

To: Cambridge City Council
From: Chris Zegras, 327 Pearl Street, #2
Re: Pearl Street Reconstruction Project
Date: 26 January, 2017

Overview

I have been a resident at 327 Pearl Street since 2007 and of Cambridge since 2001 (before that I lived in Somerville) and have worked or studied in Cambridge since 1998. Bicycle has been my only commuting (to work or school) mode for that entire period and is also my main urban transport mode. I cycle and walk on Pearl Street every day, including with my five year old daughter who I walk to Morse School nearly every morning (and pick up nearly every evening). And, yes, our household parks a car on Pearl Street (typically between Henry and Glenwood) and I also occasionally use our household car for inter- and intra-city travel. I previously served on the Cambridge Bicycle Committee and am an Associate Professor of Transportation and Urban Planning at MIT (I am currently on research leave out of the country and thus unable to transmit these comments in person). A key reason I have chosen Cambridge as a home city is because of its approach to transportation and community development and I applaud the city and its staff for its thoughtful work.

Nonetheless, I have several concerns with the city's "preferred alternative," which I believe is not entirely well-justified, based on the information available, and stands the chance of creating more problems than it will solve. I summarize the main points here, with additional details following:

- A bike lane is not clearly warranted on all segments of Pearl Street and the benefits/costs of the preferred alternative, bike lane in lieu of parking, are not clearly elaborated.
- Bicycle demand is unknown on Pearl St., based on public information, as the available report does not provide bike counts; in particular, the bicycle demand (current or future) during the time of day when the bike lane will be in operations is unclear. How many cyclists will be using the street during the day when the bike lane is operating and does motor vehicle traffic warrant such a facility at that time?
- By my understanding of the proposed approach (having residents move their cars at precisely the peak rush hours, 8 AM and 6 PM), it threatens to worsen traffic safety and congestion by creating more possible conflicts among different road users at the worst possible time of day.
- The potential parking effects are not adequately studied and mitigation measures are not proposed.
- The project runs the risk of increasing auto usage by increasing motor vehicle speeds on Pearl Street, thus attracting more through-traffic, while also inducing more Pearl Street residents to drive their cars to work or otherwise cruise the neighborhood searching for parking in response to the day-time on-street parking restrictions.
- Given the street's varying travel and usage characteristics, the city should examine more context sensitive interventions, which might include a "bicycle boulevard" segment, and/or other less disruptive tactics, appropriate to the heterogeneous conditions along the street's entire length.

Detailed Comments

1. *What's in a Name?* Calling the city's preferred alternative "Complete Streets," with a four sentence description of its advantages, relative to the "Base Plan" option, with a one sentence description,

clearly biases any observer towards the city's preference. Who would not prefer a "complete street" and what's the alternative – an "incomplete street"?¹

2. *Solution Looking for a Problem, or Creating One?* The city offers inadequate data to fully back-up its implied argument. Indeed, some of the data provided may undermine the city's preferred alternative.
 - a. Safety: Presumably, the city wants to create a safer street; yet, the city's own data show that cyclist safety risks are nearly entirely focused on the Pearl Street and Mass Ave. intersection.² Perversely, the proposal may **worsen safety** as the bike lane will: (1) Likely increase traffic conflicts at 8 AM and 6 PM, when the parking transition "rush" begins; and (2) Increase motor vehicle speeds during the day by reducing the traffic calming effect of on-street parking and removing the presence of cyclists (who reduce car speeds) from the vehicle lane. An additional perverse result of the latter would be to **increase automobile usage** on Pearl St. and increase risks to all Pearl St. users, especially the most vulnerable.
 - b. Vehicular counts: The McMahon Memo³ raises several concerns. First, it shows congestion is a non-issue on Pearl Street;⁴ rather, excess speed, is a problem (especially at the end of the street, at Tufts/Henry; Table 4). Interestingly, while the consultants reportedly counted cyclists, these **cyclist counts are not included in the report**: it's important to know the current and future cycling demand the city is aiming to satisfy with a dedicated bike lane. Finally, the city's own recorded **average daily traffic (ADT) counts**⁵ **do not necessarily support a bicycle lane** for the entirety of Pearl.⁶
3. *Where will the Parking Go?* The validity of a parking study⁷ conducted over a three day, mid-week period in Spring, after 10 AM, can be questioned. Why did the consultants not study street cleaning days? The consultants argue "there should be sufficient availability throughout the neighborhood

