in Greece** implemented **AI-driven adaptive streetlighting** to enhance energy efficiency, traffic safety, and sustainability. The system uses **IoT-based smart streetlight controls** that adjust brightness based on **predicted traffic flow and weather conditions**, reducing energy consumption by **up to 75%** and lowering the carbon footprint by **25%**. The project received the **Golden Award** in the **"Energy Innovation"** category.[iv]

2. AI Streetlights with Motion Cameras – Taiwan

In **Taoyuan City, Taiwan**, AI-powered streetlights were integrated with **motion cameras** to monitor pedestrian and vehicle movement. If no activity is detected for **10 minutes**, the lights automatically dim by **50%**, reducing electricity use by **around 12%**. This innovation helps optimize energy consumption, as streetlighting accounts for **40% of total municipal energy use**.[v]

Assuming these types of technologies become more common, new considerations within your contracts will need to be made, to ensure reliance on the technology does not create more risk exposure than originally contemplated.

Conclusion

Best practices should be followed to ensure your streetlighting contracts are detailed and do not leave anything to interpretation as to the services being provided and agreed to through the contract. Meticulous documentation to prove that work is being completed according to the contract is important. Lastly, developing post-incident processes (in line with the "Other Considerations" tips included in this resource) help in the event of a liability claim.

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[i] **Unknown Author**. (n.d.). *Guidelines for the design, installation, operation & maintenance of street lighting assets*. GUIDELINES FOR The Design, Installation, Operation & Maintenance of Street Lighting Assets

[ii] **EMSA**. (n.d.). *Schedule 1 - Specifications*. EMSA Schedule 1- Specificationss.pdf

[iii] **Government of Ontario**. (n.d.). *Ontario Regulation 239/02: Minimum maintenance standards for municipal highways*. Retrieved from https://www.ontario.ca/laws/regulation/020239

[iv] **Tvilight**. (n.d.). *AI-powered adaptive street lighting: Greece*. Retrieved from https://www.tvilight.com

[v] **Local Government Information Unit (LGIU)**. (n.d.). *AI and the council: Case studies and resources for local government*. Retrieved from https://lgiu.org/blog-article/ai-and-the-council-case-studies-and-resources-for-local-government