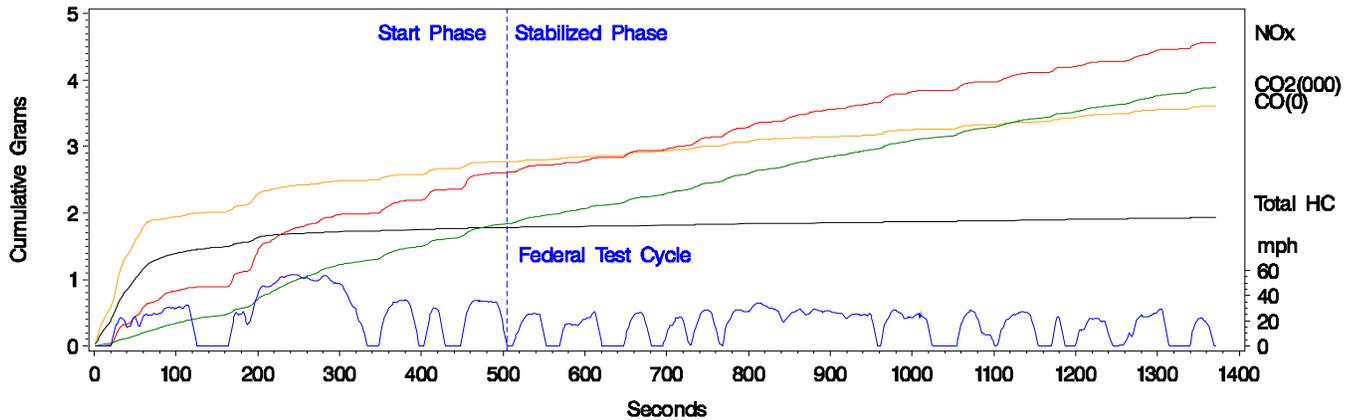
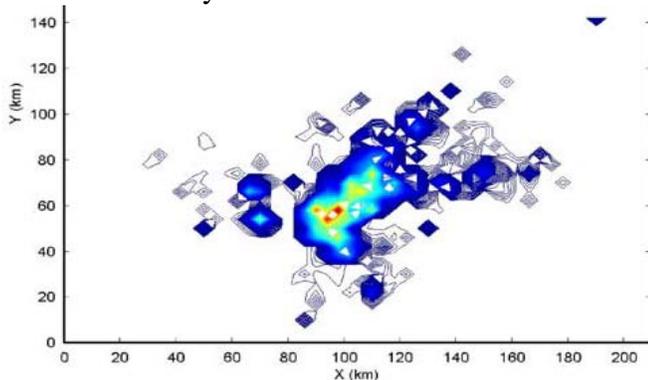


Caltrans Mobile Source Emissions Model (DTIM)



What? The Direct Travel Impact Model (DTIM) reads both trip assignment files (including link and trip end volumes) from transportation models and automotive air pollutant emission and fuel consumption rates from the California Air Resources Board (ARB) EMFAC (Emission FACTors) model. It then calculates direct impacts (air pollutant emissions, green house gasses and fuel consumption) and reports the impacts in a variety of forms and levels of detail.

Gridded Start Hydrocarbon Emissions in SACOG



From Niemeier, Atmospheric Environment 38, 2004

Why? The Federal Clean Air Act, AB 32, SB 375 and SB 743 require estimates of fuel consumption by or emissions (toxics, ozone precursors, greenhouse gasses) from motor vehicles for satisfying air quality, energy conservation, or greenhouse gas reduction standards. In California, ARB's EMFAC/Burden model is often used to make those estimates; this model facilitates making those estimates in the transportation planning and project development context with the

travel estimates that are part of those analyses. EMFAC emission and fuel consumption rates would continue to be used. MAP-21 strengthens this mandate under its Congestion Management and Air Quality section.

How? DTIM performs detailed calculations (link-wise and zone-wise using travel model outputs (trip assignment files) so it is sensitive to many more strategies than the Burden portion of ARB's EMFAC model. Since their development in the 1980s the most defining feature of DTIM and EMFAC7+ has been their stratified calculation of mobile source impacts into running (hot stabilized), start, and park (evaporation) processes. The U.S. EPA incorporated a similar treatment in its parallel models.

Products? The immediate product will be an easy to use method of calculating emissions from EMFAC and detailed transportation models so that alternative scenarios can be evaluated on their detailed emissions and fuel use consequences.

Who will benefit? DTIM will provide detailed emission estimates that will improve transportation decision making in California.

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