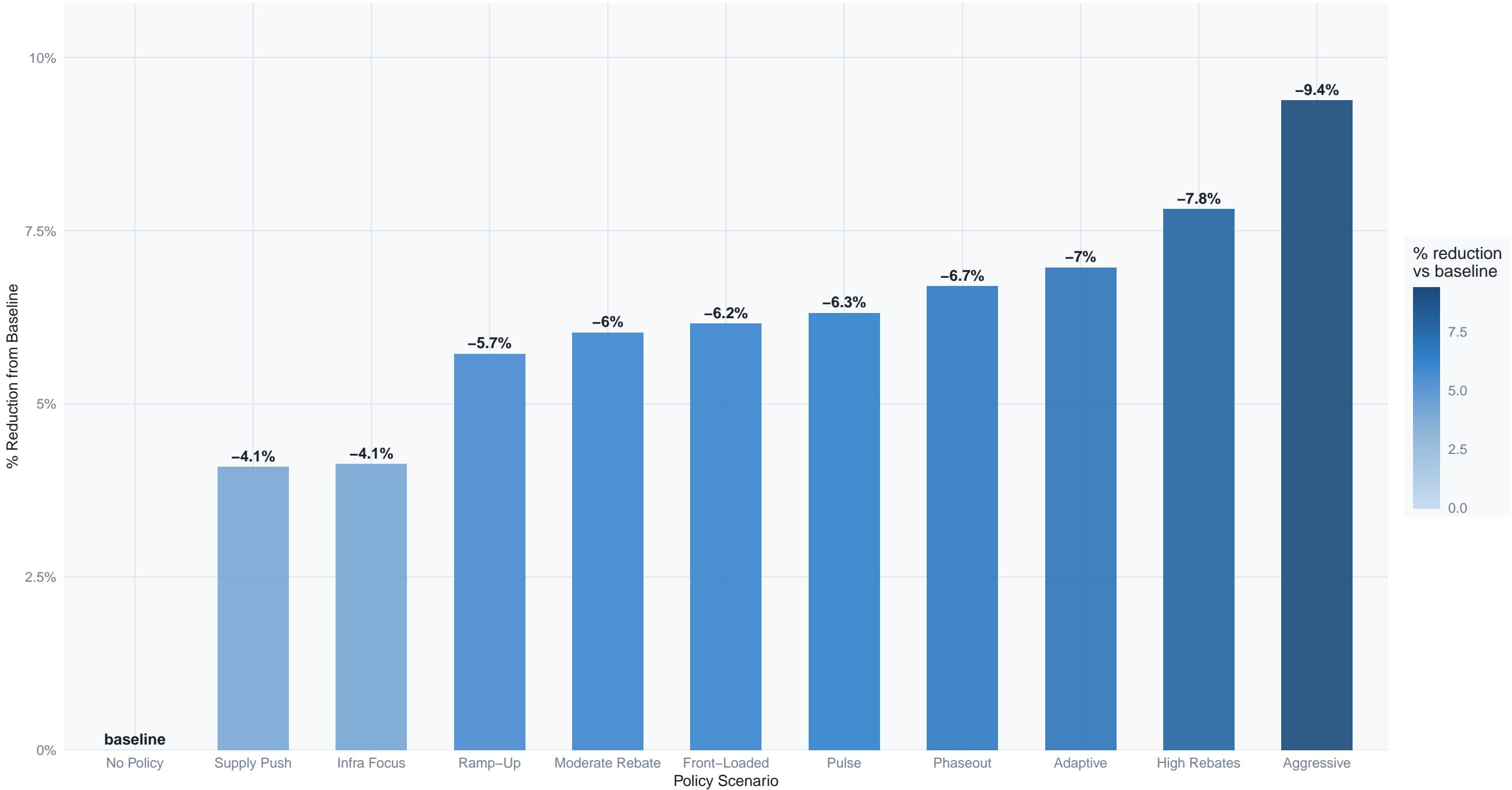


# **PM2.5 AV Scenarios – Year 20**

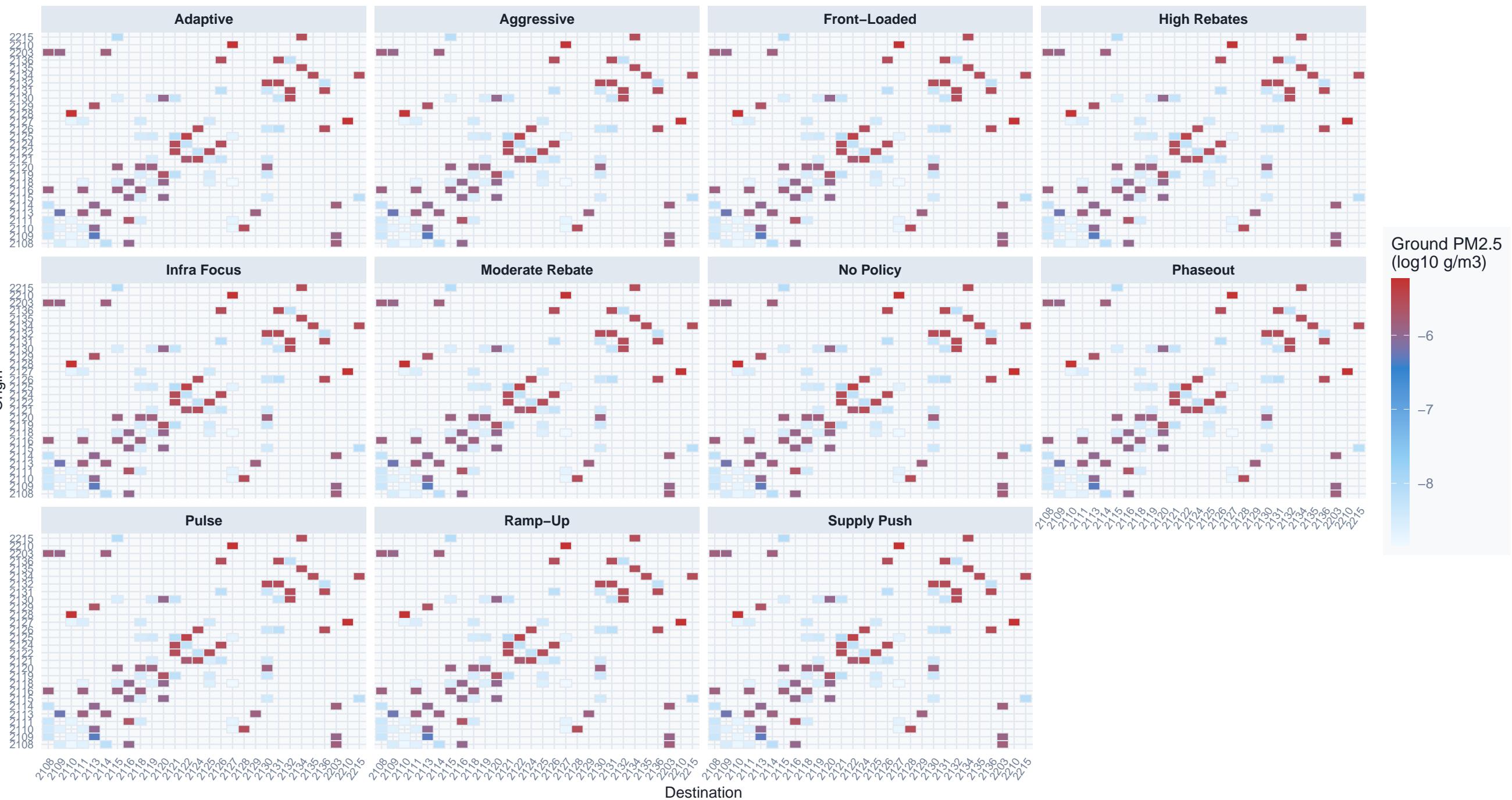
# Total Network Emission Rate by Policy Scenario

