

# Rethinking Lighting Levels to Conserve Energy

AT THE MAIN TERMINAL PARKADE



## About the Main Terminal Parkade

Upgraded in 2014, the main terminal parkade uses both LED lights, as well as controls that allow for dimming if no movement is detected. This project used the following strategy:

- Place 140 motion sensors throughout the parkade and connect them to the lighting control system
- Set perimeter lights on P1 and P2 to dim from 100 percent to 20 percent when adequate ambient daylighting is available.
- Set interior lights on P1 and P2 to dim from 100 percent to 40 percent if no movement is detected.

While these improvements helped YVR to save energy, the Energy Team believed that they could further increase these savings.

## Dimming lights and reducing dwell time

Over the second half of 2018, the Vancouver Airport Authority continued to review dimmer settings and dwell time for the motion sensors and made the following adjustments:

- Set perimeter lights on P1 and P2 to dim from 100 percent to 11 percent when ambient day light is available.
- Set interior lights on P1 and P2 to dim from 60 percent to 22 percent if no movement is detected.
- Reduce dwell (lights on) time after a sensor detects motion from 30 minutes to 30 seconds.



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### RESULTS

11% electrical energy reduction and happy occupants

The results from the installation of sensors and lighting level adjustments are consistent with the Vancouver Airport Authority's prediction. Continued optimization of the lighting controls showed further energy savings, estimated at eleven percent annually. These savings are illustrated by the graph to the right.

In addition to saving energy, changing light settings affects the occupants that use the parkade. The Vancouver Airport Authority spoke with employees that use the facility to confirm that they were comfortable with the change. Overall, employees were appreciative of the work completed to conserve energy and did not see an impact to their comfort or safety.

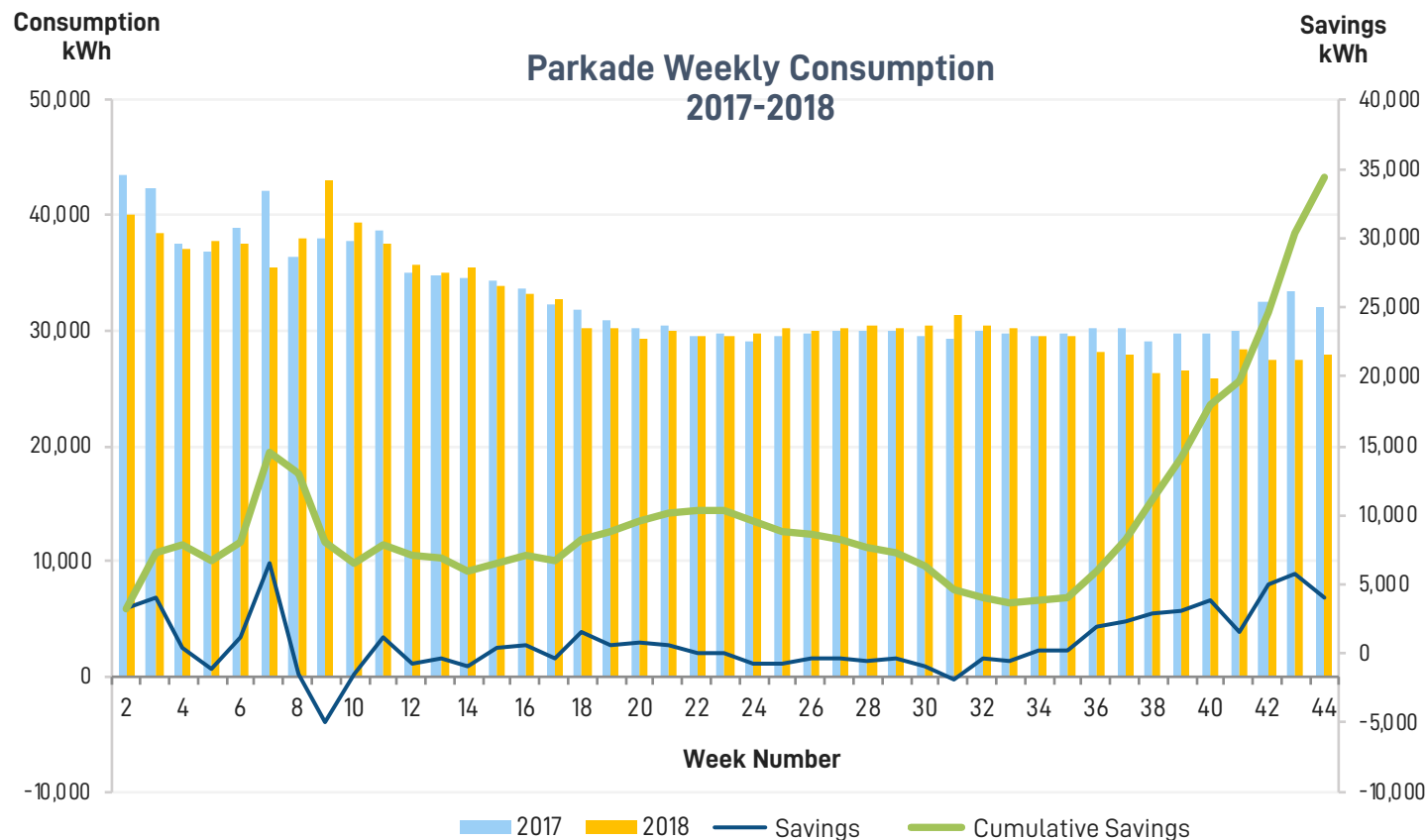


Figure 1: Parkade Weekly Electrical Consumption 2017 VS 2018 – the green bar shows increasing cumulative savings from week 36 onward