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**Assessment of
Denver Regional Transit District
2011 FasTracks Financial Plan**

Final Report

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in association with

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APPENDIX A

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Key Terms

ADA – Americans with Disabilities Act
AGC – Association of General Contractors of America
APE - RTD’s Annual Performance Evaluation
ARRA – American Recovery and Reinvestment Act
BNSF – Burlington Northern –Santa Fe Railroad
BRT – Bus Rapid Transit
CAFR - Comprehensive Annual Financial Report
CEM – Cost Estimate Methodology
CIP – Capital Improvement Plan
CPI – Consumer Price Index
CRMF – Commuter Rail Maintenance Facility
DIA – Denver International Airport
DISTRICT – Regional Transportation District of Denver, Colorado
DMU – Diesel Multiple Unit (Commuter Railcar)
DBFOM – Design-Build-Finance-Operate-Maintain
DRCOG – Denver Regional Council of Governments
DSCR – Debt Service Coverage Rate
DTP – Denver Transit Partners, the P3 concessionaire for the Eagle Project
DUS – Denver Union Station
DUSPA – Denver Union Station Project Authority
EAGLE PROJECT – Collective term given to RTD FasTracks Commuter Rail network that is under contract as a P3 initiative with the Concessionaire, Denver Transit Partners
EMU – Electric Multiple Unit (Commuter Railcar)
FFGA - Full Funding Grant Agreement
FINANCIAL PLAN – The Regional Transportation District’s (RTD’s) Draft Summary for the FasTracks 2011 Financial Plan dated March 23, 2011
FRA – Federal Railroad Administration
FTA – Federal Transit Administration
GARVEE – Grant Application Revenue Vehicle Bond
GDP – Gross Domestic Product
GMP – Guaranteed Maximum Price
HOV – High Occupancy Vehicle
JPA – Jeffrey A. Parker & Associates, Inc.
LOI - Letters of Interest
LRT – Light Rail Transit
MPO – Metropolitan Planning Organization
OCIP – Owner Controlled Insurance Program
O&M – Operations and Maintenance
OSPB – Office of State Planning and Budgeting
P3 or PPP – Public Private Partnership
PE – Preliminary Engineering
PENTA-P – The Federal Transit Administration’s Public Private Partnership Pilot Program
PLAN – RTD’s Draft Summary of the 2011 FasTracks Financial Plan
PPI - Producer Price Index

RFP – Request for Proposal
RFQ – Request for Quotation
ROW – Right of Way
RTD or the District – Regional Transportation District of Denver, Colorado
S&P – Standard & Poor’s
SAFETEA-LU – Safe, Accountable, and Flexible Efficient Transportation Equity Act: A legacy for users signed into law on 8/1005
STATE – State of Colorado
TABOR - Taxpayer’s Bill of Rights; a set of voter approved constitutional provisions in 1992 to limit revenue growth for state and local governments in Colorado and to require that any tax increase be approved by the voters of the affected government
TDP – Transit Development Plan
TIC – True Interest Cost
TCRP – Transit Cooperative Research Program
TIFIA – Transportation Infrastructure Finance and Innovation Act of 1988
T-REX – Denver’s Southeast Corridor Light Rail Transit
UPRR – Union Pacific Railroad
URBAN – Urban Engineers, Inc.
USDOT – United States Department of Transportation

I. INTRODUCTION

Colorado Senate Bill 90-208, passed by the Colorado legislature in 1990 requires that a Metropolitan Planning Organization (“MPO”) approve the financing and technology for all fixed guideway projects. The Denver Regional Council of Governments (“DRCOG”) acts as the designated MPO for the FasTracks project and is responsible for the operation and maintenance of a continuing, comprehensive transportation planning process, including the preparation and adoption of transportation plans and programs. The Regional Transportation District (“RTD”) has developed the FasTracks Plan, which provides a comprehensive, region-wide plan for transit development in the greater metropolitan Denver area and has assumed the ownership role for this highly complex program. As part of DRCOG’s responsibility to continually assess and evaluate the FasTracks project, DRCOG contracted with Urban Engineers, Inc. (in association with Jeffrey A. Parker & Associates, Inc.) to provide an independent and objective Assessment of RTD’s 2011 Financial Plan.