Sum of E\_eff across all active flow corridors; % reduction vs baseline scenario



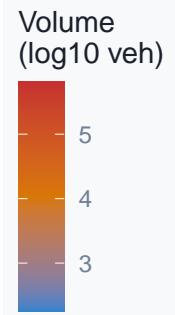
## Ground-Level Peak PM2.5 by Flow Pair

Each cell = one origin–destination corridor, color = peak ground concentration



# PM2.5 Reduction by Corridor vs Baseline

Each point = one flow pair; x = distance, y = % reduction in ground-level PM2.5



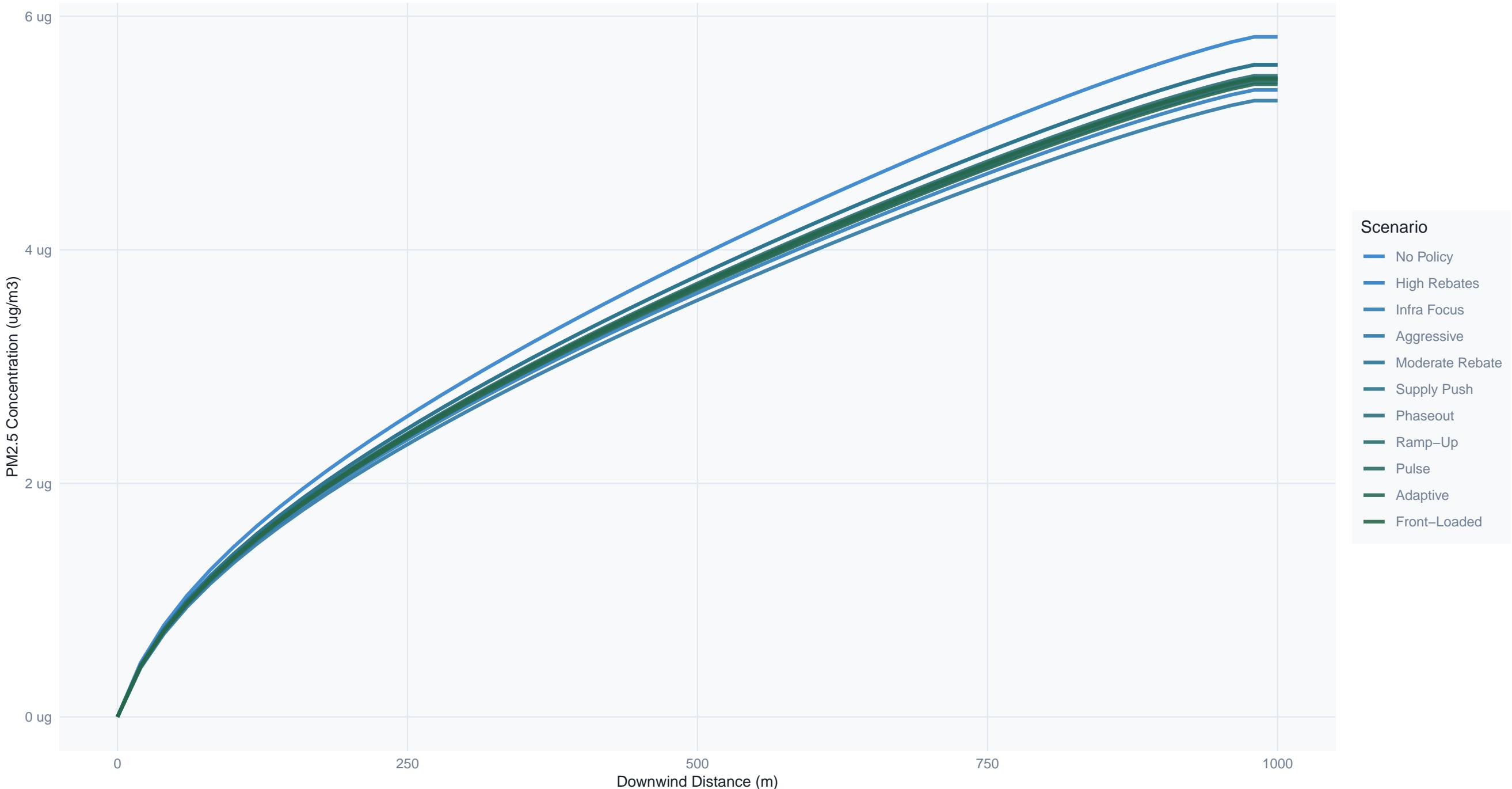
# PM2.5 Plume – Busiest Corridor (2127 – 2210)

