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November 12, 2009

North Area Transit Alliance
C/O City of Thornton
9500 Civic Center Drive,
Thornton, Colorado 80229

Re: RTD Cost and Revenue Forecasts

Dear NATA Representative:

This letter report is in response to your request for BBC Research & Consulting's evaluation of the Urban Engineers, Inc and First Southwest Company's critique of the Regional Transit District's (RTD) sales tax projections and for our comments regarding the broader viability of the 2009 FasTracks Financial Plan.

Background

In 2004, the Regional Transit District (RTD) established the initial budget and financial projections for the FastTracks project based on a voter approved plan and capital budget of \$4.7 billion dollars. The project anticipated 18 miles of bus rapid transit, 28 miles of light rail and 94 miles of commuter rail to be developed on multiple corridors within the Denver Metropolitan Area during the period 2005 to 2017. RTD updates cost and revenue forecasts through an Annual Program Evaluation process (APE). The most recent reevaluation (FasTracks Financial Plan, April 2009) estimated that system costs had risen to \$7.0 billion.

Construction funding for FasTracks comes from a metro wide sales and use tax (0.4%); anticipated Federal support; leasing of certain operating and development rights (the Public Private Partnership), and fare box revenues. Considerable debt financing is anticipated, supported by sales and use tax revenues.

Since FastTracks inception, estimated costs have exceeded forecasts and sales and tax revenues have failed to meet expectations. RTD's 2009 FastTracks Development Plan (the Plan) suggests that a doubling of the current sales tax rate, which in combination with potential Public Private Partnership (P3) revenue and Federal support, would allow completion of metro wide transit system by 2017.

The Colorado Legislature requires that the Metropolitan Planning Organization (the Denver Regional Council of Governments -- DRCOG) approve the financing plan and the technology of the FasTracks project. In keeping with this fiduciary obligation, DRCOG retained Urban Engineers and First Southwest Company (U&SW) to review RTD's Financial Plan. U&SW's findings were published in August 2009 and are the principal subject of this review¹.

Study Objectives

The City of Thornton, in association with a consortium of Denver metropolitan area communities, acting as the North Area Transit Alliance (the Alliance), has expressed concerns about the financial feasibility of RTD's 2009 FasTracks Development Plan (the Plan) and its potential service implications for north metro area communities.

In this context, the Alliance wishes to better understand the performance risks underlying RTD's financing strategies, communicate the consequences of financing plan failure, and ensure that RTD follows through with its prior commitment to financial forecasting and communications reform. The validity of RTD's sales tax projections is of particular interest. In response, this analysis, which draws largely upon the U&SW Assessment (August 2009) and associated RTD/DRCOG documents, provides a review of forecasting methodological and offers conclusions and recommendations regarding the viability of the current financing plan. The Alliance's sponsorship of this assessment has been spurred in part by RTD's commitment to rework its FasTracks financial forecasts by the end of this year.

This analysis does not, and was not intended, to provide yet another forecast of RTD revenues or suggest a specific new forecasting methodology. Our principal goal was to review the U&SW analysis and offer recommendations as to how RTD might improve its projections and its communications of FasTracks financial feasibility. We understand that other groups in the community will be suggesting specific methodological improvement to RTD's financial forecasting approach and that RTD has already indicated that its forthcoming financial revisions will be "more conservative."

Urban Engineers and First Southwest Company Report

The U&SW report was prepared under contract to DRCOG in compliance with that organization's fiduciary obligation to assess and approve the technology and financial adequacy of the FasTracks program. It is a thorough analysis of RTD's 2009 FasTracks Financial Plan and offers a number of conclusions and recommendations for program improvements. It is, in part, quite critical of RTD's forecasting efforts, although a tendency to use vague language relating to "cost derivations;" or future revenues that "are not fully realized," or are "advanced at a lesser degree than currently projected in the Plan," tends to dull any sense of sharp disagreement or significant issues. The U&SW Executive Summary in particular, in our view, fails to capture the sharper criticisms in full body of the report.

Some specific U&SW comments are noted below. These are illustrative of some of U&SW's comments and suggests specific points where we would expect RTD's response in the forthcoming round of forecasts.

¹ Urban Engineers, Inc. in Association with First Southwest Company, *Assessment of Denver Regional Transportation District, 2009 FasTracks Financial Plan*, Final Report; August 2009.