On April 26, 2011, RTD’s Board approved the 2011 FasTracks Financial Plan. The Plan approved by the Board deferred the Sales and Use Tax Initiative to approve an increase in the FasTracks-dedicated Sales & Use Tax of 0.4% to 2012 or later. The effect of this decision is that the 2011 FasTracks Financial Plan approved by the RTD Board differs slightly from the Draft Plan assessed by Urban and JPA that forms the basis for this assessment report. The primary difference is that the build-out for the entire FasTracks program changed from 2019 to 2020, since the effective date of an approved increase in Sales & Use Tax would now be January 2013. Urban and JPA have not reviewed the RTD Board-approved Financial Plan for 2011, but have been assured that most assumptions and data supporting the draft Plan reviewed have not changed. DRCOG will, separately, review and opine on any differences between the draft Financial Plan reviewed by Urban and JPA and the RTD Board-approved Financial Plan.

The original budget and plan for FasTracks, established in 2004, totaled \$4.7 billion and called for 28 miles of light rail, 94 miles of commuter rail and 18 miles of bus rapid transit improvements to be developed between 2005 and 2017. On an annual basis, through the Annual Program Evaluation (“APE”) process, RTD updates the FasTracks Financial Plan with new revenue and cost projections, reflecting the most up-to-date economic conditions and technical advancements. The current 2011 APE Financial Plan extends to the year 2035, and covers both the FasTracks program and the base public transit system and services provided by RTD. As part of the current assessment, Urban Engineers, Inc. (“Urban”) and Jeffrey A. Parker & Associates, Inc. (“JPA”) reviewed a draft summary and supporting documentation of RTD’s 2011 Financial Plan, dated March 23, 2011, which provides a revision to the FasTracks budget resulting in a current estimated cost of approximately \$6.7 billion. This figure is relatively the same budget as represented in RTD’s 2010 Financial Plan, although some of the specific cost and revenue estimates within the Plan have changed. According to the draft Summary for the 2011 Financial Plan, RTD’s “...ability to implement the FasTracks plan depends on a variety of financial assumptions and projections which have been developed using the best available estimates of costs, reasonably anticipated federal funding based on current federal law and regulations, and revenues from other sources including RTD sales tax and fare collections. Over the anticipated remaining build-out period through 2019, specific cost items, federal and other contributions, and RTD revenues may vary from this financial plan. Based on the extensive analysis behind the financial assumptions used, RTD expects to deliver the major transit

corridors and related improvements within the time frames set forth herein". It should be noted that the current schedule indicates a two-year delay from the original FasTracks schedule (Plan) which had proposed a full program completion date in 2017. Also, RTD has recognized that a funding gap exists over the last few years which needs to be remedied in order to maintain the project schedule and conceptual plans for FasTracks. As such, the 2011 Financial Plan "...assumes the passage of a 0.4% Sales and Use Tax increase commencing in January 2012. This scenario results in the completion of the full FasTracks program by 2019, assuming current cost escalation and revenue growth forecasts. Should the Board choose not to seek a tax increase, or if a tax increase initiative is not approved by the voters, a revised, updated Financial Plan would be adopted by the Board at that time, recognizing the new opportunities and constraints that would exist". Lastly, RTD states that it, "...cannot guarantee that each separate assumption will be met, and expects that certain adjustments and modifications will be required prior to the expected completion date of 2019".

As part of the contractual engagement, Urban and JPA met with representatives from DRCOG and RTD and reviewed many documents provided by RTD in support of the assumptions and projections which formed the basis for the current Financial Plan. A list of documentation reviewed is presented as Appendix A to this report.

The contracted Scope of Services called for Urban and JPA to review RTD's Core Financial Assumptions that formed the basis for the Financial Plan, and to analyze and opine on a host of questions within five subsections, titled:

1. Capital Cost Estimates
2. Operating Cost Estimates
3. Revenue Estimates
4. Financing
5. Summary Assessment of Overall Financial Plan

This report is formatted to present an analysis and assessment of each of these subsections, with the final Summary Assessment providing a more consolidated review of the overall 2011 Financial Plan.

