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**MEMORANDUM**

**TO:** National Capital Region Emergency Preparedness Council

**FROM:** Andrew J. Meese, AICP  
Systems Management Planning Director  
Department of Transportation Planning

**DATE:** February 12, 2014

**SUBJECT:** Update on COG Incident Management and Response  
Action Plan Recommendations: Back-Up Power for Traffic  
Signals

The Incident Management and Response (IMR) Action Plan recommended that the region “conduct an assessment of and expeditiously install back-up power for major traffic signals.” In response, COG's Transportation Planning Board (TPB) staff conducted surveys on the number and types of traffic signal power back-up systems in the Washington Region as of the following dates:

- December 31, 2011
- June 30, 2012
- December 31, 2012
- June 30, 2013

The TPB's Traffic Signals Subcommittee has recommended the surveys continue henceforth on an annual basis – the next survey will be conducted as of June 30, 2014.

Two types of power back-up systems have been tracked in these surveys. Battery-based systems consist of pre-installed batteries at the traffic signal site to provide auxiliary power instantly. However, batteries are depleted after several hours of operation and have a limited shelf life that requires periodic replacement. Generator-based systems include those that have permanent generators installed on-site and those that rely on portable units. Though generators can operate over an indefinite amount of time, they present logistical challenges related to the delivery of portable units and fuel. Signals equipped with battery back-ups may also be equipped to be generator-ready. Agencies consider their own needs and capabilities when choosing among battery-based or generator-ready systems.

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Agencies in charge of signal operations and maintenance have developed criteria to identify priority locations for the installation of power back-ups for traffic signals. Factors considered include: access to important facilities (e.g. airports, military bases, and freeways); complicated or unusual geometry; identification of intersections as critical by police or evacuation plans; coordination of signals within an interconnected network.

The results from the surveys, including the most recent update as of June 30, 2013, are shown in the table below.

<b>Type of Back-Up</b>	<b>12/31/2011</b>	<b>6/30/2012</b>	<b>12/31/2012</b>	<b>6/30/2013</b>
<b>Battery-Based</b>	15%	22%	26%	26%
<b>Generator-Ready</b>	N/A	42%	50%	61%

The surveys show that power back-up system installations throughout 2011 and 2012 have increased the percentage of battery-based systems – though this number remained steady between December 2012 and June 2013. In contrast, the number of generator-ready systems continued to grow, showing an increasing emphasis on those systems among agencies. Note that the battery and generator percentages are not additive, since signals may be both battery-equipped and generator-ready. Overall, the current survey results show that at least 61% of the region's signals currently have some type of back-up available to them.

The surveys indicate that the IMR Action Plan has resulted in awareness and continuing consideration of the topic. There is agreement among signals agencies to consider emergency preparedness needs in the placement of back-up systems, and to coordinate regionally.