

AQMD Near Roadway Study

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CLEAN FUELS PROGRAM ADVISORY GROUP RETREAT

SEPTEMBER 3, 2009

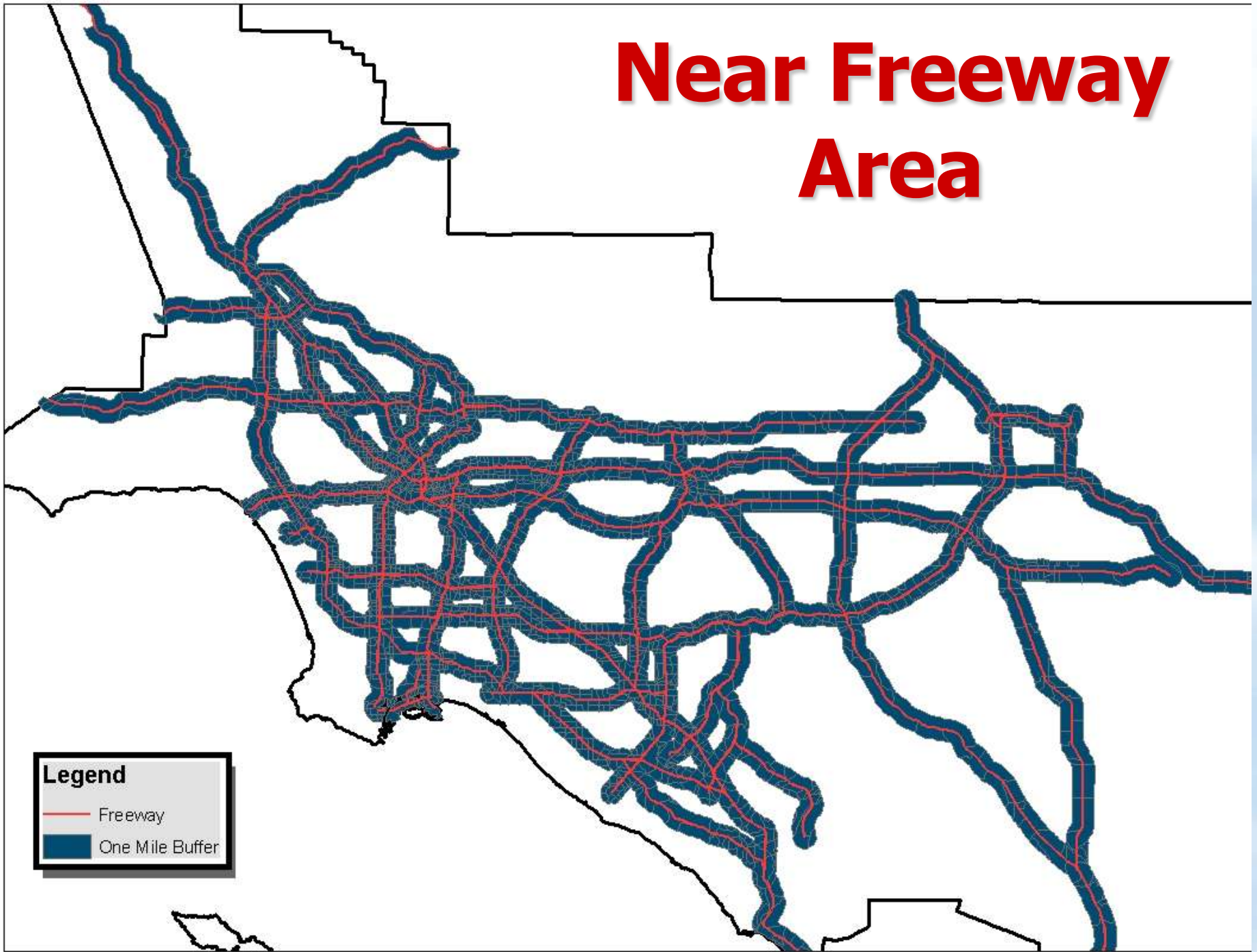
New Residential Development - Highway 91