Capital Cost Projections

In general, the U&SW report expresses satisfaction with RTD's most recent cost projection methodology and attendant results, although U&SW very specifically recommends a number of categories where contingency costs or escalation rates are missing or inadequate. Key points under categories of unit costs, contingencies, escalation rates and sensitivity analyses are set forth below.

Unit costs. U&SW reviewed unit costs of construction, vehicles, engineering and design costs, construction management, insurance, and right of way/property acquisition costs, and generally concluded that cost estimates were reasonable or conservative, but changes were merited. Specific recommendations include:

- *“RTD used a 15% markup on direct cost to account for contractor’s profit. The application of 15% for contractor’s profit may be reasonable in the current construction market; however, in a more competitive market 15% would be considered a minimum.” (Page 8)*
- Regarding vehicle costs: *“Urban believes that RTD should ...contemplate adding a relatively small level of contingency (suggest 10-15%) as a result of the limited number of worldwide railcar manufacturers....”(Page 10)*
- Regarding right of way/property acquisitions: *“Urban suggests that in addition to utilizing General Certified Appraisers, RTD should consider consulting with an independent appraisal expert, who is familiar with FTA right-of-way acquisition procedures and add a small amount of contingency.” (Page 11)*

Contingencies. RTD uses a 25 percent unallocated contingency on the construction costs for the corridor estimates, but in some cases other line items had no contingency applied. Specific recommendations/findings include:

- *“Urban is concerned that the 25% contingency rate may be too low for the design stage of most of the corridors.” (Page 12)* Several broad-based studies have been conducted on projects suggesting appropriate contingency levels should be between 30-45 percent.
- *“Urban also believes that some level of contingencies should be applied to costs for Design, Construction Management/Inspection, Insurance and Property acquisitions.” (Page 11)*

Escalation rates. RTD has used lower than average escalation rates for construction and labor costs in 2009-2011. In 2012-2017, RTD assumes annual escalation rates of 5 percent for construction costs and 3.3 percent for labor costs, resulting in a weighted average escalation rate of 4.32 percent. In addition, RTD assumes an escalation rate of 3.3 percent per year for vehicle purchases with lower rates in 2010 and 2011.

- *“The lower escalated rate provisions for 2009 appear to be consistent with the current downturn in many materials and construction markets.” (Page 13)*
- *“...Urban recommends using a higher, more conservative rate of material escalation for year 2010 and 2011...this would add roughly \$40 million” to projected capital costs.” (Page 13-14)*

- Regarding vehicle escalation rates: *“Urban feels that these rates may be insufficient to capture the potential increases in the EMU market...it would be reasonable to increase escalation rates for the remaining EMU purchases.” (Page 14)*

Sensitivity analysis. No sensitivity analysis has been conducted on the capital cost estimate.

- *“The construction market in general and the materials markets in specific have exhibited extreme volatility over the past five years.” (Page 16)*
- *“Urban believes that it would be prudent for RTD to engage in a more in-depth review of the parameters which will be drivers of large cost changes.” (Page 43)*

One presumes that each of these and the other concerns expressed by U&SW will be clearly and directly addressed in the forthcoming revised capital costs forecasts.

Operating Costs

Similar, suggestions for methodological reform are offered in the review of operations costs. Issues are presented as observations and/or questions and rarely conclude with direct recommendations for changes. Selected quotations illustrate specific instances where U&SW opined on operating cost model forecast assumptions.

- *“Commuter rail operating costs are based on hourly rates for LRT operators...Because of the higher degree of training and certification typically required for commuter rail operators and competition for such employees...higher pay scales may be necessary to attract adequate staff.” (Page 17)*
- Energy costs are estimated at 15-17 percent of operations costs. *“Given the current issues of oil depletion and global warming and proposed measures to deal with them, energy costs may be significantly higher in the future.” (Page 17)*
- *“Urban ... expresses some reservation relative to the enhanced operating costs that might result from service interruptions or interference with having to share ROWs with freight railroad operators.” (Page 43)*
- *“For new and added service lines, Urban believes it would be prudent for RTD to consider adding some level of contingency” to current operating cost estimates. (Page 44)*

Revenue Projections

U&SW express stronger concerns over RTD’s revenue projections than its cost forecasts, noting in general: *“there remains significant risk in other large sources (of revenue) not being fully realized or being advanced at a lesser degree than currently projected...” (Page 44)*

Sales and use taxes. U&SW spends a large share of its review on RTD’s sales tax projections. The report notes that all forecasts are based on extrapolation of historic trends and by comparisons with other local projections, such as those produced by the Colorado Legislative Council. In fact, according to RTD, long term FasTracks sales forecasts are not directly based on extrapolations from

prior years, but rely on DRCOG population growth projections and forecasts of the Consumer Price Index changes as a measure of inflation.