II. EXECUTIVE SUMMARY

A. Capital Costs

The construction item unit costs and estimating methodology for construction costs incorporated in the 2011 FasTracks Financial Plan exhibit a very high level of detail primarily the result of the overall project, as well as all individual corridors surpassing the 30% rate of design during 2010. The construction cost estimates are based on a combination of actual contracts awarded to date with a reasonable provision for potential cost increases (unanticipated changes or amendments to existing contracts), and the use of Bottom Up estimates for corridors still in design. For the first time in the evolution of the FasTracks program, RTD was able to use Bottom Up estimating exclusively for un-contracted corridors in 2011, which generally yields a higher level of confidence in budgeting since a higher degree of definition (i.e. units measurements, productivity rates, and labor/material/equipment rates) is used.

As in past years, RTD relied predominantly on an independent report on the cost estimates for commuter railcar (Electric Multiple Unit – “EMU” and Diesel Multiple Unit – “DMU”) procurements. While Urban did not review the model in depth due to it being the same as used in prior years’ reports, the assumptions are considered appropriate and reasonable for estimating rail vehicle costs as it is generally based upon accepted industry practices.

RTD continues to successfully advance the acquisition of land and easements required to support the FasTracks program. While RTD must still memorialize an Operating Agreement (e.g. Memorandum of Understanding or “MOU”) with the freight railroad, Burlington Northern Sante Fe (BNSF), other agreements with BNSF have already been put in place and all indications are that the Operating Agreement will be reached shortly. This will represent a major achievement as traditionally agreements with freight railroad providers on land usage and operating agreements have proved troublesome in other parts of the country. RTD was unable to provide a detailed list of the status of remaining acquisitions, although it was represented that significant progress has been made. Although RTD’s history of ROW acquisitions related to the FasTracks program has proved successful (real costs ~ internal estimates), Urban has found that often the last properties to be acquired tend to be more difficult and costly. As such, Urban still considers ROW costs and the potential for schedule impacts to be an element of risk to the overall program that requires continued diligence.

Urban believes that the FasTracks program is applying a sufficient and somewhat conservative level of unallocated contingency (SCC 090) at this stage of project development, currently at 25% of estimated construction costs for corridors yet to be bid. However, RTD’s methodology for calculating allocated contingency within their Bottom Up estimates is questioned. RTD’s means for basing estimates on historical productivity rates appears to represent more in the way of a base cost estimate factor, predicated on historical data, rather than an allocated level of contingency. Urban recommends that RTD re-visit this methodology in future years. The effect of this terminology is not perceived as significant at

this level of design and project development, particularly in light of RTD's relatively conservative unallocated contingency provision.

In 2009, as a result of concerns over the volatility of price increases and inflationary-events that are often unforeseen and difficult to predict, RTD assembled a panel of regional engineers and transit financial experts for a Construction Inflation Workshop. The panel's work was well received and added a level of confidence to projections that had previously been lacking. In November 2010, this group of regional and national experts was reconvened to once again evaluate the appropriate inflation factors for RTD to incorporate into the 2011 FasTracks Financial Plan. During the Workshop, the panel was briefed and opined on RTD's overall estimating methodology and found it to be reasonable. From the Workshop, it was agreed that the material cost escalation for the years 2012 to 2019 should average 5% per annum and labor should be escalated at 3% per annum during the same period. All agreed that this is a relatively conservative approach, but provides RTD some level of assurance to protect against unforeseen, but probable commodity or economic spikes. While Urban continues to have concerns over sudden commodity price spikes and their effect in any particular year, especially during the planned FasTracks construction period (through 2019), RTD's average rates and estimating methodologies appear conservative and reasonably acceptable.

As stated in past year's assessments, although RTD's facilitation of Construction Inflation Workshops is a worthwhile and proactive method of providing an added level of reliability to labor and material price forecasts, Urban believes that RTD would be well served to expand the use of sensitivity analysis to manage variables out of RTD's control that could lead to sudden spikes, requiring urgent management decisions to mitigate.

