

current situation, the other based on the proposed land use changes made by the community. The difference between these “before and after modeling” scenarios would show the emission impacts of the land use changes. We recognize that this modeling is very complex and resource intensive. Complexities arise because in many areas across the country, on-road mobile source emissions are estimated using transportation and emissions models. The locations where people live and work in an area, are important inputs to the transportation planning and modeling processes. As such, the long range transportation plan which covers at least 20 years into the future was developed to reflect the mobility needs for a specific land use scenario. It has been long recognized that there is a complicated, dynamic and interrelated relationship among air quality, transportation and land use planning. Evaluation may need to be iterative. For example, if land use changes are proposed to gain air quality benefits, the transportation system may need to be re-evaluated to insure, that with the new land use scenario, the transportation system can continue to provide an acceptable level of transportation service to all members of the community. Therefore, it may be difficult for areas to precisely quantify the emissions related to land use choices from this modeling, given the dynamic nature between land use and transportation. In conducting this sort of analysis, States should be working closely with MPOs and other transportation and planning agencies.

The second set of difficulties involves setting the timeframe before emission benefits can be realized. EPA seeks comment on the potential difference in the time period over which benefits may be realized from land use strategies compared to the NSR program. Land use strategies tend to be long term. Once a particular land use strategy is adopted, it may take several years before the change results in air quality benefits. For example, suppose an area decides to change its zoning regulations to encourage mixed-use development. This strategy may ultimately result in lower relative emissions because of people making fewer vehicle trips because housing, employment, and shopping are located together compared to development patterns that might occur without the changes to the zoning regulations, and the increase in density may generate transportation options such as transit service, bicycling, and walking. However, it may be several years before the zoning regulations

actually change where people and businesses decide to locate. Of course, it should be noted that flexibilities proposed do not necessarily mean that new development will occur right away. EPA requests comment on how to take this issue of timing into account in our proposal to give program flexibility for adopting land use measures.

g. *How can changes to land development affect air quality?* As metropolitan areas continue to expand in both size and population, how and where development occurs has significant implications for many environmental impacts including air quality. For example, establishing land use strategies to increase population and housing densities, and support the provision of mixed use development can make transit, and bicycle and pedestrian facilities more viable options to driving. These strategies may decrease the amount of motor vehicle emissions that would occur compared to development patterns if the strategies were not established.

h. *What is the connection between land use and NSR?* A major new source has the potential to be a major economic development generator for a region that may influence development and travel patterns. For example, if a large new facility were to locate outside of the nonattainment area (in many cases this means outside of the area with existing development, infrastructure and density) it may affect regional travel patterns. Such a facility that hires hundreds of people and is located where there are few opportunities to use alternative modes of transportation (e.g., mass transit or walking to work) may result in greater amounts of VMT and vehicle trips (“VT”) per employee than a similar facility accessible by mass transit. For example, a long-term effect of locating a large facility in an undeveloped area, particularly one that employs a large number of people, could be that it ultimately attracts additional development. For instance, if enough employees are at the site, the nearby area may attract other service industries (e.g., fast food, drycleaners, and gas stations). These developments may be low density, auto-dependent, and single-use, which may generate additional emissions (both area and mobile sources). The NSR program does not consider or offset these emissions.

On the other hand, if a hypothetical source chooses to locate in an area that is already developed, it may generate less VMT and therefore fewer emissions than one located in an undeveloped area. The source may be able to take advantage of the existing infrastructure and service, without the construction of

new infrastructure elements (roads, sewer lines, etc.) that result in their own air emissions and other environmental impacts. Such location in existing developed areas may not open up new areas to development, nor encourage sprawl. With this option, EPA is trying to recognize the indirect impacts of development. If communities use CADC techniques, they should, compared to communities that do not use such practices, offset some of the indirect emissions from new sources. The NSR program only considers the direct impacts from a development. This option tries to look more broadly at all the impacts of development. We would reduce the requirements of NSR and would provide increased program flexibility in exchange for the reduced emissions from CADC practices.

A strategy that recognizes the relationships between stationary, area and mobile sources, as well as how these impacts affect total environmental quality, is one that will most effectively deal with today's environmental problems. That is why multiple offices in EPA—the Air Office, the Water Office, the Policy Office and the Brownfields Office—all have programs encouraging development patterns that reduce environmental impacts. These programs use a variety of tools: regulations, information, and partnerships to encourage such development. It would be consistent with these other Agency efforts to develop a way to use flexibilities in CAA programs to encourage CADC practices. It would also be supportive of the many States and localities that are interested in accounting for the air quality benefits of their development choices.

i. *Are there other environmental impacts that result from land use choices?* Yes, low density development patterns tend to disturb more land and create more impervious cover over a region (e.g., paved roads), harming a region's water quality and disrupting habitat. Because of the close interaction between development and the achievement of national environmental goals, EPA has long been engaged in addressing their environmental impacts. The Office of Water seeks to address the impacts of development through its watershed programs, non-point source programs, source water protection efforts, the National Estuary Program, and Total Maximum Daily Load programs. When EPA reviews projects under the National Environmental Policy Act, it examines the secondary and cumulative impacts of development generated by Federal actions. The Brownfields Office, recognizing the