659,690 vehicles/month, 1.4 km



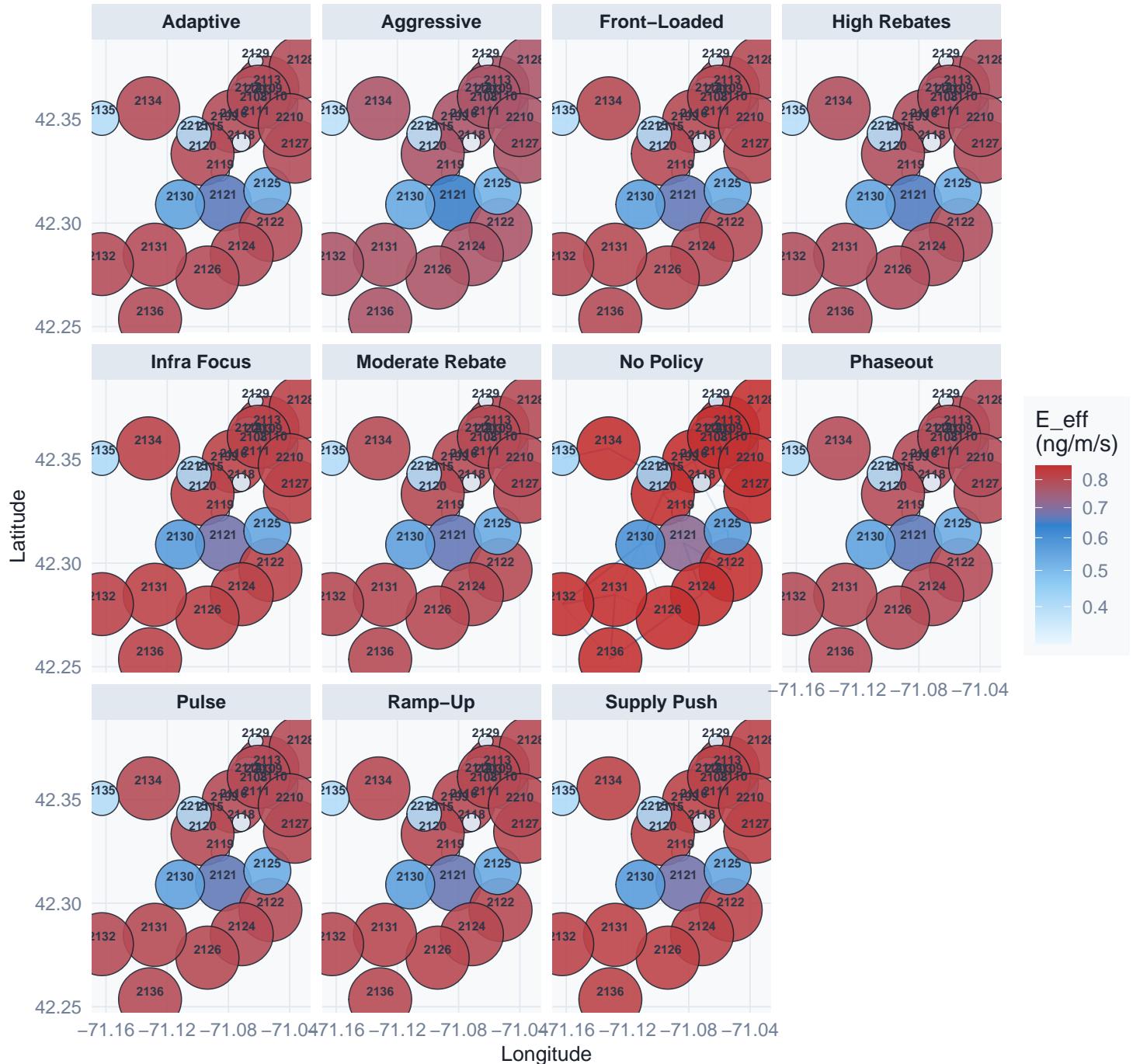
# Ground-Level PM2.5 Profile – 2127 – 2210

Concentration along downwind axis at  $z = 0$  (street level), converted to  $\mu\text{g}/\text{m}^3$



