

**To:** CEA Committee  
**From:** Eric S. Lom, City Traffic Engineer  
**Date:** April 1, 2014  
**Re:** Request to Upgrade Truck #491 when Replaced in 2015

The Traffic Section acquired a non-CDL platform lift truck in 2003 (Truck 491) primarily as a way of improving the safety and efficiency of our traffic signal and street light maintenance. Prior to that time, the Traffic Section's seasonal workers would climb 14-foot step ladders alongside live traffic lanes as they performed traffic signal maintenance, which was inefficient and presented serious safety issues.

Truck 491 is equipped with a 5ft by 8ft platform lift that has *no* ability to articulate forward or backward; it can simply move straight up and down, with limited ability to move to the right or left (see Figure 3). And, while its working height of 29 feet was adequate for most tasks in 2003, most of today's traffic cameras and taller street lights require a device with a minimum working height of about 34 feet.

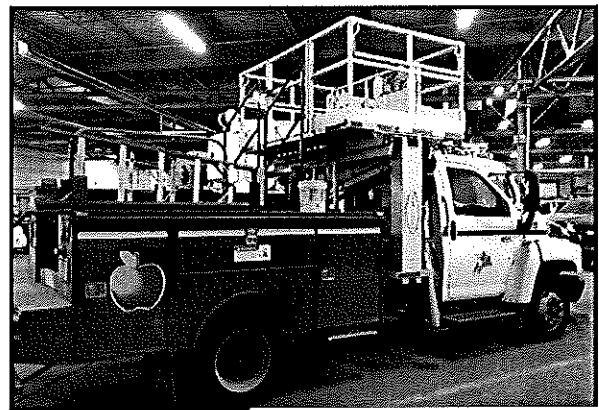


Figure 1 - Existing Platform Truck (491)

As the Traffic Section's mission has evolved and our maintenance and construction responsibilities have continued to increase, we have found that the platform lift's limited capabilities inhibit our ability to safely and efficiently perform our duties. A few examples:

- **Routine Maintenance:** Each year, our seasonal employees are tasked with performing routine cleaning and inspection on 50% of our 118 signalized intersections. While the platform lift is able to reach most of the traffic signal displays, it is not able to reach many of our newer street lights and traffic cameras. As such, we need to send a separate crew to each site with our larger boom truck to complete the remaining work (street light cleaning/relamping and traffic camera cleaning), which is extremely inefficient and costly.
- **Infrastructure Inspections:** In order to efficiently and safely perform routine structural inspections of our infrastructure, we need an aerial truck that has an adequate working height. The existing platform lift does not allow us to complete this work due to its limited capabilities.
- **Street Light Maintenance/Expanded Reach:** When servicing street lights on median islands on major roadways, truck 491 must be positioned directly beneath each light to allow for adequate working height (if it can reach the light at all). This requires a separate set-up and tear-down for each light, as well as the frequent need to position the truck in a through lane (rather than in a turn lane), which unnecessarily impedes traffic and increases the likelihood of a severe crash. A truck with an articulating aerial boom lift would be able to reach multiple lights from one location, while also allowing the truck to be positioned in a safer location.
- **Day-to Day Operations:** Because the platform lift is extremely limited in its reach and articulation and has no ability to lift materials, it is not capable of performing many of our day-to-day maintenance and construction functions, such as responding to knockdowns, constructing traffic signal and street lighting infrastructure and performing routine maintenance. This creates a situation where we have only one truck that is capable of doing this type of work and, when it is out of service, we cannot perform our required essential services.

**Table 1 - Truck Specification Comparison**

Specification	Existing Platform Lift (491)	Proposed Aerial Lift Truck
Jib Lifting Capacity (pounds)	0	<u>1000</u>
Working Height (ft)	29	<u>46</u>
Horizontal reach (ft)	6	<u>30</u>
Platform Rotation (degrees)	0	180
Boom Rotation (degrees)	0	360

**Table 2 - Task Suitability Comparison**

Task	Existing Platform Lift (491)	Proposed Aerial Lift Truck	Approximate Task Frequency
General Street Light Maintenance	Poor <sup>2,3</sup>	Excellent	Daily
General Traffic Signal Maintenance	OK/Poor <sup>2,3</sup>	Excellent	Daily
Knockdowns	Poor <sup>1,2,3</sup>	Excellent	100 days/yr
Construction	Poor <sup>1,2,3</sup>	Excellent	100 days/yr
Traffic Signal LED Replacement	OK <sup>3</sup>	Excellent	500 modules/yr
Traffic Signal LED Cleaning	OK <sup>3</sup>	Excellent	2500 modules/yr
Storm Damage	Poor <sup>1,2,3</sup>	Excellent	Occasional
Structural Inspections	Poor <sup>2,3</sup>	Excellent	4weeks/yr
Traffic Camera Cleaning	Poor <sup>2,3</sup>	Excellent	150 cams/quarterly
Planned Street Light Relamping	Poor <sup>2,3</sup>	Excellent	200 lights/yr

Notes: <sup>1</sup>No lifting capability, <sup>2</sup>Limited Working Height, <sup>3</sup>Limited Horizontal Reach, <sup>4</sup>Limited to 1 person on platform

We propose to replace Truck 491 in 2015 with a non-CDL truck which is equipped with a 40-foot fully-articulating aerial boom lift (this would look similar to a Time Warner Cable service truck). This truck would, in effect, become the smaller version of our larger boom truck, with the capability and flexibility of performing nearly all our required tasks. As such, it would greatly improve our efficiency and our ability to handle our increasing construction and maintenance workload without the need for additional manpower or vehicles. It would also be used by other divisions/groups for such tasks as:

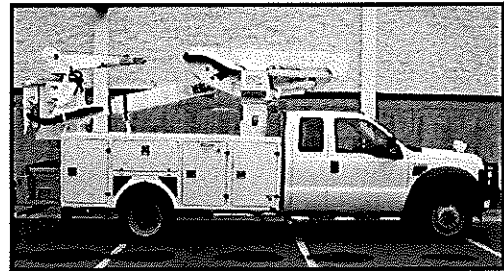


Figure 2 - Proposed Aerial Lift Truck (example)

- Holiday decoration installation/removal/maintenance (Streets Division)
- Banners installation/removal/maintenance (Streets Division)
- Flags installation/removal/maintenance (Streets Division)
- Traffic sign installation/removal/maintenance (Sign Shop)

The estimated additional cost to replace truck 491 with an aerial lift truck as described herein is \$28,000. If approved, the additional cost for the upgrade would be included in the DPW budget for 2015.

**Figure 3 – Operating Envelope Comparison**