Hudson Elementary – West Long Beach



Near Freeway Area

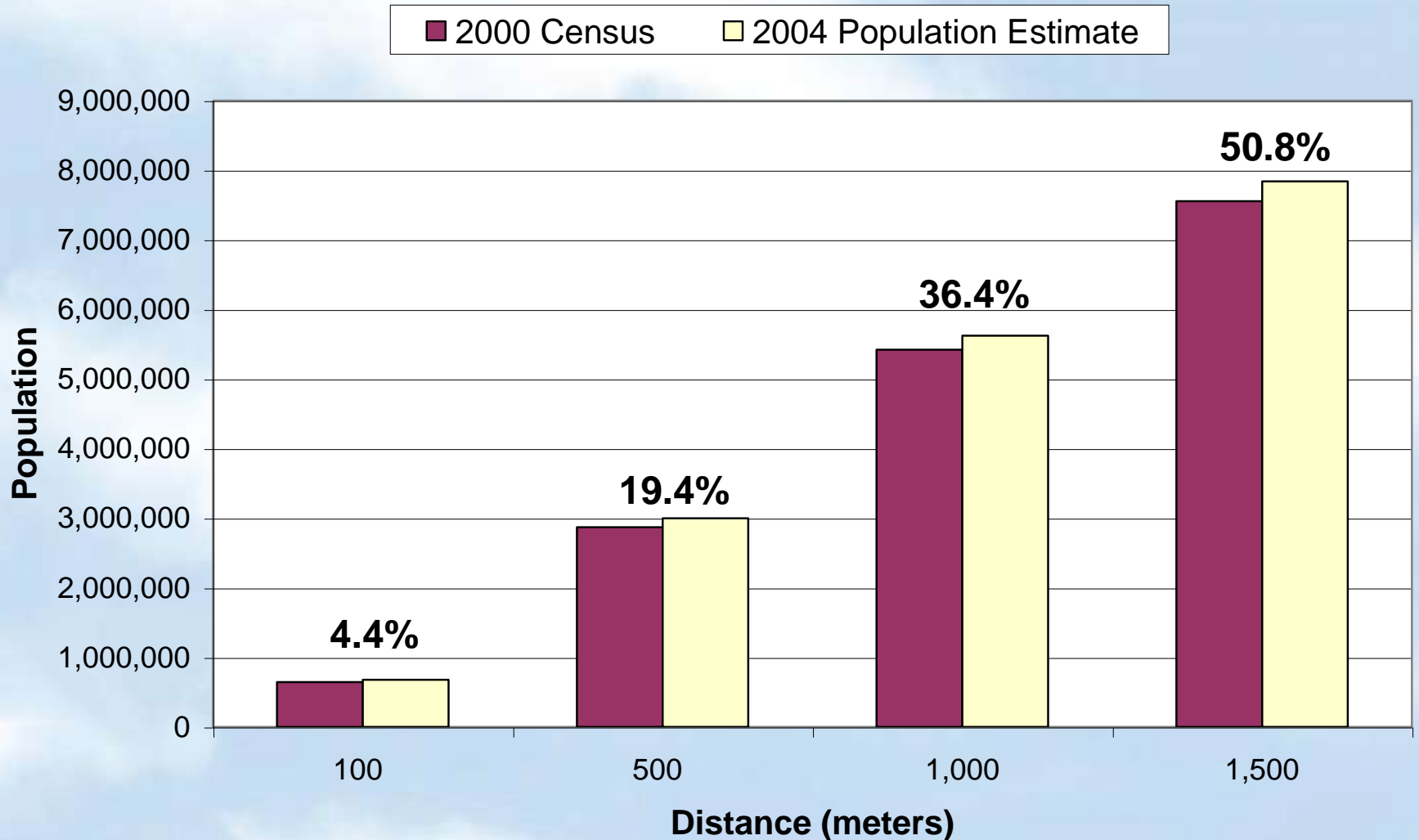


Legend

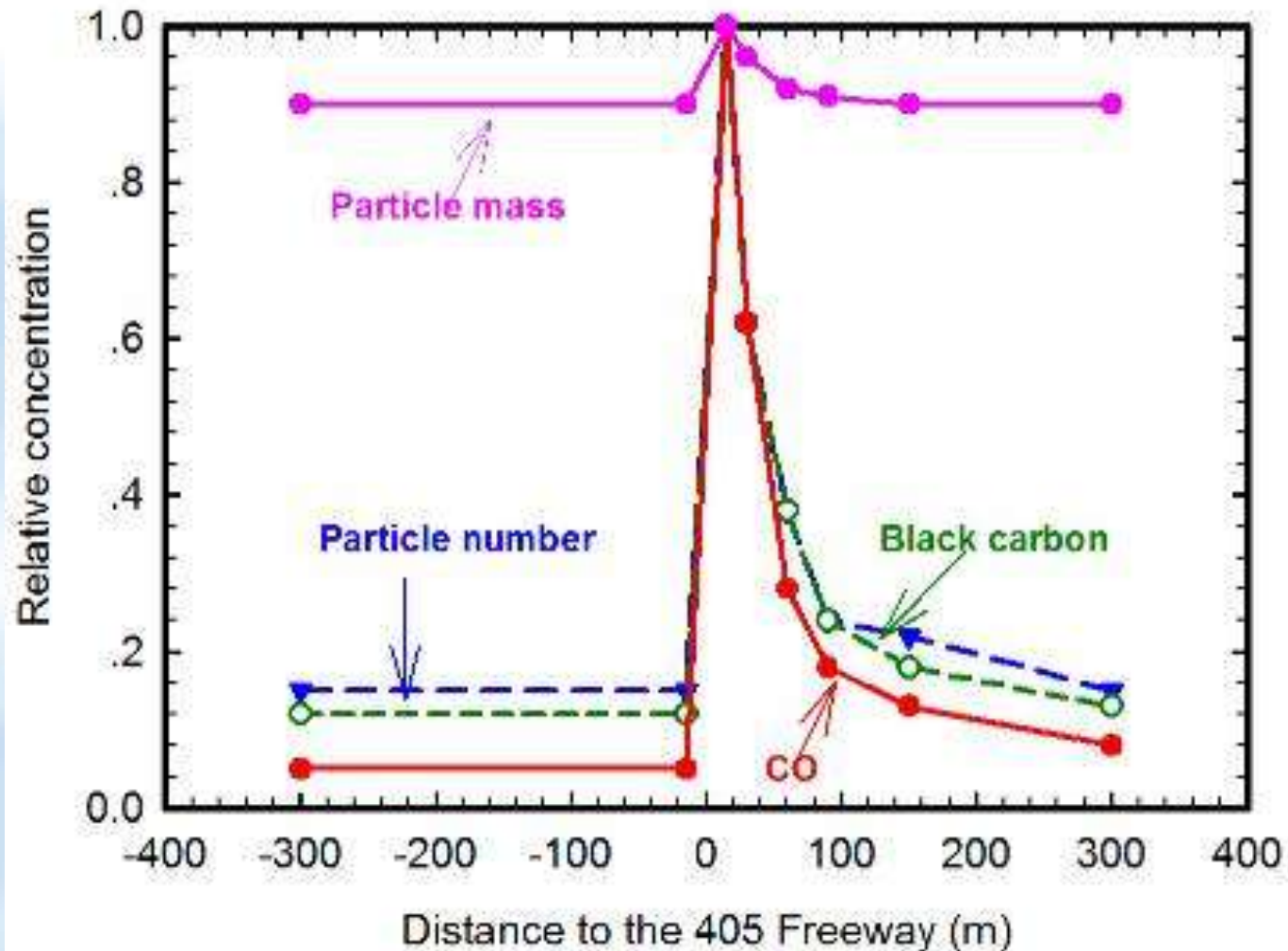
- Freeway
- One Mile Buffer

Population Estimate Living Near Freeways in SCAB

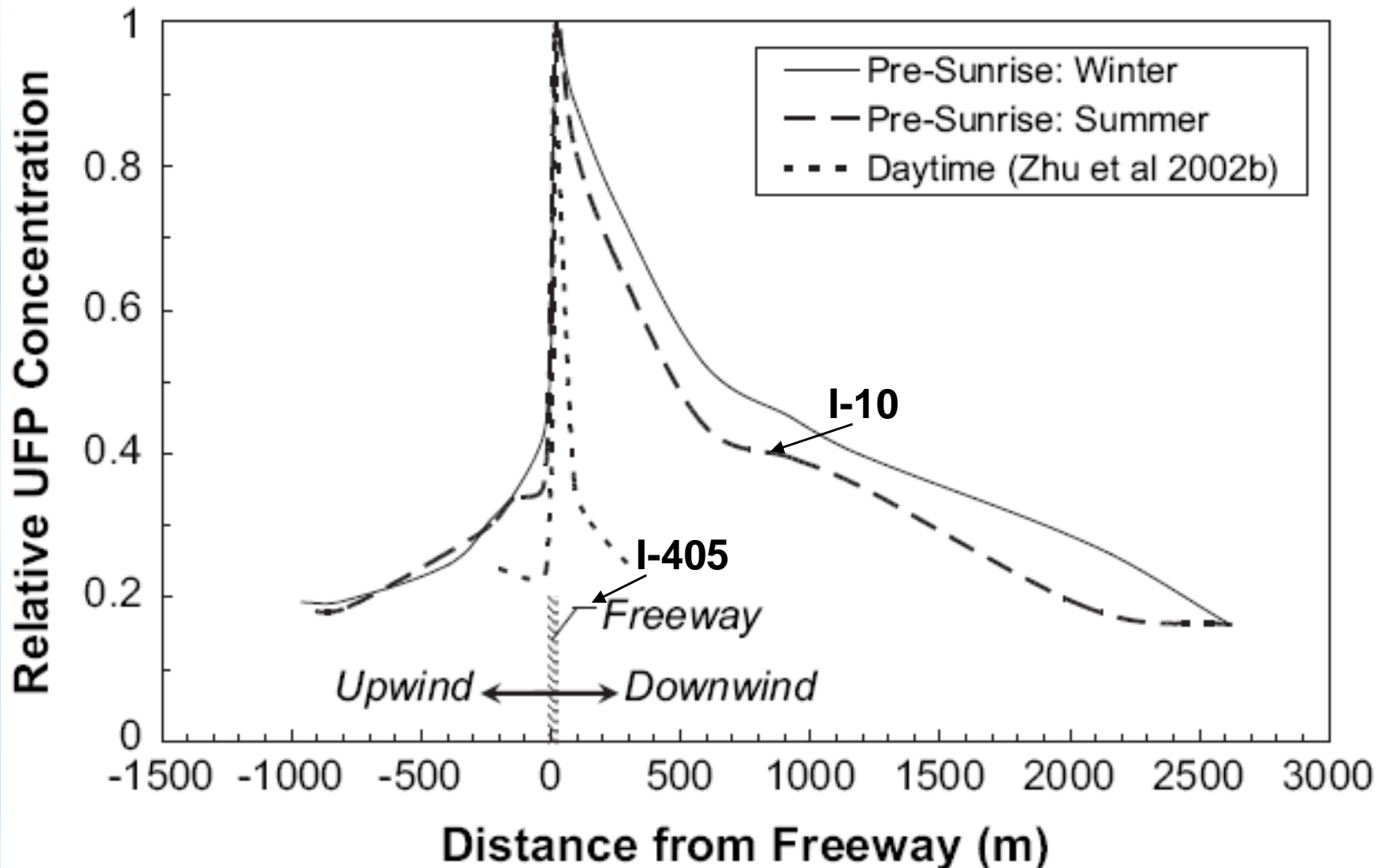
Populaton living near Freeways in SCAB



Previous Near Roadway Monitoring Studies



Meteorology Affects Fall-off



Summary

- Traditional monitoring away from roadways
- Increased health risks near roadway
- Steep fall-off (ultrafines, black carbon, etc.) with distance
- New regulatory focus on near roadway exposure
 - Criteria pollutants (NO₂)
 - Air toxics/ultrafines/diesel PM
 - Development Projects/CEQA
- Potential mitigation measures

AQMD Near Freeway Study

- Two month-long intensives
 - Feb/Mar 2009
 - Jul/Aug 2009
- I-710 - three sites
 - Nearest downwind of freeway(15 meters)
 - Further downwind of freeway (80 meters)
 - Upwind/background
- Measurements
 - Continuous particle number, black carbon, PM2.5 mass, NOX, CO, wind speed, wind direction, temperature and RH
 - PM10 mass and organic/elemental carbon, 24-hour samples, 1-in-2 day
 - PM2.5 mass, 24-hour FRM samples, daily
 - TSP Lead, 24-hour samples, 1-in-2 day
 - VOC Air Toxics, 4 samples per day (5AM-9AM, 9AM-3PM, 3PM-7PM, 7PM-5AM), 1-in-2 day