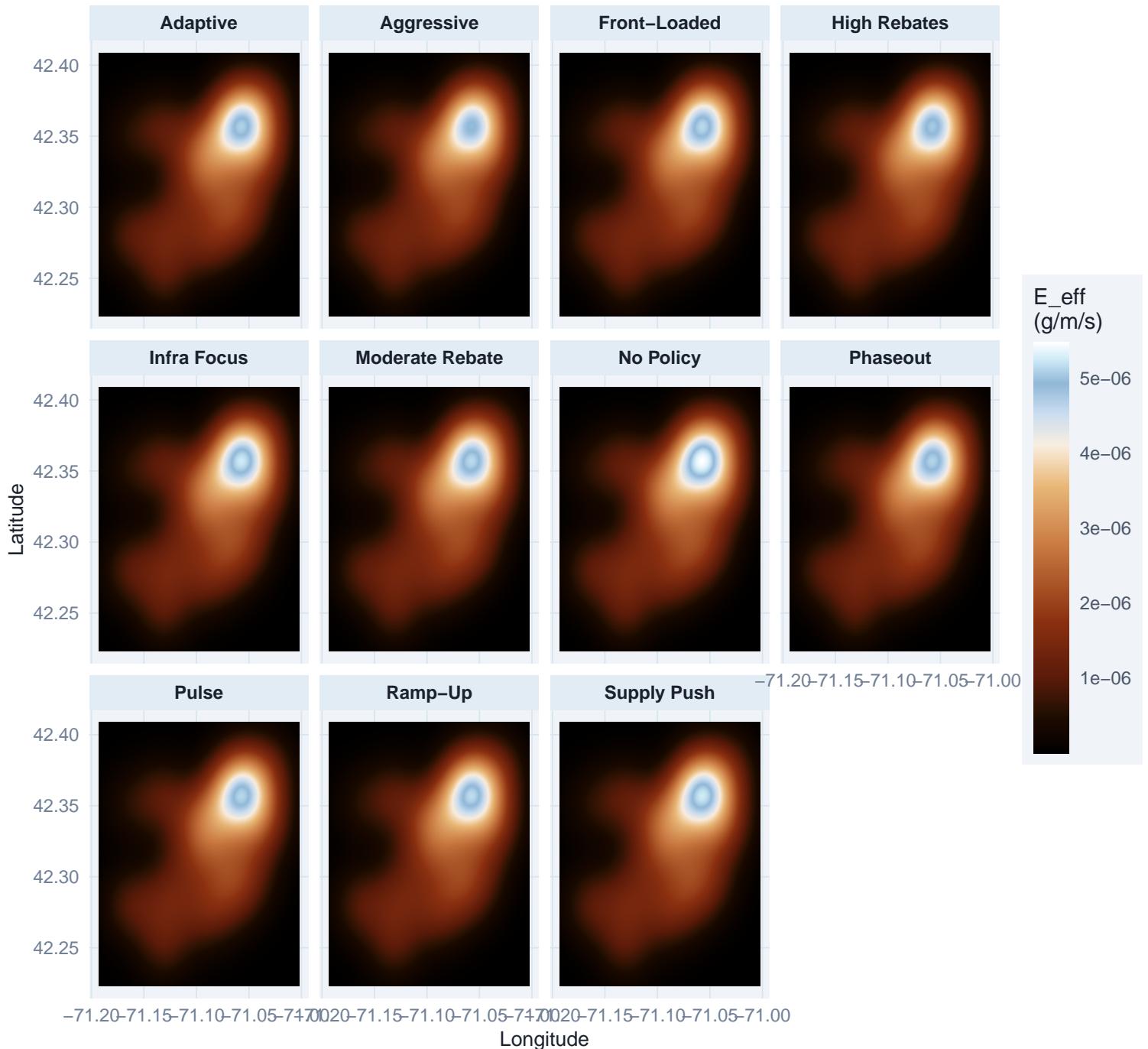
## Spatial Distribution of PM2.5 Emission Burden

Node size = outbound vehicle volume, color = total emission rate



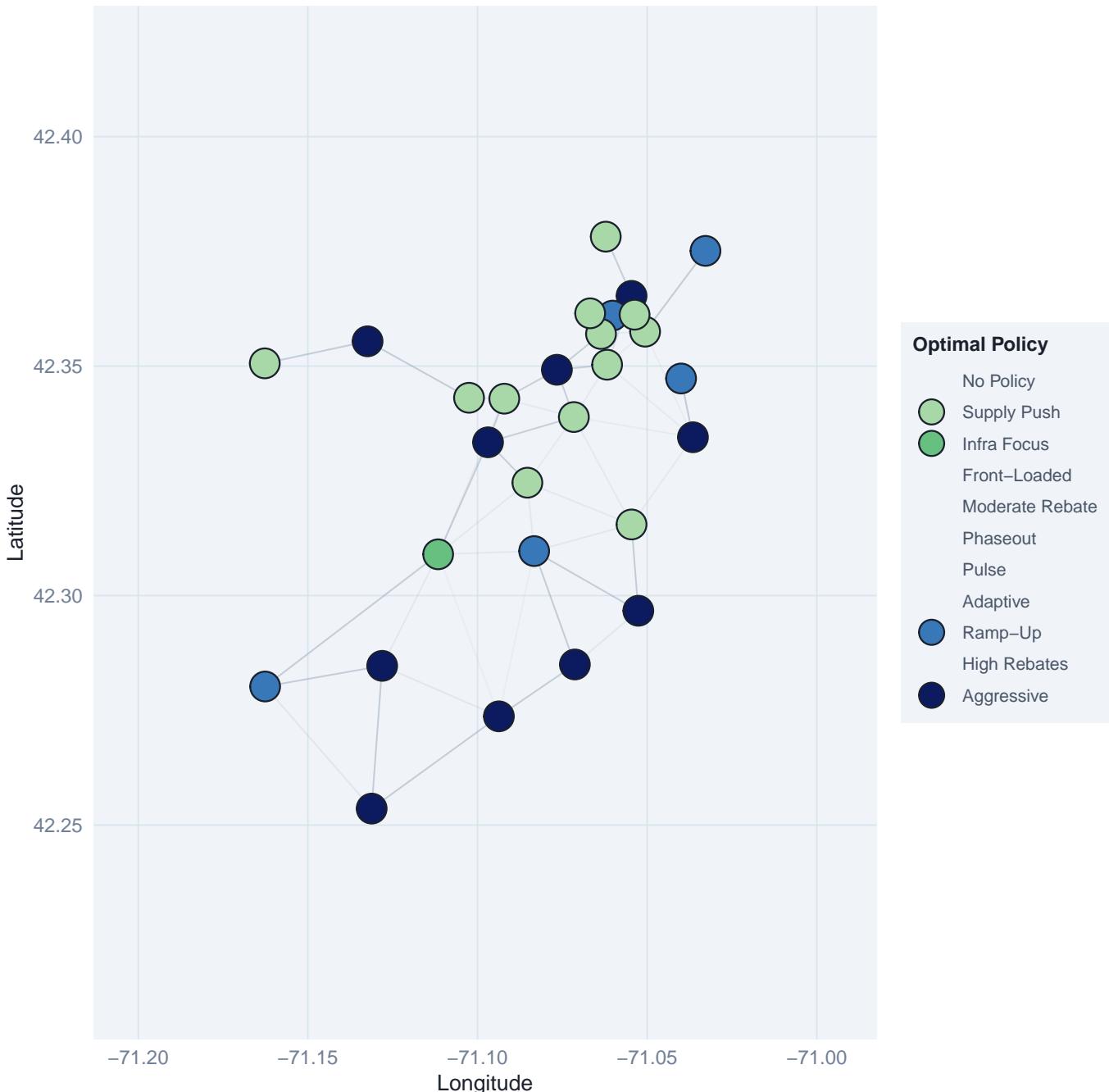
# Spatial Distribution of PM2.5 Emission Burden (Absolute)