B. Operating Costs

As in past years, RTD's operating and maintenance (O&M) cost projections for the base system are based largely on accurate historical data that has been extrapolated into the future using reasonable escalation factors. As expressed in prior year's reports, some degree of variability in projecting O&M costs is inevitable as many economic, demographic, and financial variables that factor into projections are subject to volatile and unpredictable fluctuation. These factors greatly influence operating expenses for a transportation agency.

For the new and added rail lines, RTD's O&M projections are primarily based on best assumptions and comparable data from similar existing services (e.g. using existing RTD light rail operating costs for commuter rail projections) and industry benchmarked information. RTD's extrapolation of historical bus and light rail data for added service in these areas appears reasonable. For projections of new commuter rail operating and maintenance costs, RTD relied upon a report from an outside consultant, who based much of their forecast on extrapolated light rail service cost currently being realized by RTD. RTD's Financial Model also was able to incorporate better projections for O&M costs associated with the Eagle Line, now that the concessionaire's contract is in place. Although the service payment provisions contained in the DTP's contract provide a fixed and variable portion, there is much more predictability and confidence associated with the O&M projections for

the service to be provided by DTP, as compared to prior years, when all Eagle Line estimates were primarily parametric. As stated in previous years' reports, Urban believes that commuter rail operating and maintenance costs tend to run higher than comparable costs for light rail operations, particularly with regard to labor costs. Urban believes that RTD needs to review the Northwest Corridor plans and expectations for service, and associated O&M projections, as this sampled corridor was deemed lacking in a firm plan, and more-refined projections.

C. Revenues

RTD's 2011 FasTracks Financial Plan justifies sources of funds to enable the RTD to complete the project within the current estimated budget of \$6.75 billion and within the revised schedule of completion in 2019. As explained in previous years, while many of the revenue sources are fairly reliable and are predicated on already enacted and approved operating and funding measures, there remains substantial risk in other large sources not being fully realized or being advanced more slowly than currently projected in the Plan.

The major variable to the Financial Plan continues to be the anticipated voter approval of an added 0.4% Sales and Use Tax increase, dedicated to the FasTracks program, to become effective by January 2012 (note this date changed with the RTD Board's decision to defer the vote until 2012, after Urban/JPA's assessment was in process). As RTD continues to recognize, if RTD's Board elects to not seek the tax initiative or if the added tax is voted down in a public election, an updated Financial Plan will be necessary, recognizing the new opportunities and constraints at that time. In the event that the tax increase is not enacted, the FasTracks program would not be fully complete by 2019; RTD has actually indicated a 2042 completion date under this scenario. Further, absent such approval by the voters, there would be insufficient TABOR capacity to authorize the future financings contemplated.

Due to a substantial decline in Sales & Use Tax revenue in recent years, RTD convened a working group of regional economists and financial experts in late 2009 to modify the forecasts and methodologies for extrapolating Sales and Use Tax revenues into future years. Similar to the Construction Inflation Working Group, the Sales & Use Tax panel was very well received and added a degree of confidence to RTD's projections for Sales & Use Tax revenues, which is the predominant source supporting the FasTracks program. All financing instruments (including the Eagle Public-Private-Partnership) leverage Sales & Use Tax revenues, which also generate the major part of the pay-as-you-go funds used for capital improvements; in fact, three-quarters of the capital funding is backed or generated by these collections. RTD updated inputs to the forecasting model in October 2010, which generated the 4.28% future-year compounded annual growth rate used in the 2011 FasTracks Financial Plan. In order to address some concerns regarding the reasonableness of this long-term growth level, RTD has performed an analysis on sensitivity of the Financial Plan to a more modest 3.20% annual average growth rate in the Sales & Use Tax. The analysis demonstrated the ability of the Financial Plan to deliver the complete FasTracks project under the same schedule assumed under the baseline scenario, at the cost of reduced cash balances and increased borrowing in the outer years.