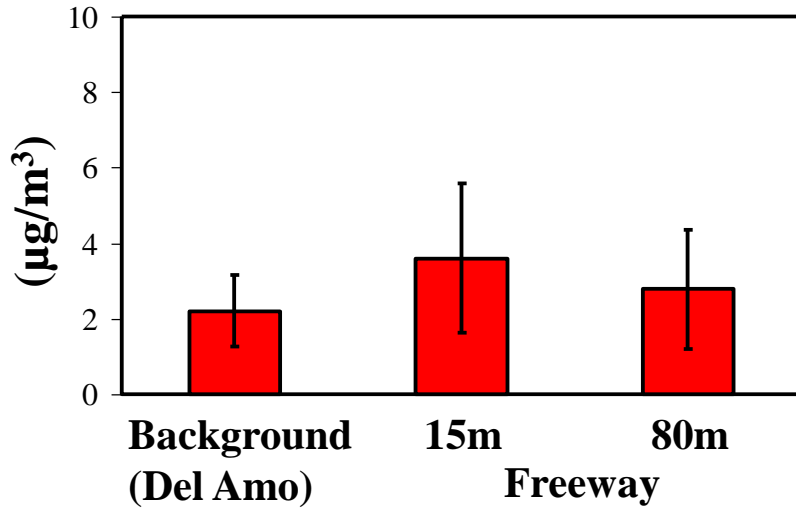
I-710 Sampling Locations



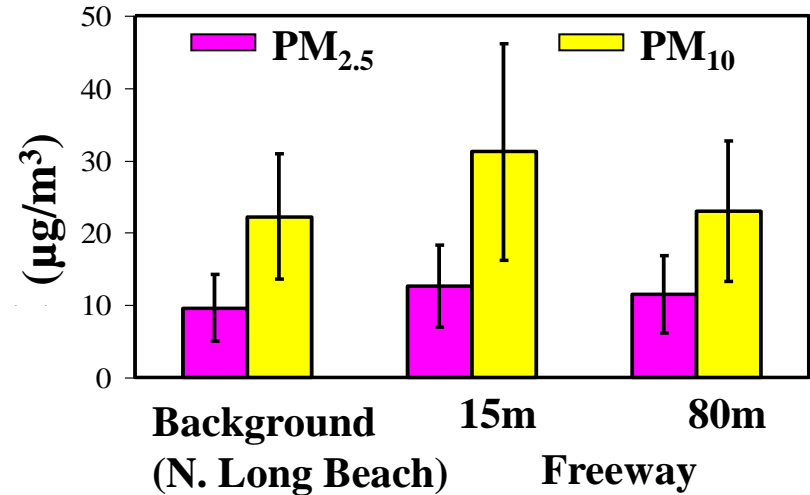
Preliminary I-710 Results

WINTER

PM10 Elemental Carbon

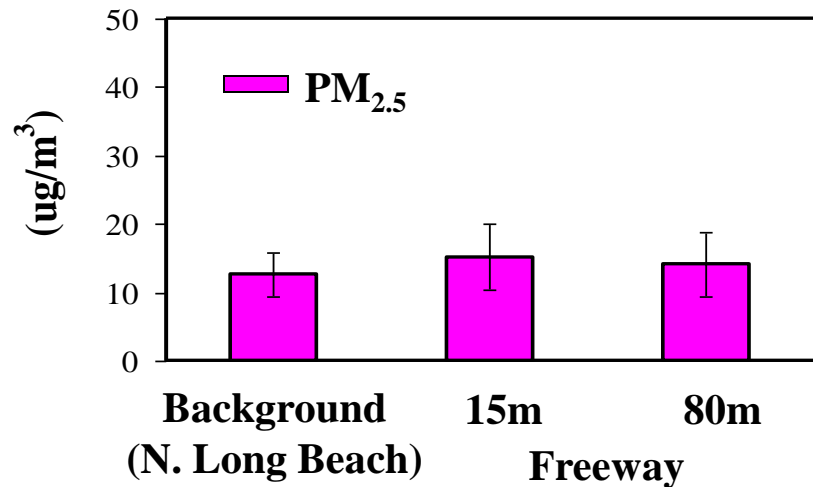


PM Mass



SUMMER

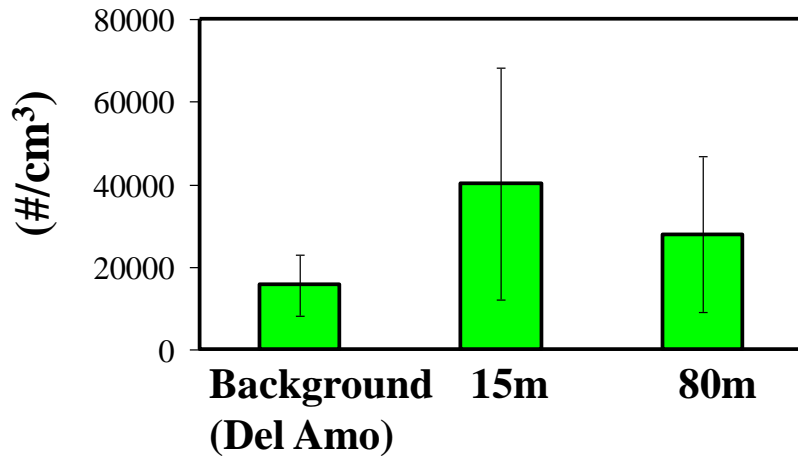
Filter-Based 24-Hour Results



