

To: Settlers Green Committee

Re: Maintenance Issue/Safety Issue

Date: November 14, 2021

Issue

The vast majority of the street light fixtures in Settlers Green are in need of mechanical repairs to restore the physical integrity of the structures.

Background

During work to replace a faulty lamp in a street light outside 12 Settlers Way, it became apparent that the lamppost top housing retaining system had failed – the result of which is a top-heavy lamp housing now in danger of being dislodged if the supporting lamp post is nudged/struck by a vehicle or other above average impact. All supporting lamp posts appear to be rigidly located, with the issue being contained to the lamp housing fixings.

Although there are at least three different physical designs used in Settlers Green, only one (#33 on the map) does not have the three-piece lamp housing common to both other designs, as shown below.



Safety risks

From a safety perspective, there is minimal risk of the housing becoming detached and falling to the ground, mainly due to the attachment of the electrical cabling. However if the cabling connection should fail then the risk of the housing falling to the ground increases significantly.

The risk of the housing becoming dislodged due to factors other than impacts (wind etc) is considered unlikely, although not impossible. A more comprehensive Risk Matrix is shown attached.

Current Status

Of the 33 lamp posts comprising the street light system, 23 are in need of some mechanical repair to restore their physical integrity, with only 8 remaining physically 'healthy' (wrt this particular issue). Without a more thorough review of at least a few of the affected lamps, it is difficult to identify a universally workable repair solution. However, it appears it could be as simple as drilling/tapping new retaining holes and installing stainless steel grub screws – or it could require the installation of new machined retaining collars.

Options

A more detailed review of two differently designed lamp posts will determine the extent of the issue and a possible solution. However, beyond that the repair of all affected lampposts will require the committee to decide on how the work should be completed. The following options are offered for consideration:

Option 1 Engage an appropriately licensed Electrical contractor to complete the work. As a baseline estimate, it's likely that each affected lamppost will require:

- 2 hours labour (including setup and restoration) @ \$145/hour - Up to \$30 in parts

This would equate to (estimated) ~ \$320/lamppost. For 23 lampposts = \$7360. Time to complete (once an agreed engagement has been negotiated) ~ 6 Days

Option 2 As for Option 1, but include all Settlers Green lampposts. So, for 32 lampposts = \$10240. Time to complete ~ 8 Days

Option 3 As for Option 1, but include renewal of light fixture. Would have the advantage of ensuring all lamps share the same (within reason) lifespan and address any deterioration issues.

- 3 hours labour (including setup and restoration) @ \$145/hour
- Up to \$80 in parts (comprising fixings, lamp socket and lamp)

This would equate to (estimated) ~ \$515/lamppost. For 23 lampposts = \$11,845. Time to complete (once an agreed engagement has been negotiated) ~ 8 days. For 32 lampposts = \$16,480 and 11 days

Option 4 Complete the work using in-house expertise. Cost would be limited to materials only, estimated to be ~\$1840 for 23 lampposts, and \$2560 for 32 lampposts. However, time to complete would be determined by the availability of in-house labour, however an estimated 2 lampposts per day is achievable based on one day per week. Total project time to complete would then be 12/16 weeks.

Recommendation

Engage in-house labour to identify workable solution, including more accurate costings/time to complete. Then adopt a suitable option as above.

Appendix 1 - Hazard and Risk Assessment for an Impact Incident

Possible result:					
<input checked="" type="checkbox"/> Injury	<input checked="" type="checkbox"/> Infrastructure damage	<input checked="" type="checkbox"/> Disruption to Community amenity			
Involving:					
<input checked="" type="checkbox"/> Electricity	LPG gas	Gas/pressurised containers			
Affecting:					
Nearby Homes	Driveway/paths	<input checked="" type="checkbox"/> Street Lighting			
Impacts upon:					
<input checked="" type="checkbox"/> Residents	<input checked="" type="checkbox"/> Visitors	<input checked="" type="checkbox"/> Delivery personnel			
Other/details: Impact NOT considered to result in injury to persons other than those in direct proximity to incident.					
Ratings					
Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Critical
Almost certain	Medium	Medium	High	Extreme	Extreme
Likely	Low	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Low	Medium
Description					
Consequence	Description of consequence	Likelihood	Description of likelihood		
1. Insignificant	No treatment required.	1. Rare	Will only occur in exceptional circumstances.		
2. Minor	Minor injury requiring first aid treatment (e.g. minor cuts, bruises, bumps).	2. Unlikely	Not likely to occur within the foreseeable future or during rectification work.		
3. Moderate	Injury requiring medical treatment.	3. Possible	May occur within the foreseeable future, or during rectification work.		
4. Major	Serious injury (injuries) requiring specialist medical treatment or hospitalisation.	4. Likely	Likely to occur within the foreseeable future, or during rectification work.		
5. Critical	Loss of life, permanent disability or multiple serious injuries.	5. Almost certain	Almost certain to occur within the foreseeable future or during rectification work.		
Assessed risk level	Description of risk level				
Low	If an incident were to occur, there would be little likelihood that an injury would result.				
Medium	If an incident were to occur, there would be some chance that an injury requiring first aid would result.				
High	If an incident were to occur, it would be likely that an injury requiring medical treatment would result.				
Extreme	If an incident were to occur, it would be likely that a permanent, debilitating injury or death would result.				