CHAPTER IX
RECOMMENDED TRANSIT TECHNOLOGY AND ALIGNMENT

A. Background

The primary objective of Phase II of this Major Investment Study is to identify a transit corridor and technology to be studied further Environmental Impact Statement (EIS) phase of the project. Through the evaluation process, the study team and a diverse group of stakeholders heard, considered and debated the merits and disadvantages of all the alternatives considered. Although a broad array of evaluation criteria was considered during Phase II, not all stakeholders shared the same emphasis on each evaluation factor. The resulting recommendations represent the consensus reached in Phase II.

Under the Transportation Equity Act for the 21st Century (TEA-21), transportation projects seeking Section 5309 New Starts funding must undergo an evaluation and ratings process with FTA (Federal Transit Administration). These New Starts projects must receive FTA approval through a project rating justification process to advance from alternative analysis to preliminary engineering. FTA considers the following evaluation criteria for project justification:

- *Mobility improvements* as measured by travel times savings and the number of low income households served in comparison to the No-Build and TSM alternative;
- *Environmental benefits* as measured by the net change in air pollutant emissions, greenhouse gas emissions and regional energy consumption;
- *Operating efficiencies* as measured by the change in systemwide operating costs per passenger mile in the forecast year (2025) by comparing the New Start alternative to the No-Build and TSM alternatives;
- *Cost effectiveness* as measured by the incremental cost per incremental passenger in the forecast year in comparison with the No-Build and the TSM alternative; and
- *Transit supportive land use*, which considers the existing land use, containment of sprawl, transit-supportive corridor policies, and supportive zoning regulations near transit stations.

FTA also considers other factors such as the degree to which policies and programs are in place as assumed in the ridership forecasts, project management capability of the applicant, and factors relevant to local and national priorities (i.e., Brownfields, local economic development initiatives, etc). If these other factors are significant, FTA may increase the initial project justification summary rating to reflect this significance.

It was never intended for the Phase II MIS study to address all of FTA's New Starts project justification criteria. The goal of the Phase II study was to determine both a vehicle technology and a transit corridor alignment to be carried forward into the NEPA documentation phase of the project, the Environmental Impact Statement (EIS).

B. Preferred Transit Alignment and Alternative

The merits and disadvantages of various technologies were explored, considered and debated as part of Phase II. All build alternatives were similar with respect to environmental and community impacts, physical characteristics (miles of improvements, structure length, number of stations).

Although the DMU and LRT alternatives presented higher overall transit ridership, it was the exclusive busway options that attracted the highest number of a "new transit" riders attributing to a corresponding decrease in auto trips. In determining the cost effectiveness of all the alternatives in comparison with the No-Build, (incremental cost per incremental new rider, i.e., transit cost per new rider), the Busway and Busway / BMT alternatives proved more cost effective than the other alternatives. The flexibility of constructing a future exclusive busway system with incremental segments of BMT also made these alternatives more attractive in comparison to rail alternatives. The Policy Oversight Committee decided that a decision on the specific technology cannot be made at this time, however, it appears that based on cost effectiveness criteria both the Busway and Busway / mixed traffic (BMT) technologies appear to be the most promising.

These limited conclusions and recommendations on vehicle technology were based in part on modeling forecast results from the new Triangle Regional Model (Version 5.0). Predicting transit ridership through modeling forecasts requires an iterative process of analyzing results, reassessing assumptions, and additional model runs. The modeling forecast results of the Phase II study reflect only a single cursory model run, the results should be viewed as a indication of potential ridership and not as the final projected ridership. The study team also recommends that further refinement of the regional model should be done prior to commencing the EIS phase of the project.

The Phase I MIS Corridor "A" was further refined in Phase II to encourage transit friendly development consistent with future land use plans and projected development. As all the exclusive guideway alternatives shared the same transit corridor alignment in the area between Cameron Boulevard and Fordham Boulevard; the fixed guideway alignment varies only at both Universities. In the Duke area, the consensus of the Policy Oversight and Technical Committee determined that the benefits of a transit corridor along Erwin Road directly serving the University and Duke Medical Center was more desirable than a "Western Alignment" along the NC 147 / NCRR corridor in which two cemeteries would be impacted. The 9th Street Station was also confirmed as a technology transfer point after several other potential sites were studied within the project area. The Policy Oversight Committee also felt that the determination of transit corridor alignment within the UNC campus awaits the cooperative process between the Town of Chapel Hill and University to resolve the alignment on the UNC campus.

The study team recommends adding the Phase II transit corridor to the thoroughfare plan and recommends that the local governments consider this corridor when implementing local land use policies (i.e., zoning changes, establishment of public facilities, planning of parks and recreational areas, and issuing building permits).