Preliminary I-710 Results - Winter

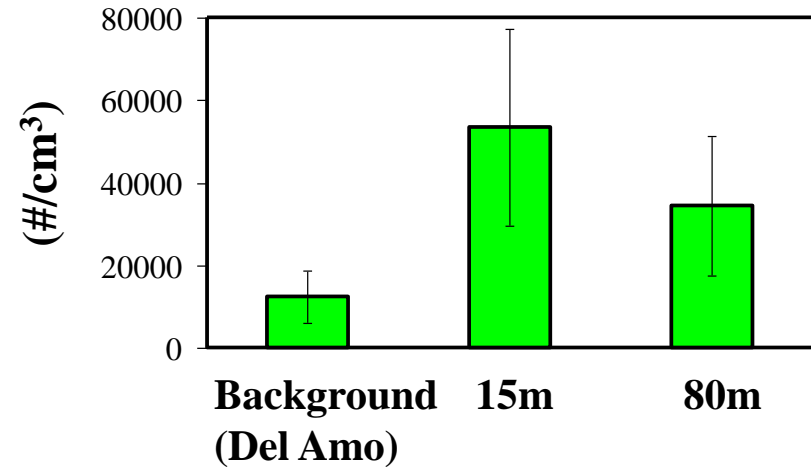
All Data

Ultrafine Number

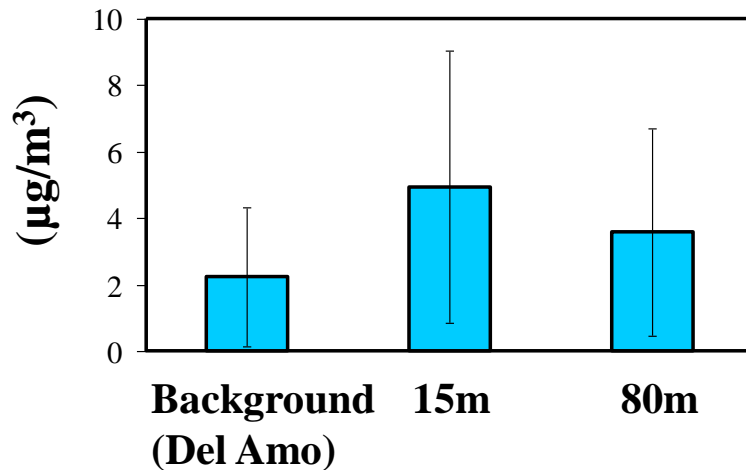


250° < WD < 290°

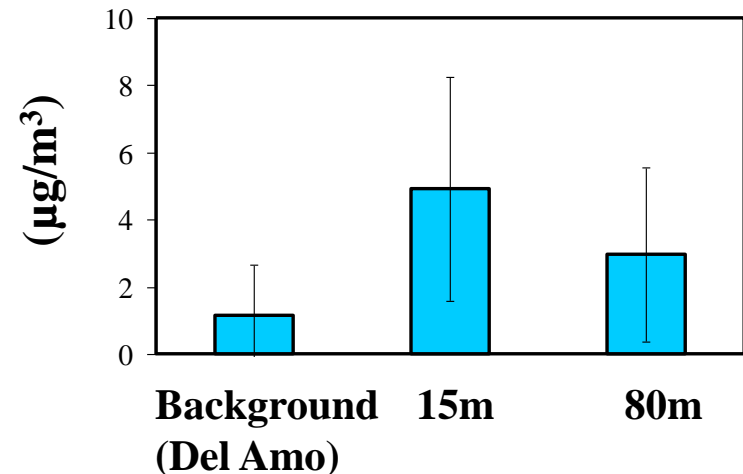
Ultrafine Number



PM_{2.5} Black Carbon



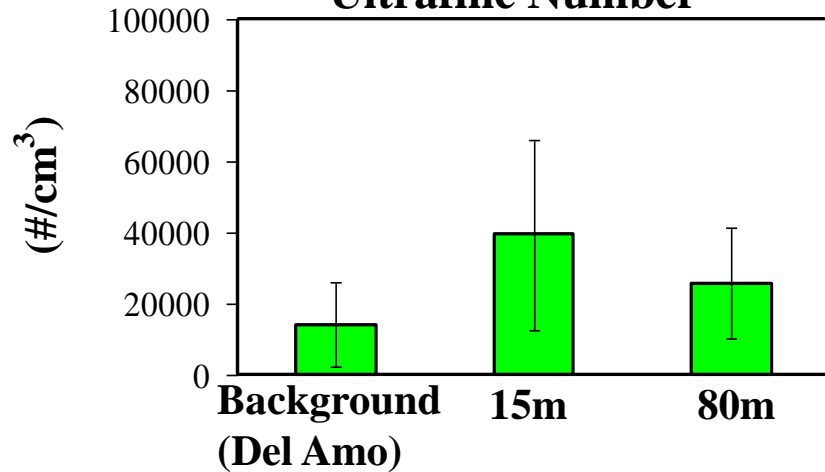
