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Subject: Request for Input regarding Alternative Methods of Transportation Analysis

Dear Mr. Calfee:

This letter responds to the request by the Governor’s Office of Planning and Research (OPR) for input on Alternative Methods of Transportation Analysis dated December 30, 2013. We have organized our input in response to several of the open questions posed at the end of the request paper, as follows below.

What environmental impacts related to transportation exist beyond air quality, noise, and safety and what is the best way to measure those impacts that is not tied to [auto] capacity?

From our perspective, a key environmental impact that is not directly related to air quality, noise, and safety is what a proposed project does about adequate access by bicycles. Access by bicycle is critical to allow a project’s residents, customers, visitors, and employees to use bicycling for everyday transportation. Indirectly, to the extent that mode share of bicycling increases, air quality, noise, and safety conditions will benefit.

We believe the failure of a proposed project to provide adequate access for bicycles constitutes a significant adverse effect. Failure to provide adequate access for bicycles can occur in three ways:

- Failure to provide adequate bicycle parking. (Without assured parking, people will not use a bike to travel to a destination.)
- Failure to provide bicycle access to bicycle parking. (Without a safe and visible access route across a project site to available bicycle parking, customers or visitors will not be able to use bike parking.)
- Failure to provide bicycle access to a project site. (If a proposed project degrades existing bikeways or fails to provide safe and comfortable bikeways into and through a project site, bicycle access will be frustrated.)

Impacts on bicycle parking are straightforward to measure because many jurisdictions have good bicycle parking requirements (e.g., the City of Sacramento’s Bicycle Parking requirements are codified in its Planning and Development Code Chapter 17.608). For other jurisdictions, the Association of Pedestrian and Bicycle Professionals has published an excellent guide (APBP. 2010. Bicycle Parking Guidelines, 2nd Edition: A set of recommendations from the Association of Pedestrian and Bicycle Professionals) against which failure to provide bicycle parking can be measured.

We suggest the best way to measure failures to provide adequate access for bicycles through project sites and on public streets is the roadway classification system developed and described by Mekuria et al. (2012). This system is based on studies showing that people’s willingness to ride bicycles depends on their tolerance of traffic stress...
and that traffic danger is the chief impediment to bicycling. Geller (n.d.) estimates that less than 1% of the population is willing to bicycle in multilane high speed, high volume vehicle traffic; approximately 7% do not tolerate high speed, turbulent traffic but will ride in bike lanes along arterials and with traffic on smaller roadways; and about 60% of the population is interested in bicycling but concerned about riding in traffic; this group will seek out separated bicycle paths and streets with slow, infrequent traffic. The last one-third of the population will never consider bicycling. This breakdown of the population means that, if we are seriously interested in increasing bicycling mode share, we must aim our bicycle infrastructure at the 60% of people who are “interested but concerned” (Mekuria et al. 2012).

Therefore, Mekuria et al. (2012) classifies the roadway system by 4 levels of tolerance of traffic stress (LTS). LTS 2 roadways present “little traffic stress and [are] therefore suitable to most adult cyclists,” the mainstream population that is interested but concerned about bicycling. LTS 3 offers more traffic stress than LTS 2 and corresponds to the 7% of the population that is enthused and confident about bicycling near moderately heavy and fast traffic. Finally, LTS 4 represents roadways where bicyclists are forced to integrate with high speed, high volume traffic to use them. LTS 1 offers the least traffic stress and is suitable for children where less attention is required and relaxing bicycling is possible.

We believe that adequacy of access for bicycles should be measured against conditions that are attractive for the largest proportion of our population, the LTS 2 roadway of Mekuria et al. (2012). If a proposed project causes roadway conditions to depress to LTS 3 or 4, it has a significant adverse impact on bicycling access. If a project fails to produce LTS 2 conditions within its project site or on access points to the project site, it has a significant adverse impact on bicycle access. For example, a proposed mixed use residential/commercial project that does not establish a continuous network of LTS 2 bikeways among key destinations within its boundaries would be judged to cause a significant adverse effect on bicycling.

Bikeway networks are comprised of links, intersections, and crossings. On links, LTS 2 bikeways are either 1) physically separated from vehicle traffic or 2) provide an exclusive bicycling zone next to a well-confined traffic stream with adequate clearance from parked cars, or 3) are on a shared roadway with only occasional vehicles traveling at slow speeds (Mekuria et al. 2012). Mekuria et al. (2012) also defines LTS 2 conditions at intersections and crossings of barriers to bicycling.

Would consistency with roadway design guidelines normally indicate a less than significant impact?

We believe that consistency with roadway design guidelines does not prevent a significant adverse effect on bicycling access for several reasons: First, such guidelines have historically been devised to produce a combination of safe conditions for vehicle operation and high mobility for vehicle traffic, neither of which necessarily correspond to comfortable, low stress conditions for bicycling. Secondly, authors of roadway design guidelines at both federal and state levels are conservative and slow to consider improvements for non-vehicle modes. Because of this conservativeness, the National Association of City Transportation Officials (NACTO) has come up with its own Urban Street Design Guide and Urban Bikeway Design Guide to “provide cities with state-of-the-practice solutions for 21st century transportation infrastructure” (http://nacto.org/). Many state and city traffic officials resist attempts to use these measures to make streets more adequate for all travel modes.

What are the best available models and tools to measure transportation impacts using the metrics evaluated in OPR’s request paper of December 30, 2013?

We believe none of the metrics evaluated in OPR’s paper adequately represent adverse effects of a project on bicycling access. Therefore we recommend that OPR adopt and/or modify as appropriate the methods of Mekuria...
et al. (2012) in defining and classifying roadways by level of traffic stress for bicyclists as discussed above. We believe this approach well satisfies many of OPR’s objectives in evaluating impact measuring tools (page 6ff of the OPR paper), including:

- **Environmental Effects**: Use of the traffic-stress level model would maximize environmental benefits and minimize environmental harm for bicyclists.
- **Fiscal Effect**: The traffic-stress level model is highly efficient to use by local lead agencies.
- **Equity**: Use of the traffic-stress level model will enhance low-cost access to destinations using bicycles.
- **Health**: Use of the traffic-stress level model will promote health benefits of active transportation by making bicycling safe and comfortable for a majority of our population, not just a scarce few of the bravest bicyclists.
- **Simplicity**: The traffic-stress level model for evaluating bicycling impacts is simple and easy to use and will allow the public and interested agencies to participate in the environmental review process.

Finally, we believe the traffic-stress level model is the best at representing what are the most important phenomena that affect the willingness of people to use bicycling for everyday transportation.

**What role should parking play in the analysis of transportation impacts?**

As discussed above, availability of secure and accessible bicycle parking will fundamentally affect the ability of people to use bicycling for everyday transportation. Therefore, we believe evaluation of the adequacy of bicycle parking has a critical role in analyzing transportation impacts.

SABA works to ensure that bicycling is safe, convenient, and desirable for everyday transportation. Bicycling is the healthiest, cleanest, cheapest, quietest, most energy efficient, and least congesting form of transportation.

Thank you for considering our comments and suggestions.

Sincerely,

[Signature]

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Citation: