



2017

Real-World Fuel Consumption Report



# Test Groups



The eleven (11) models of pick-up trucks included in the this years challenge were tested under several conditions.

Two *mid-size* were tested empty and with a payload of 500 lbs in the bed

Four *half-ton* trucks were tested empty and with a payload of 1,000lbs in the bed

For towing, the *mid-size* trucks were tested with 2,000lbs while the *half-ton* trucks were tested towing 4,000lbs.

## 11 Pickup Truck Models

2 Mid-Size trucks

4 Half-Ton trucks

3 Three-Quarter-Ton size trucks

2 One-Ton trucks

Three *three-quarter-ton* trucks were tested empty, with a payload of 1,000lbs, and while towing 10,000lbs.

Two *one-ton* trucks were tested empty, with a payload of 4,000lbs, and while towing 15,000lbs.

The *half-ton* and *mid-size* trucks were also tested on a closed 4x4 course. While these trips are included in the trip manifest, they are not included in the overall averages.

A handwritten signature in black ink, appearing to read 'Alex Koch', positioned above a horizontal line.

Alex Koch  
Truck Measurement Verification  
akoch@fleetcarma.com

The measurement verification authority is responsible for assuring that all data captured is accurate and comparable between vehicles.

# Test Sequence

Routes (All but One-Ton Trucks):

- Empty Head Lake Loop
- Payload (500 – 4,000lbs) Head Lake Loop
- Trailing (4,000 – 10,000lbs) Head Lake Loop
- One-ton Truck Route – London Highway
- 4x4 Test Track



Routes (One-Ton)

- Empty (London – Norval via 401)
- Payload (4,000lbs, London – St. Thomas Loop)
- Trailing (15,000 lbs, London – Parkhill)

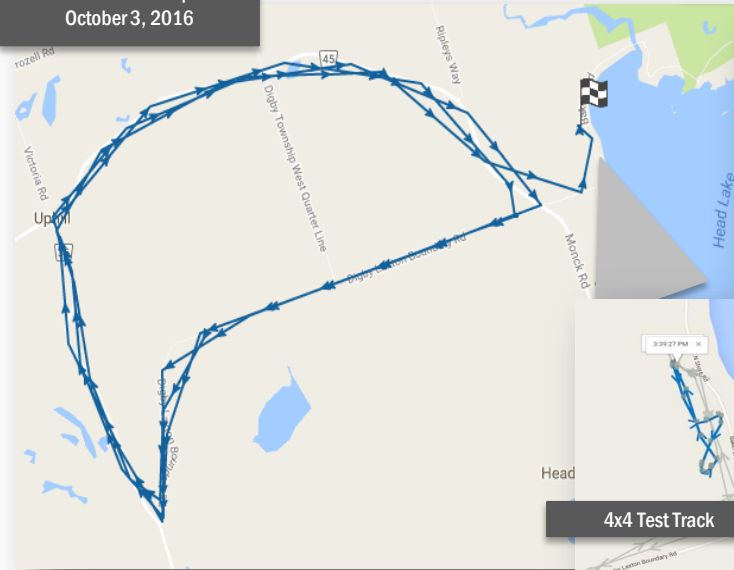


## Measurement Device

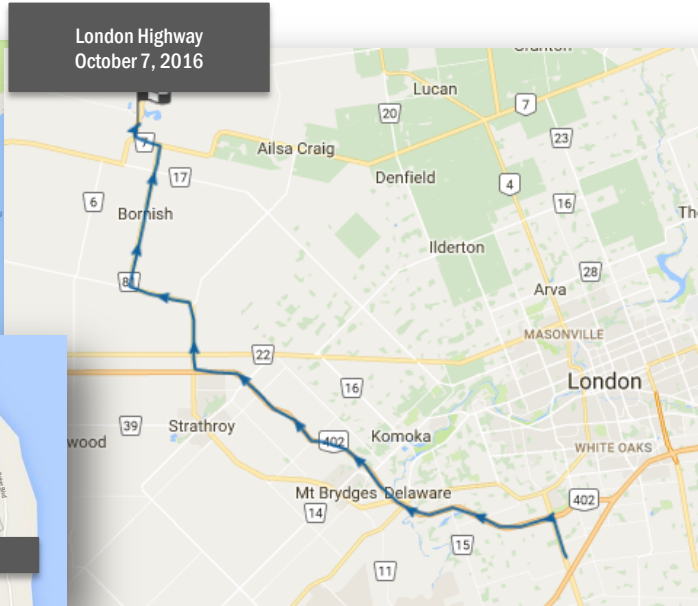
All vehicles were equipped with a FleetCarma C2 logger.

The system was set up with FleetCarma's advanced energy monitoring software. Data and GPS coordinates were streamed in real-time to FleetCarma's servers to enable remote monitoring during the event.

Head Lake Loop  
October 3, 2016



London Highway  
October 7, 2016



4x4 Test Track

# Mid-Size Truck Results



## Chevrolet

Colorado

## Honda

Ridgeline

Powertrain **Duramax 2.8L Diesel Turbo I4 181hp 369ft. lbs.** **3.5L V6 280hp 262ft. lbs.**

Empty Test Loops  
(Head Lake Loop)

**7.68**  
L/100km

**10.87**  
L/100km

Loaded with 500 lbs.  
(Head Lake Loop)

**7.53**  
L/100km

**10.85**  
L/100km

Trailerling 4,000 lbs.  
(Head Lake Loop)

**11.17**  
L/100km

**15.43**  
L/100km

Comparable  
Average\*

**8.32**  
L/100km

**11.81**  
L/100km

Mid-size trucks showed similar behaviour to the half-ton trucks when trailering on the same cycle, with increases of 42% for the Ridgeline and 45% for the Colorado.