Gaussian emission surface per zone, warmer color = more pollution



# Budget–Optimal Policy per Node (\$5.0B cap)

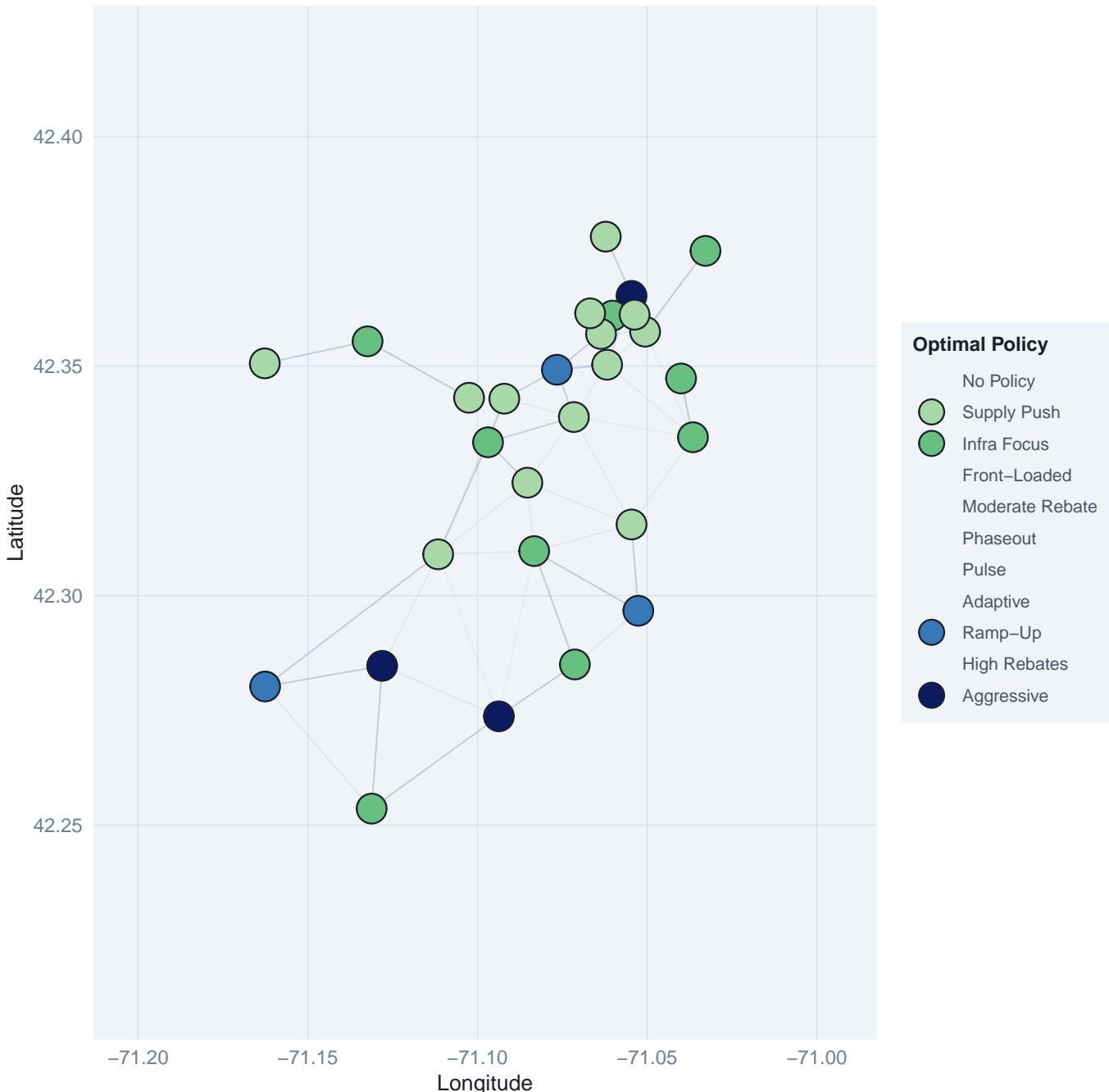
Budget: \$5.0B | Spent: \$4.97B (99.4%) | Remaining: \$0.03B | Policy intensity matched to node PM2.5 burden



Green = low-cost · Blue = moderate · Navy = high-investment · Grey = no policy (budget exhausted)

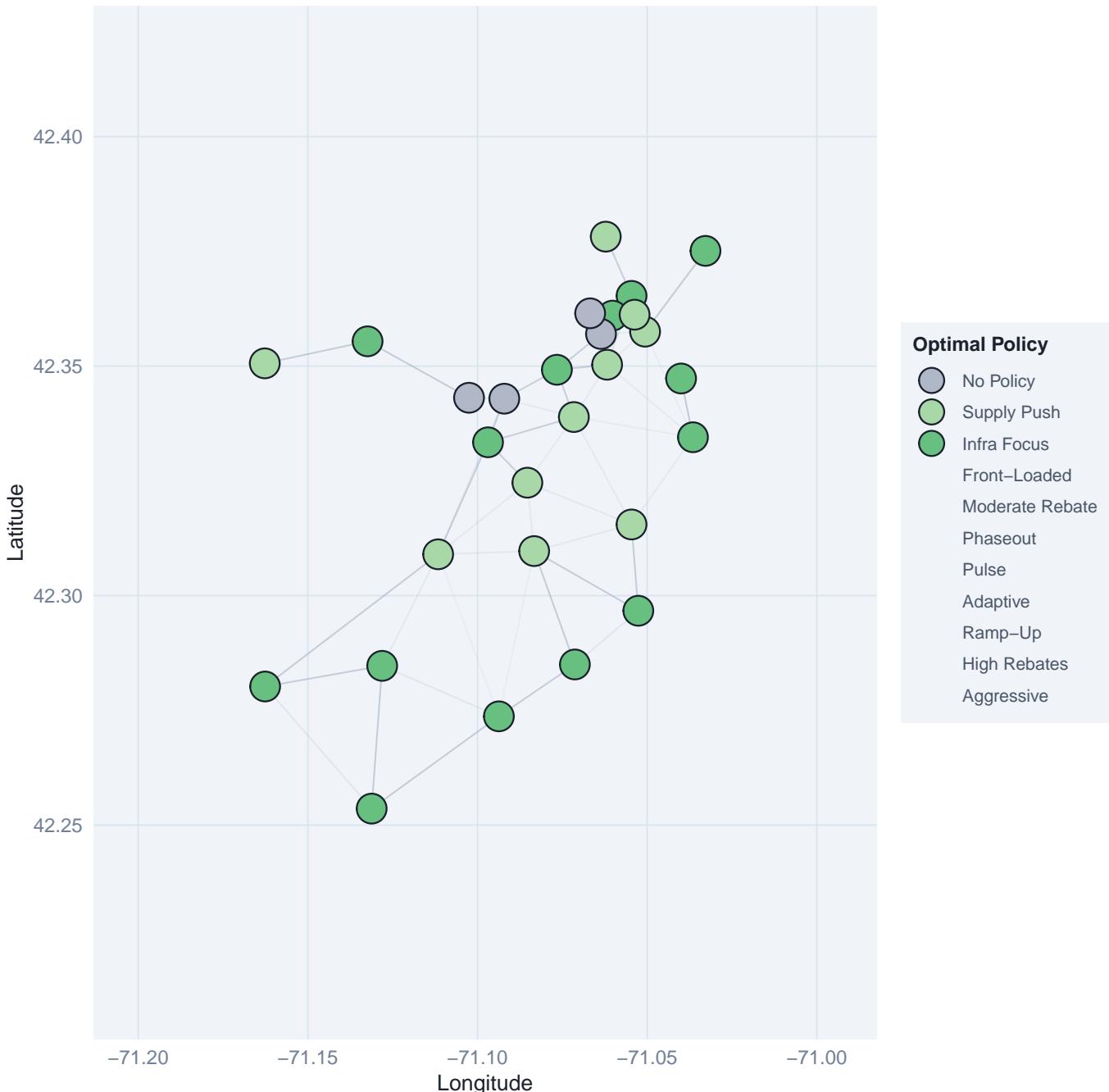
# Budget–Optimal Policy per Node (\$2.5B cap)