PM_{2.5} Black Carbon



Preliminary I-710 Results - Summer

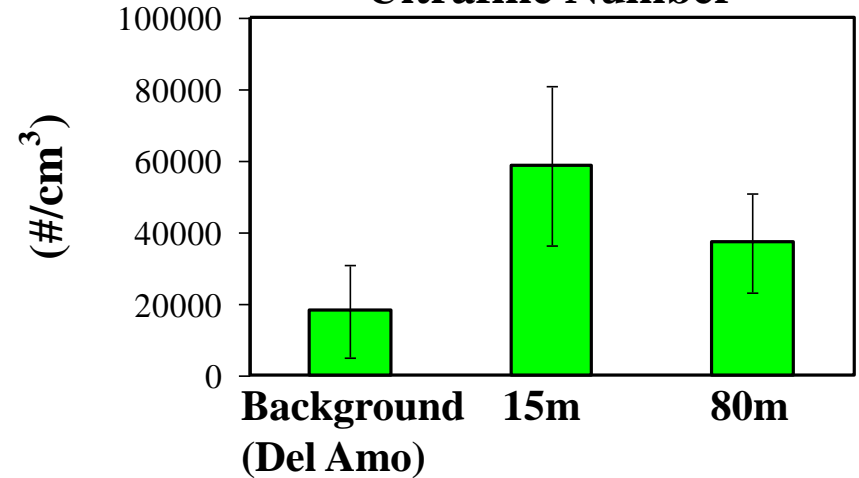
All Data

Ultrafine Number

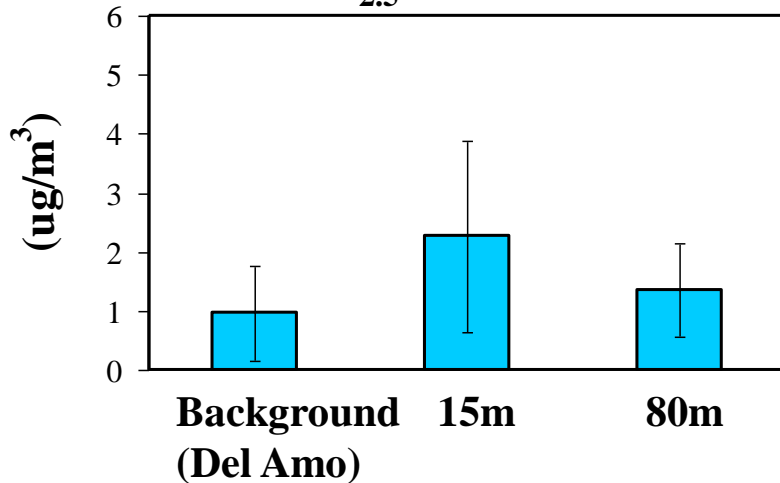


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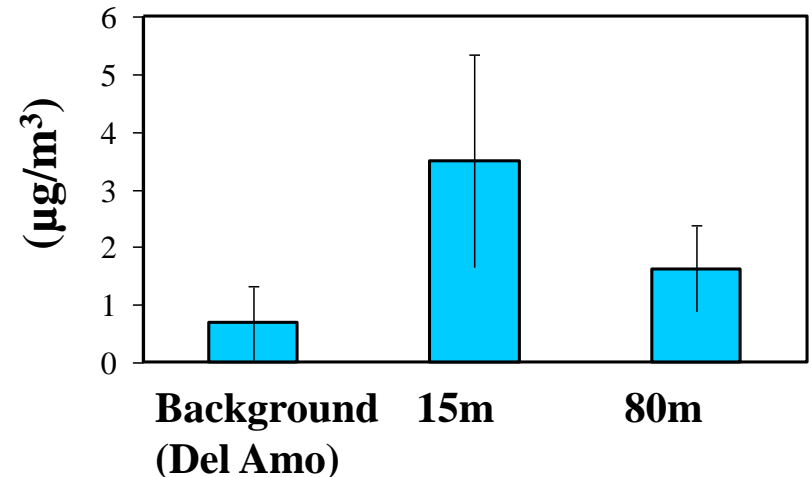
Ultrafine Number