After stabilization in the 4th quarter of 2009, and a strong 2010 and 2011, RTD's revenue projections assume an average annual growth rate of between 4.8 and 5.0 percent per year growth in sales and use tax revenue from 2021 through 2035 (Page 23 and 26 and *Tax Forecasting Methodology*, Oct. 29, 2009 presentation materials). U&SW compares these forecasts favorably with historical trends and notes that the Denver area experienced very robust growth over portions of the last 20-year period. If one were to simply choose the experience of the last ten years, also a reasonable historic framework, the average annual growth rate would be less than one-half the adopted rate (2.3% versus 5.0%).

Ultimately, U&SW argues for a more moderate forecasting assumptions:

- *“The 5% average annual growth assumption for the forecast period 2011-2024 appears optimistic given tax collection performance over the last 10 years, which has averaged only 2.3% since 1999.” (Page 23)*
- *“The financing of the FasTracks program is heavily dependent upon the strength of the local economy and its collections of sales and use taxes.” (Page 24)*
- *“The (sales tax) forecast does not assume the region will experience another economic downturn for the forecast period 2011-2024...” (Page 25)*

The RTD revenue forecast also assumes the successful passage of a 0.4% increase in the FasTracks dedicated sales and use tax in 2010, from the existing rate of 0.4 percent to 0.8 percent. The report notes that *“if RTD elects not to advance the tax measure in 2010, or if the tax increase fails to receive voter approval... the budget will face a \$2.2 billion shortfall that will have to be remedied by other solutions.” (Page 44)* No other remedies are suggested.

BBC agrees that repetition of historical growth rates, particularly in this instance when American household spending was demonstrably exceeding sustainable levels, is an unreasonable expectation. The RTD forecasts assume a return of retail sales growth in 2010 and continually steady growth averaging about 5.0% thereafter for next 14 years. This annual compound rate of growth mirrors the region's past 20-year pattern, which in our view, should be seen as a highly optimistic expectation of future activity. Historical data for the past ten years, which incorporates the most recent downturn, show annual growth rates of 2.3% per year, and perhaps offers a lower boundary of future performance.

A reasoned forecast of projected sales tax revenues is a necessary component of RTD's planning. This forecast would be made more authoritative, if it was based on clearly stated expectations about how the future might mirror—as well as differ from—past experience. An improved forecast would likely include a comment on expected national economic growth, the impacts of an aging population, the prospects for diminished household retail spending in light of other consumer demands (healthcare, services, energy, etc) and the growing role of the Internet as a non-taxable shopping alternative. One might not expect precise quantification of all these correlative factors, but an expression of some reasoning as to how these historic growth rates might be sustained or changed in the future seems a basic requirement of any forecasting system.

It should be noted again that RTD has agreed that its growth projections remain too optimistic and that new projections due by the end of the year will reflect more conservative assumptions. It should also be noted that an informal group of state and municipal financial directors and local economists are in the process of suggesting forecasting reform.

Federal funding. RTD assumes \$1.3 billion in funding from the FTA's New Starts Program. Three of the FasTracks lines have been approved for FTA New Starts funding totaling \$309 million. The remaining \$1 billion in hoped for New Starts funding is being pursued by RTD. Federal grants and loans account for about 23.5 percent of total capital funding and are uncertain as the current multiyear transportation-funding bill expires at the end of 2009.

- *“...the expected receipt of New Starts [Grant] funding included in the financial plan is ambitious and dependent on an overall increase in transit funding in the next [federal] reauthorization bill and/or increased success of RTD obtaining such funds.” (Page 31)*
- *“The Financial Plan indicates that failure to obtain the New Starts funding in and of itself, would not affect the planned 2017 completion schedule, (but) it would present major issues for debt financing that would alter repayment terms and extend the sunset provisions of the anticipated Sales and Use Tax Increase.” (Page 44)*

Although the uncertainty of this funding source is certainly noted, the consequences of its failure to materialize are not specifically called out.