Budget: \$2.5B | Spent: \$2.48B (99.0%) | Remaining: \$0.02B | Policy intensity matched to node PM2.5 burden



# Budget–Optimal Policy per Node (\$1.0B cap)

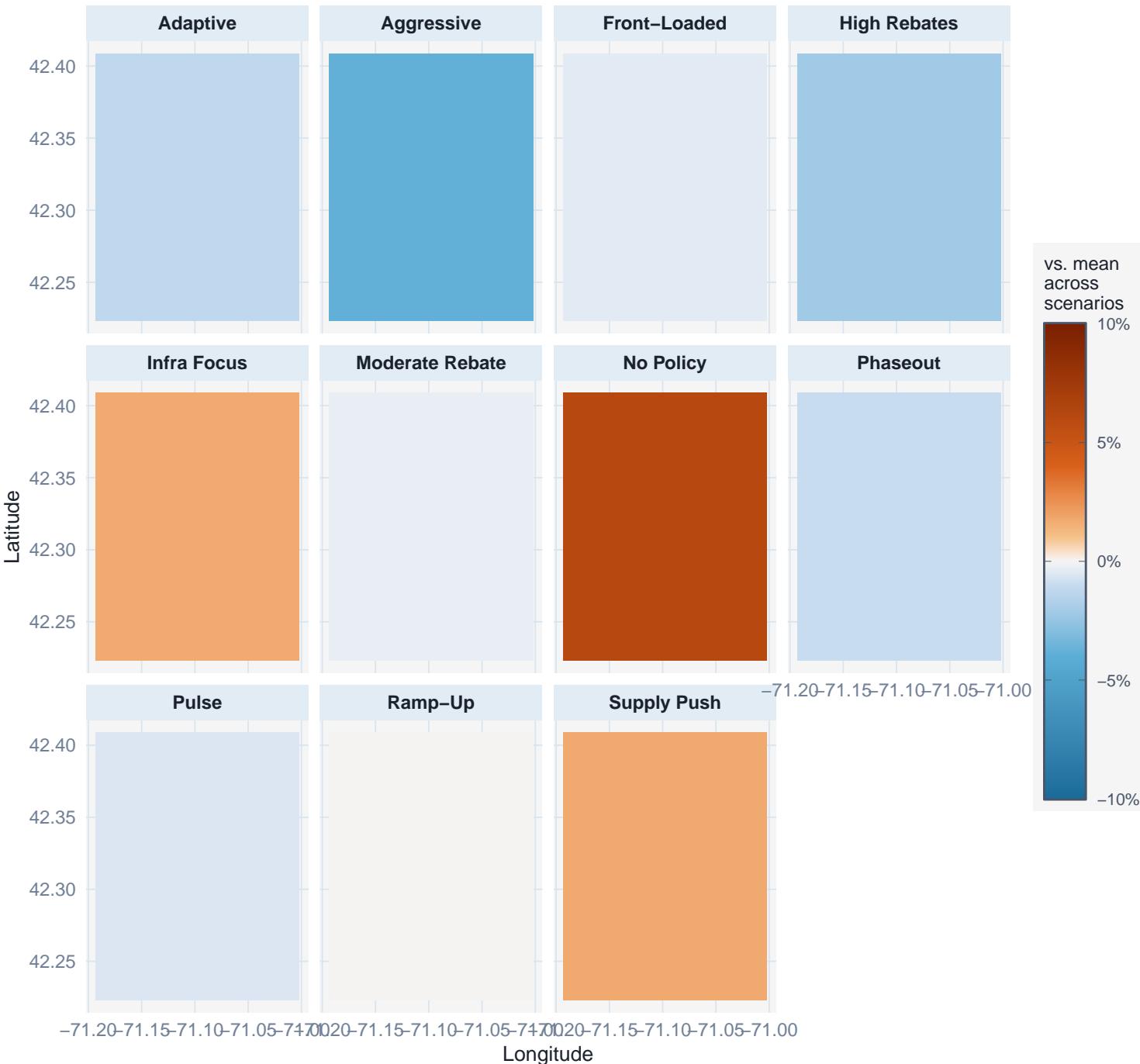
Budget: \$1.0B | Spent: \$0.97B (97.1%) | Remaining: \$0.03B | Policy intensity matched to node PM2.5 burden



