FINAL REPORT

Review of
Wake County Transit Plan

By

David T. Hartgen, Ph.D., P.E.
The Hartgen Group
Charlotte, NC 28262
david@hartgengroup.net
704-785-7366

and

Thomas A. Rubin, Consultant
CPA, CMA, CMC, CIA, CGFM, CFM
2007 Bywood Drive
Oakland, CA 94602-1937
tarubin@earthlink.net
213-241-5182

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John Locke Foundation

200 West Morgan, Suite 200
Raleigh, NC 27601
www.johnlocke.org

Executive Summary

The draft Wake County Transit Plan, released in November 2011, proposes a doubling of bus service, new commuter rail[1] service between East Garner and Durham, and light rail[2] service between Cary and northeast Raleigh. The expanded service is proposed to be funded by a ½-cent sales tax, a $10 increase in vehicle registration fees, increased vehicle rental fees, transit bonds, State and Federal funds, and rider fares. The estimated cost of the expanded bus and commuter rail plan is $2.8 B, and the full Plan (including light rail) $4.6 billion through 2040.

We are in agreement with the Plan that the near-term focus of improved transit service in Wake County must be improved bus-based service. We laud the Plan's recognition of that reality. However, our primary finding is that **the Plan, as now proposed, is not technically or financially feasible and is unreliable as the basis for decisions regarding transit investment in Wake County**.

The basis for our finding is that the Plan contains numerous optimistic assumptions, errors of fact or omission, and calculations that are at variance with standard practice in the transit industry. Among our primary concerns are:

General:

- **The plan does not include funding for current transit service; it discusses only funding for expansions of service.** If added to the Plan, the needs of that service would add $2.2 billion to Plan costs.
- **Implied future ridership is over-estimated.** No baseline data on ridership or current operations are provided other than a few 'size' measures. No ridership forecast is provided for substantive justification for the proposed expenditure. The Plan does not mention the needs of the current system's primary markets: low income, no-vehicle riders in need for transitional mobility.
- **If implemented, the Plan implies an average transit vehicle occupancy of just 11% of seats, about 4.6 passengers per bus**, a 30% decrease from current

[1] Commuter rail (CR) generally operates on freight rail lines from suburbs to central cities; is primarily peak period, home-to-work-and-back oriented, has an average distance between stations of approximately three to five miles and, therefore, tends to have a high speed of operations; and has average passenger trip lengths generally over 20 miles. The Long Island Rail Road and Chicago Metra are examples of commuter rail systems.

[2] The specific characteristics of Light Rail Transit (LRT) can vary, but generally include passenger rail vehicles operating in short trains, (most commonly, two to three cars) on tracks that may parallel roads, but where rubber tire vehicles cannot operate in the same lanes; which have at-grade crossings of streets where the trains, rubber tire vehicles, and pedestrians are separated by signage and signaling; generally (but not always) powered by electricity from overhead catenary wires; have stations at approximately one-mile intervals, and have speeds and carrying capacities that are lower than that of heavy rail systems (such as the New York City subway system or the Chicago "L," or Washington, DC MetroRail). The Massachusetts Bay Transportation Authority's Green Line in Boston, San Francisco Muni Metro, and Charlotte's LYNX are examples of LRT.

'Streetcar' is considered by the Federal Transit Administration (FTA) to be a subset of LRT, with the main physical differences being the sharing of traffic lanes by streetcars and rubber tire vehicles. Consequently, Streetcar operating speed is far lower, smaller vehicles are common and multiple-car trains are uncommon, there tends to be far more stops, and the routes are generally far shorter than modern light rail lines.

occupancy**.** Commuter Rail and Light Rail would have about the same 11% occupancy, at 12.8 and 8.6 average passengers per vehicle. All are extraordinarily low by transit industry national standards. Wake County deserves better transit utilization than 11%.

