

considered in Statewide, metropolitan and corridor transportation planning and programming. Further, it also endeavored to assess the feasibility of incorporating such considerations in transportation planning and programming.

When asked if road user impacts of work zones are considered in transportation planning and programming, about 24 percent of respondents who provided comments on specific questions in the ANPRM indicated that user-impacts are not currently considered in transportation planning; 9 percent did not respond; 18 percent of the responses were unclear; while 49 percent indicated that user impacts are indeed considered in transportation planning. Even though 49 percent of the respondents said yes, many interpreted the question as addressing early project-level planning verses the transportation planning processes that develop long-range and short-term transportation plans (LRTP's and TIP's). Therefore, there is a significant amount of ambiguity in the responses to this question.

When asked if work zone impacts should be considered in metropolitan, statewide and corridor level transportation planning, on average, about 30 percent of the respondents who provided comments on specific questions in the ANPRM said yes to metropolitan and statewide planning, while 25 percent said no. Of the respondents who indicated that work zone impacts should be considered in metropolitan planning, 74 percent belonged to DOTs, 4 percent were from private agencies, 13 percent represented trade associations, and 9 percent did not indicate their agency affiliations. Of the respondents who indicated that work zone impacts should be considered in statewide planning, 86 percent belonged to DOTs, 5 percent were from private agencies, 5 percent represented trade associations, and 5 percent did not indicate their agency affiliations. On the other hand, a slightly higher number of respondents who provided comments on specific questions in the ANPRM, 48 percent, indicated that work zone impacts should be considered in corridor planning, while only 9 percent said no. It is noticeable that about 40 percent of the respondents who provided comments on specific questions in the ANPRM did not respond to any of these issues, which indicates the level of ambiguity in the responses.

There were mixed responses to the adoption of crosscutting policy level considerations to account for the safety and mobility impacts of work zones in

transportation planning and programming. Examples of such crosscutting policy-level considerations include the use of more durable materials, life-cycle costing, complete closure of facilities, information sharing on utilities, etc. The purpose of adopting policies on such cross-cutting issues is to facilitate a streamlined approach to incorporate work zone considerations into transportation planning and programming, and to serve as decisionmaking tools that help make better decisions to mitigate the impacts of work zones, while planning, programming, designing, and implementing projects. Most respondents did not interpret the question appropriately, leading to several responses that did not address this issue directly.

ANPRM "Transportation Planning and Programming" Section—FHWA Response and Proposed Action

The provisions in the proposed amendments do not have a direct effect on the transportation planning processes (*i.e.*, LRTP and TIP) that consider and develop transportation plans at a regional or metropolitan level. The responses to the questions in the transportation planning and programming section were ambiguous, with several respondents either choosing not to answer the questions or misinterpreting the questions as addressing early project-level planning verses the transportation planning processes that develop long-range and short-term transportation plans (LRTP's and TIP's). Further, 23 CFR part 630 subpart J falls under the "Engineering and Traffic Operations" area, and does not exercise authority over the "Planning and Research" areas.

The proposed changes do not have any implications on the transportation planning processes that develop LRTP's and TIP's. However, based on current industry trends and needs and on ongoing research, the FHWA believes that it is important to consider the impacts of work zones while developing transportation plans by accounting for these impacts at the regional, network and corridor levels, and suitably coordinating projects so as to minimize these impacts. Certain State DOTs, for instance, the California Department of Transportation (Caltrans), consider the impacts of work zones at the systems planning level by evaluating the feasibility of the implementation of multiple projects in their respective districts. The FHWA intends to conduct further research and outreach to better understand how work zone impacts can be incorporated in the transportation

planning and programming processes, and to further develop the necessary tools and guidelines that will help States implement such consideration.

ANPRM "Project Design for Construction and Maintenance" Section—Comments Summary

The purpose of the Project Design for Construction and Maintenance section in the ANPRM was to identify strategies and practices to make better decisions on alternative project designs that may lead to reductions in the need for recurrent road construction and maintenance work, the duration of work zones and the disruption caused by work zones. Examples of such considerations include life-cycle cost analysis, alternative project scheduling and design strategies, such as, full road closures and night time work, using more durable materials, coordinating road construction, estimation of user costs/impacts, risk and reward sharing with contractors, and constructability reviews for projects.

The ANPRM queried the public on how the FHWA can encourage considerations in project design and decisionmaking that may lead to reductions in the need for recurrent road work, the duration of work zones and the impacts of work zones. Examples of such considerations include life-cycle cost analysis; alternative project scheduling and design strategies, such as, full road closures and night time work; using more durable materials; coordinating road construction; estimation of user costs/impacts; risk and reward sharing with contractors; and constructability reviews for projects. The following is a summary of suggested methods for FHWA to facilitate these considerations¹⁰:

- Several respondents suggested that FHWA develop procedures and practices and provide guidelines for States to be able to incorporate such considerations. A few respondents referred to the "Work Zone Best Practices Guide" as a good starting point.

- A few respondents (primarily State DOT's and a few trade associations) suggested that the FHWA provide funding incentives for States that adopt such practices.

¹⁰ We do not indicate percentages for this ANPRM question as it was primarily a qualitative question that asked for suggestions on methods to best incorporate considerations in project design to reduce recurrent road work, the duration of work zones and the impacts of work zones. What is presented is a summary of the most popular suggestions and often repeated suggestions from the respondents.