Green = low-cost · Blue = moderate · Navy = high-investment · Grey = no policy (budget exhausted)

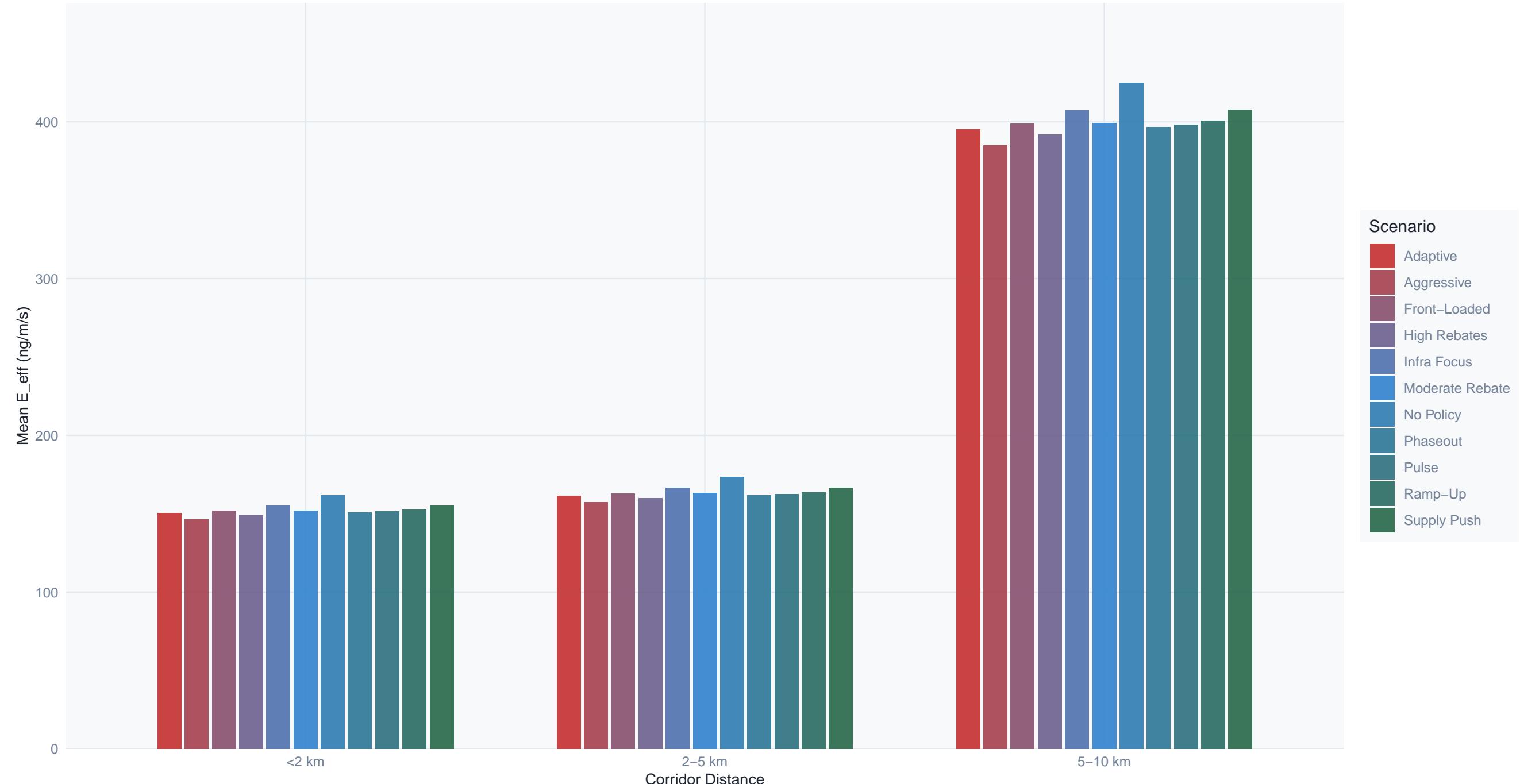
# Spatial PM2.5 Emission Burden: Deviation from Cross-Scenario Mean

Orange/red = above average; blue = below average at each map cell



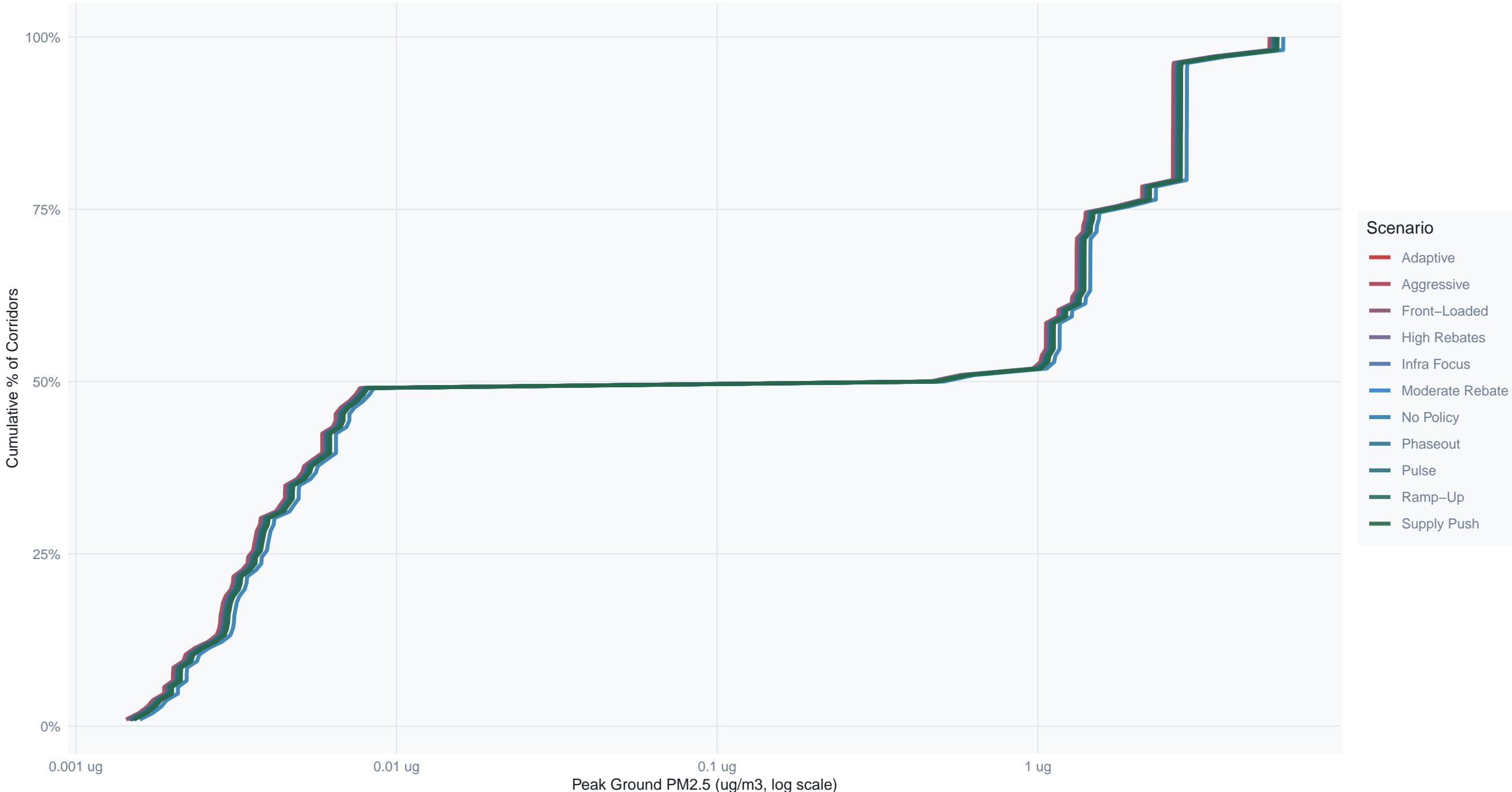
# Mean Emission Rate by Corridor Distance Band

