

integer

insight  
beyond  
numbers

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**Diesel Exhaust Fluid Forum**  
**SCR Stakeholder meeting**  
**Cummins Inc. presentation overleaf**  
**Wednesday, 12 November**

For more information on the Diesel Exhaust Fluid Forum please contact  
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# DEF Infrastructure for Medium Duty and Vocational





## Medium-Duty

- Cooled EGR + Urea-SCR + DPF



## What's the same as heavy duty

- DEF concentration - 32.5%
- DEF package sizes to choose from
  - 1, 2.5, 5 gallon jugs, 55 gallon drums, totes, bulk
- Shelf life - typically 1 year if stored between 12 and 77 deg F
- Freeze point – 12 deg F



## What's different from Heavy Duty

- Many domiciled fleets
- Some seasonal use considerations
  - e.g. school bus
- Total volume used per vehicle will be less based on engine size and duty cycle
- Many utilize local Gas Stations (not highway Truck Stops)



# How Can I Determine how Much DEF I will Use?

## Example...

**Annual miles for average truck = 120,000 miles**

**MPG for average truck = 6 mpg**

**120,000 miles / 6 mpg = 20,000 gallons diesel fuel per year**

**DEF usage @ 2% of fuel consumption = 400 gallons of DEF / year**

**400 gallons / 20 gallon tank (average size) = 20 DEF fill-ups / year**



# How Can I Determine how Much DEF I will Use?

## Example...

**Annual miles for average vocational vehicle = 25,000 miles**

**MPG for average vehicle = 7 mpg**

**25,000 miles / 7 mpg = 3571 gallons diesel fuel per year**

**DEF usage @ 2% of fuel consumption = 71 gallons of DEF / year**

**71 gallons / 10 gallon tank (average size) = 7 DEF fill-ups / year**



## Diesel Exhaust Fluid (DEF) How Much Will I Use?

- Approximately 2% DEF consumption

**Every 50 gallons of fuel  
=  
1 gallon of DEF**





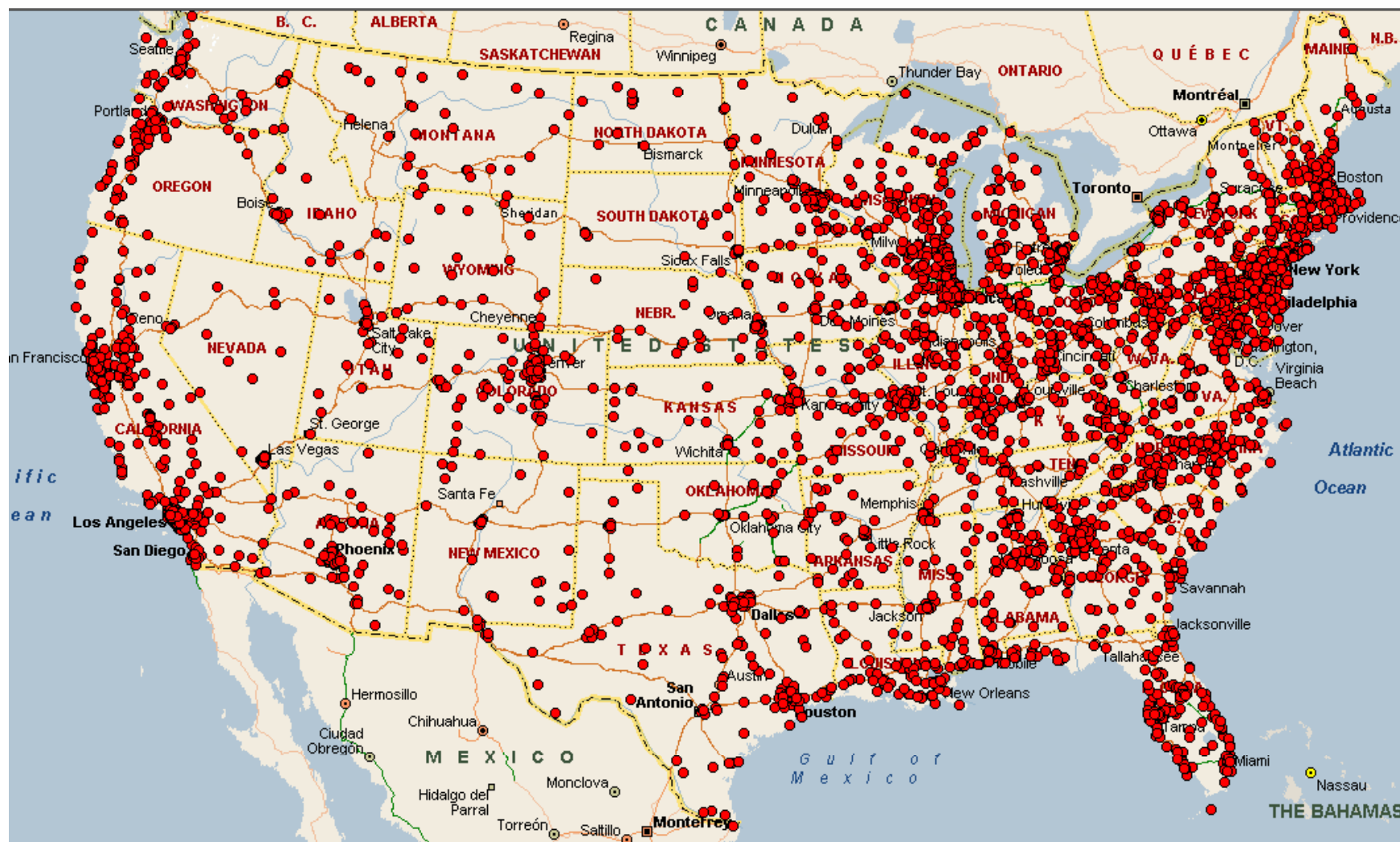


## Supply Options for Medium Duty / Vocational

- On sight supply
  - Drums or totes with dispensing pumps
  - Metered or un-metered
  - Physical space claim
  - Temperature control ?
- Retail access
  - Fueling stations
  - Distributor and dealers
  - Independent retailers

