# Omstar Product Implementation Protocol

The following pages illustrate product performance through joint, transparent, and customer supported demonstrations between Omstar and its clients - proving the effectiveness of Omstar when used on a fleet of vehicles under normal operating conditions.

#### Phase 1 - Baseline

What: Establishment of fuel mileage and opacity (particulate matter) readings using the SAE J1667 standard with no Omstar in the engine's fuel or oil system.

How: By accurately and transparently measuring all fuel induced into the engine (monitored and recorded by Omstar representative and the client representative) at each fueling/each day.

Duration: Minimum of five (5) days and 500 operating miles to allow for a more accurate statistical representation.

Desired Control Features (as many as feasible without interfering with operations): Repeatable route of travel, similar times of day, similar loads if any, same driver if possible.

#### Phase 2 - Implementation

What: Establishment of fuel mileage and opacity (particulate matter) readings using the SAE J1667 standard with 5oz of Omstar/10 gallons of fuel in the engine's fuel tank and 1oz of Omstar/1qt of oil in the engine's oil system.

How: By accurately and transparently measuring all fuel induced into the engine (monitored and recorded by Omstar representative and the client representative) at each fueling/each day — along with adding the requisite amount of Omstar into the fuel to maintain the 5oz/10 fuel gallon ratio.

Duration: Minimum of five (5) days and 500 operating miles to allow for a more accurate statistical representation. This time allows the Omstar chemisorption process to begin to take effect.

Desired Control Features (as many as feasible without interfering with operations): Repeatable route of travel, similar times of day, similar loads if any, same driver if possible.

\*\*At the end of this phase, a change of oil and change of oil and fuel filters is required along with a re-introduction of Omstar into the oil system at the 1oz/1qt of oil rate\*\*

#### Phase 3 - Further Implementation

What: Establishment of fuel mileage and opacity (particulate matter) readings using the SAE J1667 standard with 3oz of Omstar/10 gallons of fuel in the engine's fuel tank and 1oz of Omstar/1qt of oil in the engine's oil system.

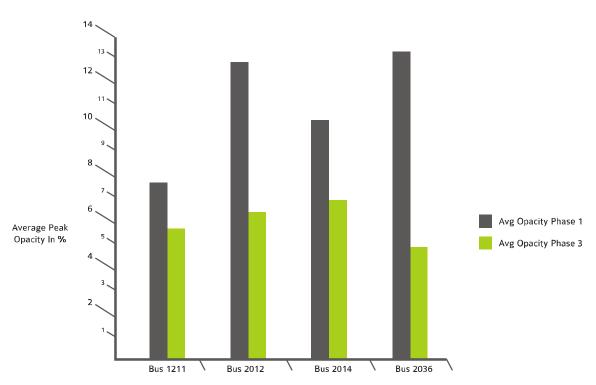
How: By accurately and transparently measuring all fuel induced into the engine (monitored and recorded by Omstar representative and the client representative) at each fueling/each day — along with adding the requisite amount of Omstar into the fuel to maintain the 3oz/10 fuel gallon ratio.

Duration: Minimum of five (5) days and 500 operating miles to allow for a more accurate statistical representation. This time allows the Omstar chemisorption to continue to progress.

Desired Control Features (as many as feasible without interfering with operations): Repeatable route of travel, similar times of day, similar loads if any, same driver if possible.

\*\*At the end of this phase, comparisons are made between Phase 3 averages and Phase 1 averages. These comparisons illustrate the economical and ecological benefits of using Omstar\*\*

#### Three-Phase Emissions Analysis Results



Opacity Reduction in Silver State Trailways Buses

# Silver State Trailways Emissions Results Breakdown:

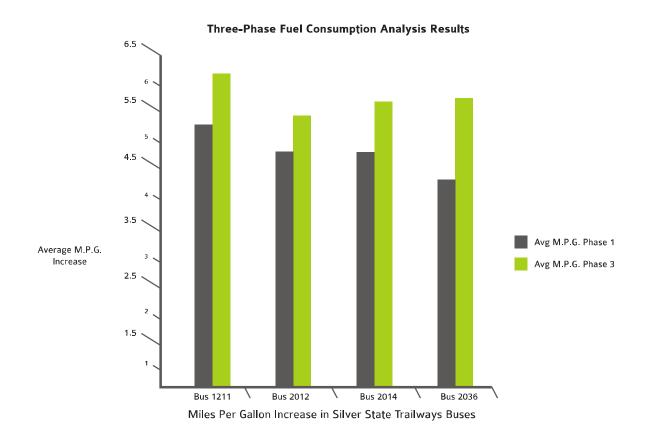
Average opacity decrease of **42.40**%<sup>1</sup>
Ending average vehicle smoke opacity of **6.027917**%
Carbon output reduction of **2,448,504** lbs of CO<sub>2</sub> per year<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> Range from 24.18 to 62.71%

 $<sup>^{2}</sup>$  Carbon output calculated at the rate of 1 gallon diesel = 21.94 lbs of CO $_{2}$  output.