Public-private partnership, “P3”. RTD's current financing plan assumes \$898 million from the P3 plan, an increase from last year's projection of \$547 million. RTD has short-listed three P3 teams as of December, with final award to the preferred bidder targeted for September 2010. U&SW notes that the P3 funding plan “remains somewhat risky,” and that the “projections for resultant funds is even less reliable” at such an early stage in the process {i.e. currently} for contracting with a P3 concessionaire (Page 44). Other findings regarding P3 include:

- *“RTD is now targeting receipt of financial bids in mid-2010, only several months prior to the contemplated November 2010 ballot issue on an additional 0.4 sales tax levy for the FasTracks program. It will be important for RTD to demonstrate to P3 bidders how it can afford the proposed availability payments for the P3 components if the additional sales tax referendum is not passes.” (Page 33)*
- *“...RTD faces obstacles in reassuring vendors that it has adequate and dependable sources to make availability payments and to not force the vendor to absorb the entire front-ended capital cost.” (Page 44)*

Again, in the same manner as federal funding, the uncertainty of this P3 source is noted, although the consequences of its failure to materialize are not specifically called out.

Financing Plan Assessment

The US&W analysis also evaluates FasTracks' overall financing package. RTD anticipates issuing over \$2.4 billion in debt financing to fund a portion of the FasTracks capital costs. The plan assumes receipt of a \$308 million Transportation Infrastructure Finance and Innovation Act (TIFIA) loan.

In general, U&SW are comfortable with the proposed financing plan and, other than the risk attendant to each element of revenue supporting this plan the financing approach is thought to be appropriate and reasonable. The issue lays with the uncertainty of the federal funding and the sales tax receipts necessary to support the plan. U&SW comments include the following:

- *“To date, RTD has issued \$600 million in sales tax revenue-backed bonds for the FasTracks program. The borrowing costs for the planned RTD...issuances in 2011 and 2013 (totaling \$1.78 billion) are uncertain.” The current RTD plan assumes a True Interest Cost (TIC) of 5.85 percent for the upcoming bonds. First Southwest believes that “RTD’s interest rate assumption appears reasonable.” (Page 37)*
- *“Receiving future TIFIA funding is expected to be extremely competitive...” (Page 32)*
- *“Similar to New Starts Grant funding, the future funding level of the TIFIA program in the next federal surface transportation reauthorization is unknown at this time.” (Page 32)*
- *“Given the FasTracks Plan’s regional significance and other factors, First Southwest is confident that RTD would qualify for TIFIA funding at some level.” (Page 37)*
- *“... While recognizing that confidently predicting the RTD’s future borrowing costs is impossible... First Southwest believes that the borrowing assumptions incorporated into the RTD Financial Plan are appropriate.” (Page 38)*

In response, BBC reiterates the same criticism as noted above. U&SW appears very comfortable with details of the financing plan, but feels little compunction to accurately portray the multiple layers of risk with each of these revenue streams and thus the compounding risk that none of this will ever come to pass.

BBC Observations & Recommendations

As requested we offer a few additional observations beyond the narrow details of the U&SW review.

The Issue of Cumulative Risk

In our view, the most notable shortcoming of the U&SW critique is its reluctance to raise and comment on the cumulative risk in RTD’s multiple sources of revenue, and RTD’s failure to address the practical implications of possible revenue shortfalls.

The U&SW authors, and their regional planning sponsors, take a very constrained view of their due diligence and fiduciary responsibilities. It is a notable shortcoming of this U&SW report that it fails to clearly document the cumulative risks stemming from the three sources of FasTracks revenue and the consequences for the most basic objectives of building the full FasTracks system.

U&SW notes the uncertainty in all revenue sources and clearly relates the risks associated with the Public Partnership and the various, as yet unfunded, Federal programs. Yet, in exercising its fiduciary role, U&SW, on behalf of its client, should have highlighted how this risk cumulates. In essence, saying that the sum of all risks is greater than its parts, and then suggest a means of better accommodating an uncertain future.

Arguing over the details of a forecasting methodology misses the more important issues with FasTracks financing: completion of the system relies on Federal funding from a program that isn't currently in place; from a public-private partnership that has never been accomplished on this scale anywhere in the United States; from an unlikely increase in sales tax rates to unprecedented levels, and from fare box revenue that is dependent on a fully functioning system. Lost in the details U&SW fails to highlight the obvious and then speak to the consequences.