- **The cost per rail rider trip is extraordinarily high, $92 (FY10 dollars) for commuter rail and $33 for light rail, respectively –** or $47,000 and $16,900 per year, respectively, for each five-day a week, 52-week a year, home-to-work and back user[3]**.**
- **The total cost per rider and per passenger-mile is very high.** For the entire Plan period through FY40, the total expenditure per rider is $16.13 (FY10 dollars), which is 368% of the present $4.38 for the existing four operators. Per passenger-mile, the expenditures of the proposed new service are $2.73, 337% of the current $.81. (Transit industry national averages for 2010 were $5.19 and $.98[4], respectively.)
- **The proposed added transit service is unlikely to prove attractive to potential riders.** In our analysis of the seven "choose how you move" vignettes in the Plan, which show how current drive-only trips could be made via various types of transit if the Plan is approved and the services implemented, the transit travel times are remarkably non-competitive with driving. The overall average transit trip time was well over double that of the drive time for the same trip. Given that most of the current Wake County transit riders do not have access to automobiles for their transit trips, while the service expansion is primarily to areas where there is now little or no transit – and the vast majority of people in these areas ***do*** have access to automobiles – it is difficult to see why most people would give transit serious consideration in the new service areas.
- **Impacts are not quantified.** The Plan contains no supportable discussion of what the impact of a doubling of transit service would actually be. Its statements concerning impacts on congestion, air quality, travel time, energy, and jobs are unfounded. Most construction items are made elsewhere, construction jobs are short-lived, and taxes would slow local economic activity.
- **The proposed Commuter Rail and Light Rail services are inappropriate** for a region of this size and density. The region's density is lower than all but three of the 34 regions now operating rail transit service.
- **The Plan contains no tie to the region's long-range transportation plans,** which propose different modes and locations for transit service.

Revenue forecasts are over-estimated in some cases, under-stated in others.

- The Plan contains **optimistic population, vehicle registration and employment growth assumptions.** Employment growth for the Raleigh Central Business

[3] Note that there is a long standing metric for proposed new fixed guideway transit projects of cost per ***new*** rider, which was instituted by the Federal government many decades ago in recognition that many riders of new fixed guideway systems are former transit users who are just switching to a new mode of transit. As the Plan contains no information regarding ridership, we have no way of determining cost per new rider, so these are cost per ***total*** riders. In general, for these types of new fixed guideway transit systems, it is rare for the new riders to approach 50% of total riders.

[4] Authors' calculations from national transit database, www.ntdprogram.gov "Operating Expense," "Capital Uses," and "Service" tables.

District (CBD) would *quintuple* present employment, equivalent to adding 2-3 Wal-Marts of office space there *every year*. Forecasts of local revenue are overly optimistic.

- **The Plan misses over $ 500 million of potential *current* federal funding.**
- The Plan's **assumptions regarding future Federal and State funding are unrealistic**. In particular, assumptions about light rail funding are too optimistic.
- **The Plan only briefly discusses other revenue sources.** Transit bonds, rental cars, State funds and rider fares are only briefly discussed.

Development and operational costs are under-estimated

- **The Plan misses the need for 'spare' vehicles** and hence under-states its vehicle requirement by 20%.
- **Proposed timing of service startup is very optimistic**. The proposed expanded bus service cannot begin five months after the proposed November 2012 election and it more will more likely take more than two additional years before the first new service begins.
- **Vehicle size (40 seats) is too large** for the anticipated ridership, leaving most capacity unused.
- **Proposed Commuter Rail and Light Rail travel times for service are too optimistic** given station spacing and track alignments in comparison with existing operators.
- The Plan implies a **large increase in vehicle per-mile operating costs**. The Plan also fails to use industry standards for incremental service, which are typically only 60-70% of base service costs.
- The Plan implies a **large fare increase, about 54%,** for riders of the added bus service, which would have to be matched for current service riders.
- The Plan is **missing additional costs for ADA**-related demand-responsive service.
- The Plan is **'infrastructure heavy'**, initially spending significant funds for bus terminals and other infrastructure.

Equity, Fairness and Cooperation

- The Plan implies a **large cross-subsidy** of taxes from suburban towns to Raleigh.
- The Plan has **no discussion of permission from NCRR, CSX or NS** to use tracks.
- **The Plan has no treatment of the cost of money** (The Federal government mandates a 7% discount rate), which, if included, would lower the buying power of future revenue.
- The Plan contains **no consideration of service integration or privatization.**

In short, the Plan is a 'revenue and spending' plan for expanded service, not a transit plan.

Our review does not propose alternative approaches, which are beyond our scope. However, we recommend that the Plan be appropriately revised, including but not limited to:

- At a minimum, **the Plan should be re-done by an independent group** familiar with the transit industry and transit service in Wake Co. Obviously, unrealistic assumptions and computational errors must be corrected. As it presently exists, the Plan has a disturbing large number of errors of commission and omission of all types, from minor to huge that brings its accuracy into question.
- **The Plan *must* be placed in the context of regional transportation needs,** particularly the needs of the 90% of the region's population who are primarily auto users.
- The Plan should also be re-focused on the **needs of *transit-dependent* citizens.**
- Significant **opportunities to hold down costs,** through such actions as smaller vehicles, privatization, competitive bidding, and service integration should be fully explored.

It is hoped that this review will contribute to open and objective discussion of the Plan in Wake County. This review was funded by the John Locke Foundation. However, the authors have no other contractual or other relationships with any Wake County organizations.