# Silver State Trailways Results, Continued

Demonstration conducted in 2009 by Omstar Environmental Products



#### Silver State Trailways Fuel Results Breakdown:

Average M.P.G. increase of 22.32% Projected annual net savings of \$216,146.00<sup>3</sup>

#### **Projected Savings for Entire Silver State Trailways Fleet**

#### **Estimated Annual Fuel Consumption**

Estimated annual fuel gallons without Omstar d-1280x: 500,000g Average 22.32% savings with Omstar d-1280x: 111,600g Estimated annual fuel gallons using Omstar d-1280x: 388,400g

#### **Estimated Annual Cost of Omstar**

Estimated annual d-1280x usage in gallons: 303g Estimated annual cost:  $303 \times $115.00 = $34,854.00$ 

#### Estimated Annual Savings at fuel price of \$2.25

Estimated annual fuel cost without d-1280x:  $500,000 \times \$2.25 = \$1,125,000.00$ Estimated annual fuel cost with d-1280x:  $388,400 \times \$2.25 = \$873,900.00$ Estimated annual savings: **\$251,000.00** 

## Estimated Annual Net Savings at fuel price of \$2.25

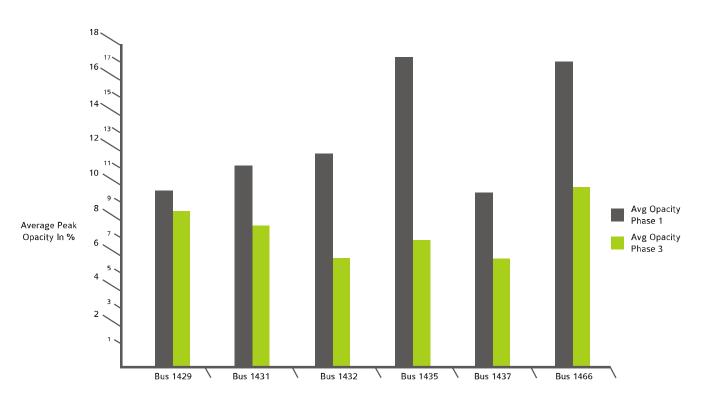
Estimated annual savings: \$251,100.00
Estimated annual Omstar cost: \$34,854.00
Estimated annual net savings: **\$216,146.00** 

<sup>&</sup>lt;sup>3</sup> Projected annual savings calculated at the rate of \$2.25 per gallon on fuel.

# Jamaica Urban Transit Company Results

Demonstration conducted in 2009, by Omstar Environmental Products.

#### Three-Phase Emissions Analysis Results



Opacity Reduction in Jamaica Urban Transit Company Buses

#### JUTC Emissions Results Breakdown:

Average opacity decrease of 41.02%

Ending average vehicle smoke opacity of 7.52%

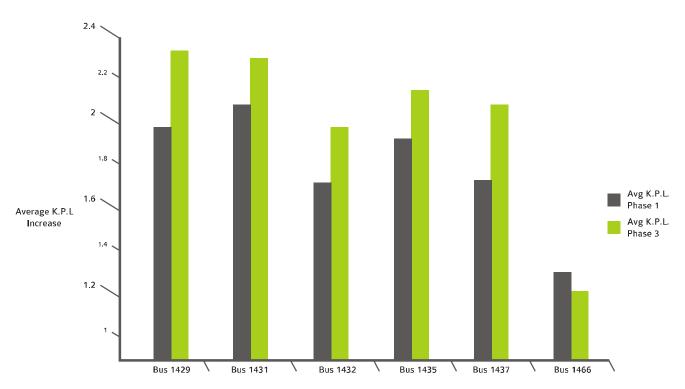
Carbon output reduction of 11,524,003 lbs of CO<sub>2</sub> per year<sup>4</sup>

 $<sup>^4</sup>$  Carbon output calculated at the rate of 1 liter diesel = 2.7 kg  $\mathrm{CO}_2$  output.

# Jamaica Urban Transit Company Results, Continued

Demonstration conducted in 2009, by Omstar Environmental Products.