PM_{2.5} Black Carbon

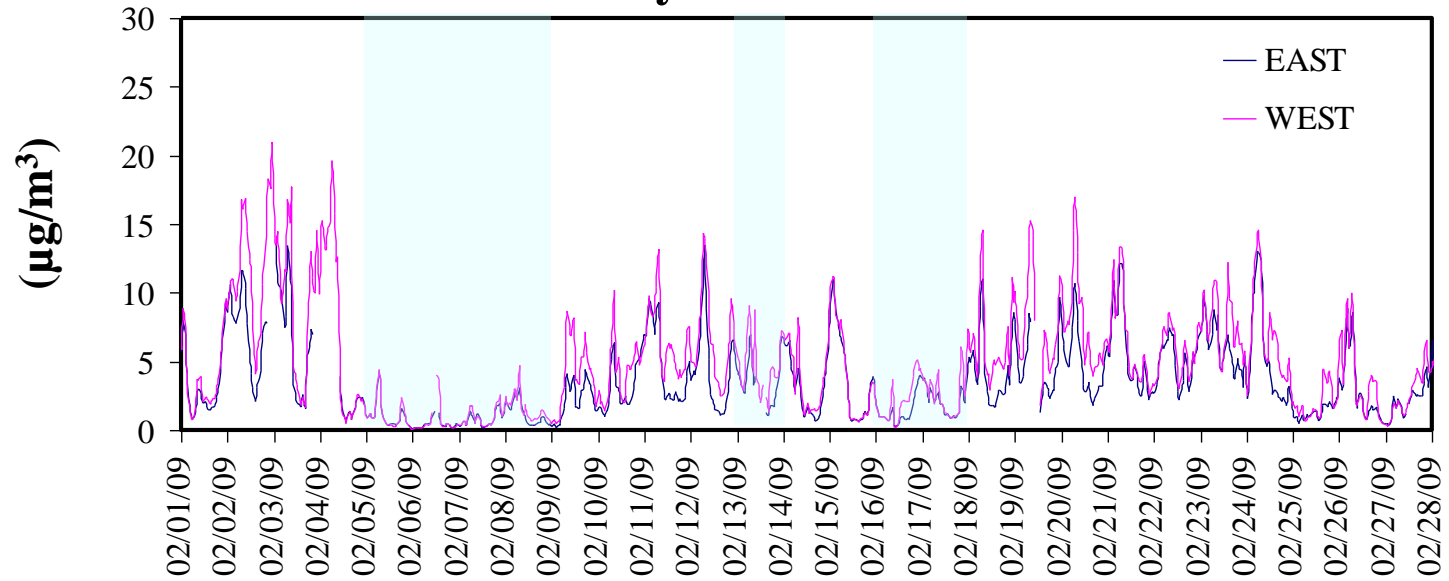


PM_{2.5} Black Carbon

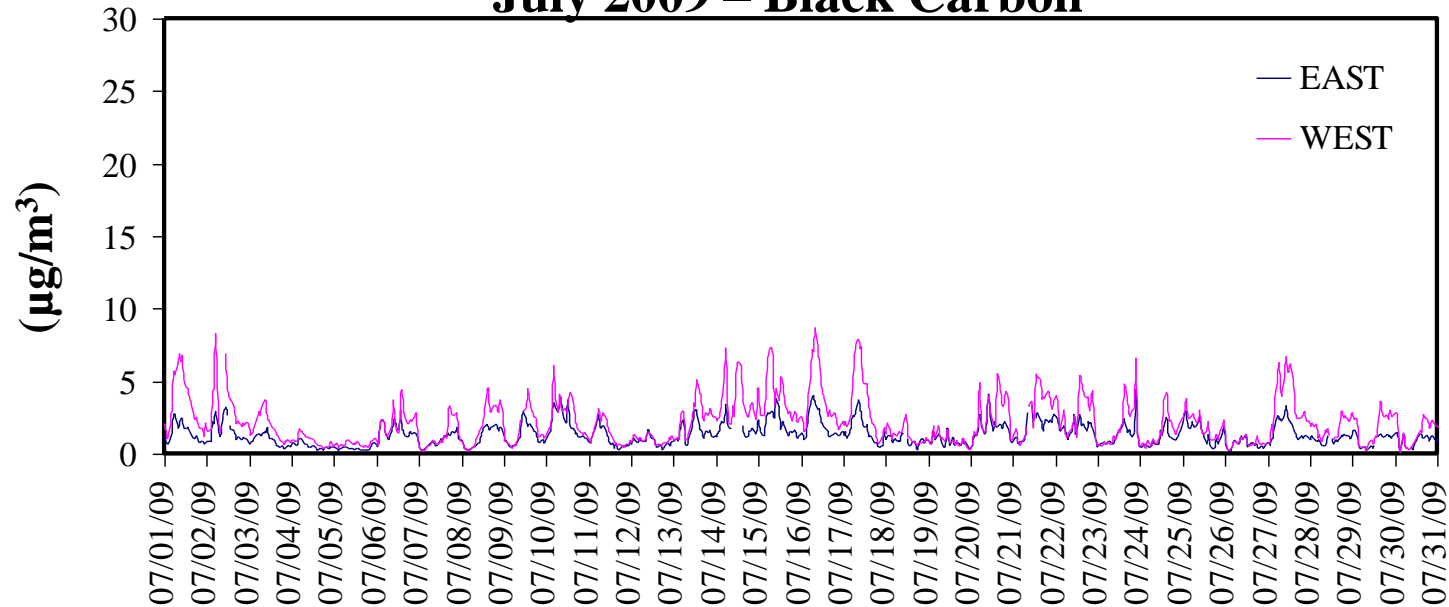


Preliminary I-710 Results

February 2009 – Black Carbon



July 2009 – Black Carbon



Indoor Filter Effectiveness

Black Carbon Removal Efficiency at Del Amo Elementary