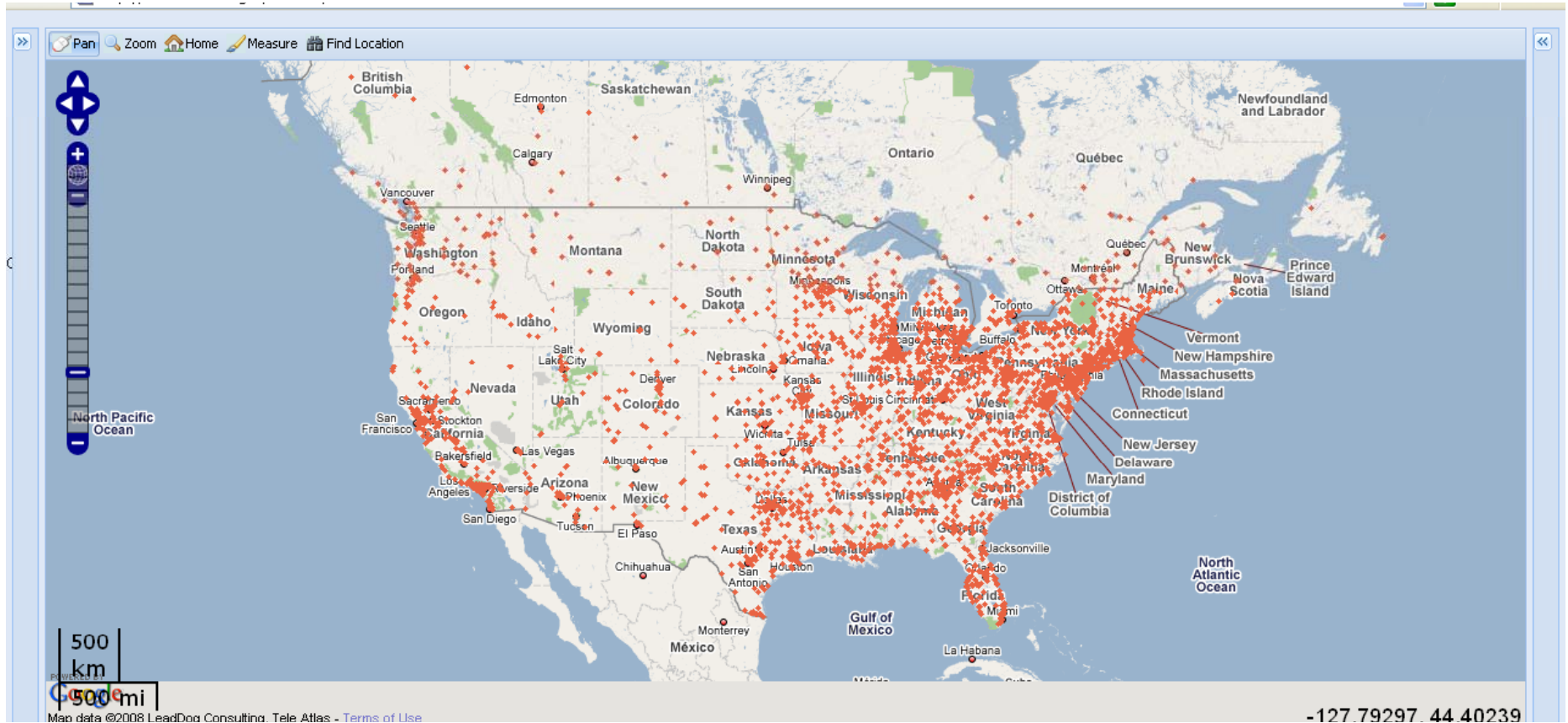


# Cummins Distribution and Secondary Distribution Outlets





# Online tool being developed by DOE to help you locate DEF





## Product Packaging – Example

- Currently available Cummins Filtration products  
Cummins Filtration
  - 330 gallon tote
  - 275 gallon tote
  - 55 gallon drum
  - Bulk
  
- Releasing smaller packaged containers
  - 1 gallon
  - 2.5 gallon
  - 5 gallon
  - All will have spouts designed to dispense directly into the DEF fill tanks on equipment
  
- Also releasing dispensing equipment suitable for use with drums, totes and intermediate bulk systems





## DEF Infrastructure Summary

- **DEF will be available for medium duty and vocational customers to purchase.**
  - **Cummins and other OEM's are working with industry partners to ensure DEF availability through retail channels.**
  - **Cummins and other OEMs are working to ensure availability of DEF through our distributor and dealer networks.**

A photograph of two hands shaking, symbolizing agreement or partnership. The image is heavily tinted with a red color. The background shows a landscape with mountains and a road. The text is overlaid on the image in white.

Count on Cummins

We Will Be Ready For 2010