Unfortunately, if one revenue source fails to meet expectations, others are jeopardized. If any part of the transit system is incomplete, other portions of the system are unlikely to meet ridership expectations. Reading the U&SW report, one is struck by the careful avoidance of the issue, and the real possibility that at least one major revenue source will fail to materialize as hoped for, or will perform significantly under expectations, and that the remainder of the financing system may then unravel. This interrelated risk includes other factors, such as the timely completion of Union Station and the staged completion of all segments of FasTracks, both of which are necessary components of system wide success.

Although it may be easy for an entity to be paralyzed by risk, and sometimes in any organization, it is necessary to overcome obstacles by staying the course; nevertheless, this seems an obvious endeavor where discussing a Plan B and analyzing the outcomes of revenue shortfalls (and/or cost inflation) would be beneficial for all involved. There appears to be a surprising and unsettling resistance to analyzing options, prioritizing needs and offering alternatives.

The Issue of Inequitable Risk Burden

The U&SW report correctly notes the high level of risk in each element of FasTracks funding, but fails to note that the public participants in this project do not share this risk equally.

Under the current FasTracks Plan, those communities that are likely to be the final corridor investments, or one of the last few investments, carry all the accumulated risk and a reasonable probability of not seeing return from their tax contributions. This may be a necessary condition of building a complex and ambitious rail system, but ignoring this service disparity, or at least, not directly acknowledging this problem, isn't a reasonable solution. There is very legitimate concern, particularly among the northern tier communities, that FasTracks may again fail to meet its full revenue and system development objectives. The consequences of that prospective failure fall almost entirely upon the citizens and property owners of the northern metropolitan area.

In this climate of unprecedented uncertainty, we would suggest that DRCOG accept a broader definition of its fiduciary responsibilities, insisting on ranges of sales tax projections, continually monitor and reporting system costs and revenues, particularly sales tax flows; and most importantly, communicate how and when system development plans will be altered if Federal or sales tax revenues falter, costs exceed expectations, or the system underperforms in ridership and fare box revenue.

The Issue of Continual Over Estimation of Sales Tax Forecasts

Growth rates for future Denver area retail sales are uncertain and perhaps more difficult to forecast than in any time in memory. No amount of methodological refinement or forecasting sophistication will change this situation.

All forecasts begin with some interpretation of historical trends and some form of extrapolation from those trends to the future. Reasonable observers can disagree about how best to accomplish projections. In this instance, patterns of retail spending for the past 20 years, when American spending was demonstrably exceeding sustainable levels, is likely a high side of future expectations. The RTD forecasts assume a return of retail sales growth in 2010 and continually steady growth averaging about 5.0% thereafter for next 14 years. This annual compound rate of growth mirrors the region's past 20-year pattern and should, in our view, be seen as a highly optimistic expectation of future activity. Historical data for the past ten years, which incorporates the most recent downturn, suggests annual growth rates of 2.3% per year, which perhaps suggests a lower boundary of future performance.

A reasoned, well-documented and thoughtful forecast of project cost and sales tax revenues is a necessary, but not sufficient, answer to the problem of high uncertainty. When critical variables of a business plan are uncertain, it is, in our view, appropriate to provide a range of alternative future projections, or an expression of probabilities, and describe how the venture in question will be modified in response to these prospective future conditions.

In this economic environment, the Denver area community would benefit from being provided:

- A band or range of sales tax forecasts;
- A system for monitoring and reporting economic factors that correlate with sales tax flows;
- A presentation of monthly RTD sales tax performance in the context of this range with an analysis of trends; and most importantly:
- A clear set of future investment prioritizations describing how the organization plans to proceed if the bounds of these forecasts were ever tested.

Simply stated, and now repeatedly stated by others, RTD needs to contemplate and discuss Plan B, and perhaps Plan C and Plan D. If revenues fall short, or costs rise, what's the plan? At what point will it be triggered?

U&SW tends to make passive recommendation, giving the appearance that some of these are optional or of little consequence. It would be helpful if RTD combed through the capital and costs sections of the U&SW report, listed all the recommendations and then provided evidence of their acceptance or rejection for the next round of forecasting. We assume that RTD will accept the operating and capital cost forecasting recommendations put forth by U&SW, which are primarily the use of additional contingencies and modest modifications to the cost forecasting approach.

We appreciate the opportunity to review these materials and offer our observations.

Sincerely,

A handwritten signature in black ink that reads "Ford C. Frick". The signature is written in a cursive, flowing style.

Ford C. Frick
Managing Director