



CAMBRIDGE ADVISORY COMMITTEE

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MEMORANDUM

TO: The Members of the Cambridge Advisory Committee
FROM: Paul J. Frank, Executive Director
DATE: July 13, 1971

MBTA REQUIRED BY FEDERAL LAW TO PRESENT " PRUDENT ALTERNATIVE " TO NOISE POLLUTION WHICH SURFACE TRAINS COULD CAUSE IN WEST CAMBRIDGE

The MBTA has told the Federal government that " If a deep bored tunnel from Alewife to Harvard is selected as the final alignment, then it can be said that there is no adverse audial impacts (noise pollution) from the project. The same is largely true for the Porter Square alignment, but much depends on the details not yet determined. A final alignment could make use of a grade right-of-way parallel to the Boston and Maine Fitchburg branch. Here sound pollution would be a concern for the residents of the area."

The Urban Mass Transportation Act of 1964 requires the MBTA to provide the U.S. Department of Transportation (DOT) with information that will allow the DOT administrator to " make a finding that the proposed project is not likely to have an adverse environmental effect, or there exists no feasible and prudent alternative to such effect, and all reasonable steps have been taken to minimize such effect."

In its draft statement to DOT on February 24, 1971, the MBTA explains that " environmental impact" is meant to cover phenomena ranging from community disruption to the effects on wildlife.

NOISE POLLUTION

This CAC memorandum discusses only noise pollution. Other forms of "environmental impact" will be discussed in other memoranda.

Noise pollution is but one of the environmental changes which the West Cambridge community has been concerned about from the moment the residents first learned that the MBTA plans were in the advanced stage to run surface trains from Porter Square to Alewife Brook.

The MBTA has told DOT that the South Shore Extension of the Red Line which is to be opened soon is an example of how noise pollution may be overcome. The MBTA said in its application on Harvard-Alewife that after the surface trains are running on the South Shore it will examine the new facility for trouble spots. The MBTA can be certain that West Cambridge residents will also be looking with eagle eyes.

The MBTA points to the South Shore Extension in these words:

"In its construction of Red Line extensions to the south, the Authority's capital expansion program has adopted high standards of right-of-way design, and other acoustic considerations. The Red Line program to date has chosen an 'alternative' based on the following elements.

1. Use of below grade right-of-way alignments and tunneling making use of natural shielding.
2. Elimination of short radius curves which cause squeal.
3. Use of resilient mounting of trackage employing concrete ties with rubber underpadding and continuously welded rails to eliminate rattle.
4. Use of automatic train control alleviating need for quick braking and subsequent squeal and also reducing incidence of "square" wheels which cause clatter, dynamic braking and composition shoes are also employed.
5. A maintenance program which includes wheel-balancing.
6. Station access and circulation facilities have been designed to minimize approach time and congestion. The separation of park, kiss-ride, bus and pedestrian access will prevent conflicting traffic movements.

"The above is a description of noise control measures adopted. After operations have commenced, examination will determine where trouble spots exist. The Authority has monitored research carried out by the engineers for the Bay Area Rapid Transit District on the effects of barriers to dampen train noise. The open structures as presently designed could be adapted to provide 'line-of-sight' barriers between the wheels and the observer. In the words of the BART study 'properly constructed and positioned sound barrier wall can provide a 50% (or more) subjective reduction in the wayside noise produced by a transit car.' The BART study was of particular relevance to acoustic performance on relatively tangent track.

"In addition the MBTA has commissioned Bolt, Beranek and Newman to study the treatment of wheel squeal in specific. Again, 'barriers reduce sound levels by approximately 5-20dB.' (10dB was reported at BART.) The report also encouraged the use of water/oil spray to cut wheel squeal by 10dB. This BB&N study attached a cost of between \$420 and \$625 to a section of acoustical barrier.

"Such a program represents an investment that the Authority is willing to make in those areas where a need is actually proven."

The MBTA has shown clear indications that it intends to work with the City of Cambridge on the Harvard-Alewife Extension. It tried to do so before when it was making plans for the surface trains from Porter Square to Alewife Brook but Cambridge planning lacked adequate resources and adequate muscle. And what is even worse, two years elapsed before the people in West Cambridge discovered for themselves what the plans were, not having been informed until after the plans were made and tentatively approved by some officials.

The City Council, the City Manager and the elected officials representing Cambridge at the State House are unanimously opposed to the surface trains but are in favor of a tunnel all the way from Harvard Square to Alewife Brook.

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Memorandum from Cambridge Advisory Committee relative to noise pollution which surface trains could cause in West Cambridge

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