#### Three-Phase Fuel Consumption Analysis Results



Kilometers Per Liter Increase in Jamaica Urban Transit Company Buses

#### JUTC Fuel Results Breakdown:

Average K.P.L. Increase of 12.10% Projected annual net savings of \$76,771,991.35 JMD<sup>5</sup>

#### **Projected Savings for Entire JUTC Fleet**

#### **Estimated Annual Fuel Consumption**

Estimated annual fuel liters without d-1280x:16,000,000L

Average 12.10% savings: 1,936,000L

Estimated annual fuel liters with d-1280x: 14,064,000L

#### **Estimated Annual Cost**

Estimated annual d-1280x gallons: 2902.59

Estimated annual cost of d-1280x:

2902.59 x US \$115 = US \$333,797.85 (JMD \$29,708 008.65)

#### Estimated Annual Savings: Fuel Price = JMD \$55

Estimated annual fuel cost without d-1280x: 16,000,000

16,000,000 x JMD \$55 = JMD \$880,000,000.00 (US \$9,887,640.45)

Estimated annual fuel cost with d-1280x: 14,064,000

 $14,064,000 \times JMD $55 = JMD $773,520,000.00 (US $8,691,235.96)$ 

Estimated annual savings: JMD \$106,480,000.00 (US \$1,196,404.49)

#### Estimated Annual Net Savings: Fuel Price = JMD \$55

Estimated annual savings: JMD \$106,480,000.00 (US \$1,196,404.49)
Estimated annual Omstar cost: JMD \$29,708,008.65 (US \$333,797.85)
Estimated annual net savings: JMD \$76,771,991.35 (US \$862,606.64)

# **Independent Study Results**

The following graphs illustrate a series of independent studies which have revealed significant benefits from using Omstar d-1280x.

## **Ecological Benefits**

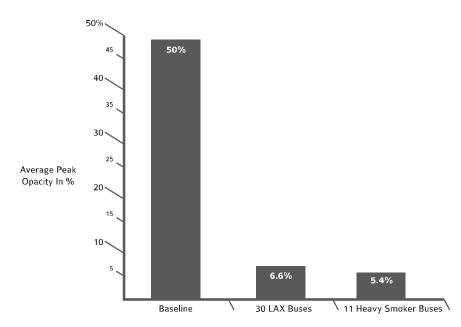
Eco-friendly, biodegradable formula.

Reduces emissions up to 89%.

Globally scalable - ecologically sustainable.

#### Four-Year Study Emissons Results

Conducted by Omstar Environmental Products for City of Los Angeles Dept. of Airports



Opacity Reduction in LAX Buses

## LAX Results Breakdown:

Average opacity decrease of 86%

Ending average vehicle opacity of 6.6%

Average opacity decrease of 89% in heavy smoker buses

Ending average vehicle smoke opacity of 5.4%

#### **Economic Benefits**

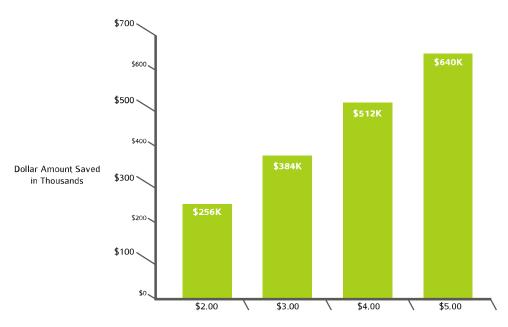
Reduced maintenance costs.

Increased engine life to the vehicles in your fleet.

Omstar Fuel Reformulators become an ROI, not an extra expense.

#### Omstar d-1280x Savings Projection

Tested at California Environmental Engineering Anaheim, CA All Values Based on a Fuel Consumption of 1 Million Gallons



Fuel Prices in Dollars Per Gallon

## Savings Projection Results Breakdown:

A price of \$2.00 per gallon yields a savings of \$256k per million gallons. A price of \$3.00 per gallon yields a savings of \$384k per million gallons. A price of \$4.00 per gallon yields a savings of \$512k per million gallons. A price of \$5.00 per gallon yields a savings of \$640k per million gallons.

#### **Effective Benefits**

Increases M.P.G. an average of 8-12%

Cleans the engine (injectors, combustion chambers, etc).

Cetane boost of 2 points and higher.

Makes engines run smoother (reduces engine vibration & noise).

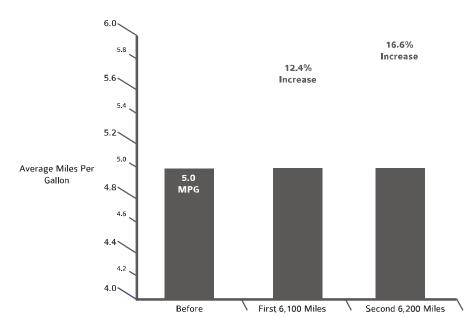
Octane boost of 0.7 points and higher.

Reduces Engine Heat an Average of 46%, lubricates engine & seals.

Increases horse power and performance.

#### Increase in Miles Per Gallon

Fuel consumption analysis conducted by Omstar Environmental Products using a Kenworth/Cummins ISX 435 Model Engine



Engine Model: Kenworth/Cummins ISX 435

## Results Breakdown:

Average M.P.G. increase of 12.4% in the first 6100 miles.

Average M.P.G. increase of 16.6% in the second 6200 miles.