¹ Note, that the "base plan" is also a "complete street"; materials available from the National Complete Streets Coalition indicate quite clearly that "many types" of complete streets exist, necessarily adapted to different contexts.

² Four of the five bicycle-auto crashes reported over the 2010-2013 period were at Pearl and Mass Ave.: Cambridge Police Department Pearl Street Crash report.

³ TO: Juan Avendano, City of Cambridge; FROM: Jason Adams, P.E., PTOE; DATE: February 27, 2014; RE: Pearl Street Data Collection.

⁴ Although I would ask the city to examine more closely the BU Bridge back-up which can extend up Pearl Street, sometimes all the way to Tufts St., during rush hour. This traffic back-up is worse in the evening peak, exactly when the city's proposed approach would generate additional local traffic by increasing the number of Pearl St. residents returning home to park their cars.

⁵ ADT <2800 (Auburn/William), ADT <2300 (Lawrence/Valentine), ADT <1700 (Tufts/Henry) (Table 3).

⁶ Standards for bike lane construction on one-way streets with parking on both sides are not clear from widely available sources; according to the *National Association of City Transportation Officials (NACTO)* bicycle lanes are most helpful on streets with motor vehicle ADT ≥ 3000 (presumably 2-way ADT), posted speeds ≥ 25 mph, and high public transit volumes. See: <http://nacto.org/cities-for-cycling/design-guide/bike-lanes/conventional-bike-lanes/> and NACTO, *Urban Bikeway Design Guide*, Island Press, 2014.

⁷ PEARL STREET ON-STREET PARKING STUDY, Cambridge, Massachusetts. Prepared by: McMahon Associates, Inc. Prepared for: City of Cambridge, May 2014.

on street cleaning days," but do not substantiate this adequately.⁸ And, this says nothing of snow season. **No viable mitigation plan** is proposed.

Ironically, a possible outcome of the city's preferred alternative is to increase automobile travel by local residents. Vehicle owners who regularly take other modes to work, school, etc. in the morning will have a **greater incentive to drive** their cars due to the new parking restrictions.

Finally, I believe the city should not use the "Pearl Street Survey" as a basis for determining community support for the project. The survey is a snowball survey and there is no way to validate the representativeness of the respondents. I strongly support using a range of participatory planning approaches, however if the city is going to attempt to generate an accurate, survey-based picture of citizens' perspectives on projects it should use methods (e.g., a simple random sample) which would allow valid inferences to be drawn based upon the responses.

Moving Forward

In my own opinion, an ideal solution to Pearl Street would be a **context-sensitive** "complete street," aiming to create a space where motor vehicles and bicycles travel at safe neighborhood speeds. This may include bicycle lanes, either permanent or temporal, as proposed, but may also include other designs, such as bicycle boulevard elements, the strategic removal of parking spaces to create spots for motor vehicles to overtake bikes, and/or other design elements that may well vary down the full length of the street. This would represent a truly **context sensitive solution**, reflecting the fact that the usage characteristics and subsequent design needs of, for example, the Mass Ave. to Auburn St. segments are clearly different from those of the Tufts St. to Granite St. segments.

⁸ From the study, it is not clear to me how the consultants make their calculations of the apparent "sufficient availability" when accounting including side streets. It seems they may even fail to account for the fact that street cleaning restrictions also limit parking on the side streets. The simple solution would have been to assess the situation on at least one street-cleaning day.