The impact of the 500lb payload was small and within the amount of variation that can be attributed to small variations in drive cycle.

It's important to note that while the Colorado consumes less L/100km, the fuel used differs between the two vehicles. The Colorado uses diesel while the Ridgeline runs on regular gas. This also accounts for some of the fuel usage comparisons for the other sized trucks.

\* Comparable average removes trip segments that are not sufficiently similar between vehicles.

# Half-Ton Truck Results



## Nissan

Titan

## Ram

1500

## Chevrolet

2016 Silverado

## Toyota

Tundra

Engine type	5.6L V8 390hp 394 ft.-lbs.	HEMI 5.7L V8 395hp 410ft. lbs.	EcoTec3 5.3L V8 355hp 383ft. lbs.	5.7L V8 381hp 401ft. lbs.
Empty Test Loops (Head Lake Loop)	<b>16.24</b> L/100km	<b>13.38</b> L/100km	<b>14.46</b> L/100km	<b>14.64</b> L/100km
Loaded with 1,000 lbs. (Head Lake Loop)	<b>15.59</b> L/100km	<b>13.21</b> L/100km	<b>12.88</b> L/100km	<b>14.24</b> L/100km
Trailer 6,000 lbs. (Head Lake Loop)	<b>26.48</b> L/100km	<b>19.52</b> L/100km	<b>21.69</b> L/100km	<b>21.08</b> L/100km
Comparable Average*	<b>18.04</b> L/100km	<b>14.6</b> L/100km	<b>15.3</b> L/100km	<b>15.8</b> L/100km

Unexpectedly the 1,000lb payload numbers showed lower consumption than the unloaded cycles. Looking at the specific drive cycles the empty tests included higher driving speeds and more idling.

Idle time for the unloaded test averaged 54min and the idle time for the payload test averaged 50min.

Average driving (removing idling time) was approximately 66km/h for the unloaded test and 64km/h for the test with payload.

Accordingly the results should be interpreted as being operated on different drive cycles.

Trailer fuel consumption rose by 63% over an empty-load trip for the Nissan Titan. The other three models saw an increase of 44-50% while towing.

# Three-Quarter-Ton Truck Results



## Chevrolet

2016 Silverado 2500

## RAM

2500

## Nissan

Titan XD

Powertrain	Duramax 6.6L Diesel Turbo V8 397hp 765ft. lbs.	Cummins 6.7L Diesel Turbo I6 350hp 660ft. lbs.	Cummins 5.0L Diesel Turbo V8 310hp 555ft. lbs.
Empty Test Loops (Head Lake Loop)	<b>14.07</b> L/100km	<b>14.5</b> L/100km	<b>14.67</b> L/100km
Loaded with 1,000 lbs. (Head Lake Loop)	<b>14.2</b> L/100km	<b>15.6</b> L/100km	<b>14.88</b> L/100km
Trailer 10,000 lbs. (Head Lake Loop)	<b>20.0</b> L/100km	<b>21.11</b> L/100km	<b>20.18</b> L/100km
Comparable Average*	<b>16.09</b> L/100km	<b>17.13</b> L/100km	<b>16.52</b> L/100km

Three-quarter-ton trucks showed more consumption when trailering on the same cycle, with increases of 27-30% over their empty test loops.

The average speed was calculated by removing the time spent idling.

For all eleven vehicles, the average speed was reduced by several kilometers per hour while trailering.

All trucks are the 2017 model year unless otherwise specified in the tables. Specifically, the Silverado 1500 & 2500 trucks were the only 2016 models.

# One-Ton Truck Results



## Chevrolet

3500

## RAM

3500

When towing such a significant load, the 3500 series experienced a substantial increase in the consumption of fuel. The Chevrolet and Ram 3500s saw an increase of 92 and 93% respectively over their empty-load fuel efficiency.

Powertrain	Duramax 6.6L Diesel Turbo V8 397hp 765ft. lbs.	Cummins 6.7L Diesel Turbo I6 350hp 660ft. lbs.
Empty Test Loops (London-Woodstock- Norval via 401)	<b>12.45</b> L/100km	<b>15.45</b> L/100km
Loaded with 4,000 lbs. (London - St. Thomas Loop)	<b>14.92</b> L/100km	<b>17.32</b> L/100km
Trailer 15,000 lbs. (London-Parkhill)	<b>23.79</b> L/100km	<b>29.92</b> L/100km
Comparable Average*	<b>14.72</b> L/100km	<b>15.83</b> L/100km

## For more information

These results summarize the real-world energy consumption of the trucks and vans tested during the 2017 Canadian Truck King Challenge.



Howard J Elmer  
PowerSports Media Services  
10264 Old Pine Crest Road.  
C/O PO Box 274, Norval, Ontario, L0P 1K0  
905-702-0145  
powersports@explornet.com



Matt Stevens  
CrossChasm Technologies Inc. DBA FleetCarma  
2-60 Northland Road  
Waterloo, Ontario, N2V 2B8  
519-342-7385  
mstevens@fleetcarma.com

This work was supported by Natural Resources Canada



Natural Resources  
Canada

Ressources naturelles  
Canada