Average E\_eff per corridor length category



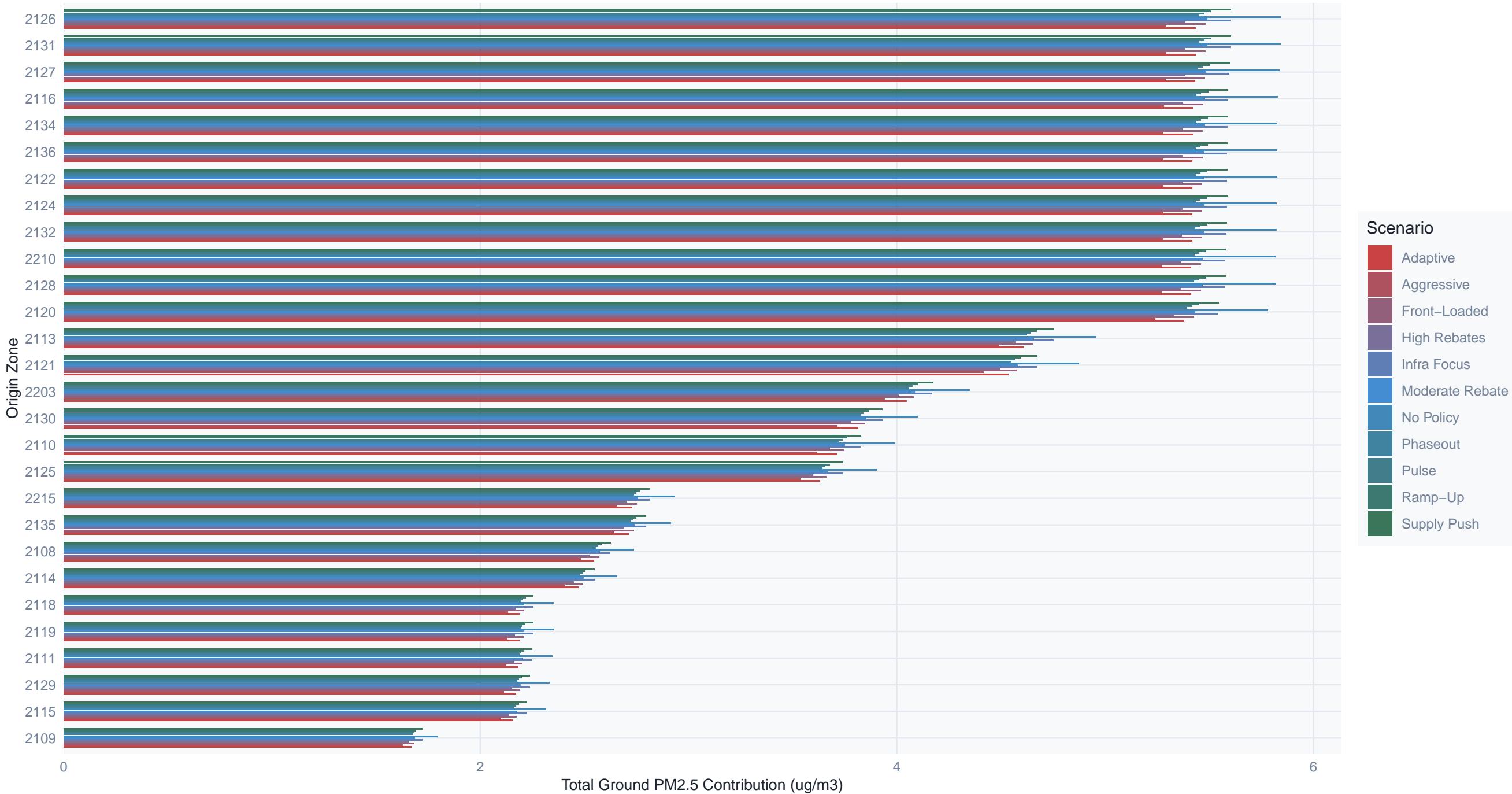
# Cumulative Distribution of Peak Ground-Level PM2.5

Each point = one corridor, rightward shift = worse air quality



## PM2.5 Burden by Origin Zone

Sum of peak ground concentrations across all outbound corridors per zone



# Vehicle Volume vs. Peak Ground PM2.5 by Corridor

Both axes log scale, color = corridor distance