However, we continue to be concerned about the effect of any potential downward spike in Sales & Use Tax collections, similar to that experienced in 2008 and 2009. While RTD may realize the average rate of growth assumed, actual annual growth rates will fall short of the average in some years (e.g., during recessions) and thus potentially expose FasTracks to funding challenges. A sudden “economic shock” occurring during the construction period may alter RTD’s capacity to complete the system by 2019 as currently planned. RTD has indicated it would likely have to address such cash-flow shortfalls with measures such as a rescheduling of capital projects, reduced service levels, and/or debt restructuring. We would recommend that, in addition to reviewing the reasonableness of the baseline assumptions, greater attention be given to the likely mitigation and recovery measures that the rapid onset of adverse changes in the future could necessitate.

Local funding and federal grants are assumed to complete the capital funding plan. The Financial Plan places significant reliance on multiple sources of federal funding. RTD’s projections of federal funding may be reasonable based on recent history; the Financial Plan assumes funding from several long-standing programs that have grown over the years. However, in light of the current budgetary debate at the federal level, funding of surface transportation programs may well level off or decrease under a new authorization. RTD’s Financial Plan addresses this risk in that it reduced its forecasts of future earmarks, for example, and assumes no continuation of grants received in recent years from certain federal funding programs. The addition of \$75 million in Small Starts grants to this year’s Financial Plan, on the other hand, poses a new risk factor. In other areas where the Financial Plan forecasts rely on recent historical trends (e.g., escalation of federal formula funds consistent with inflation) rather than a potentially less generous future authorization (e.g., cuts to federal formula fund programs), there are mitigating factors (e.g., RTD’s forecasts of FTA block grants are conservative in that they exclude the increase in formula funds that future FasTracks corridors may generate).

Significant local funds include approximately \$131 million in monetary and in-kind contributions from local jurisdictions. The successful completion of negotiations of intergovernmental agreements securing these contributions is a condition precedent to advancement of the corridors into construction. Significant third-party contributions include approximately \$165 million corresponding to project costs incurred by the Denver Union Station Project Authority (DUSPA). Finally, forecasts of investment income on cash balances total approximately \$569 million. These forecasts assume a 1.5% annual earnings rate which may be aggressive in the short-term.

D. Financing

RTD’s 2010 Financial Plan adequately identifies and estimates reasonable provisions and assumptions for the cost and timing of debt issuances and repayment. However, most of the planned financing structure is based on collecting the forecasted amount of Sales & Use Tax revenues (including the assumed 0.4% increase). While baseline debt coverage ratios and cash balance levels provide some cushion and capacity to weather a reduced long-term growth in Sales & Use Tax receipts, cash-flow considerations are more sensitive and Sales & Use Tax revenue is more intensively leveraged in the short-term during the construction

period. As such, a sudden “economic shock” in the next decade similar to the one just experienced in 2008-2009 may require, among other available mitigation measures, a restructuring of the planned debt structure.

The P3 structure provides a means to finance a portion of the capital costs for the Eagle Project over a 34-year period, and also blends this financing responsibility into a long-term delivery contract with design, construction, operations, and maintenance responsibilities. Under this design-build-finance-operate-maintain (DBFOM) contract, the Concessionaire is responsible for delivering and operating the commuter rail services on a “fixed price” basis in exchange for construction milestone payments (totaling \$1.1 billion) and a 28-year stream of service payments (\$3.9 billion in total from the 2016 scheduled opening through 2044). However, as explained in detail in other sections of this report, the existence of cost and payment indexation provisions in the P3 contract related to certain construction elements as well as operations and maintenance responsibilities could increase the overall cost of the P3 contract. The P3 payments will be repaid from Sales & Use Tax revenue and comprise a capital repayment portion with TABOR authorization and an operating service portion subject to annual appropriation.

Compared to last year, the funding plan reflects a significant shift from pay-as-you-go capital to sales tax revenue-backed borrowing. The authorized amount of TABOR debt is currently insufficient to permit the additional borrowings contemplated in the Financial Plan. As such, additional authorization would be required from voters alongside the 0.4% Sales & Use Tax increase; at least \$513 million (a 15% increase over the current authorization) in debt principal and \$3.0 billion in debt service (a 41% increase).

E. Overall Financial Plan

The RTD’s 2011 FasTracks Financial Plan provides a detailed model in support of the current \$6.75 billion project. Unlike previous years, the assessment was somewhat affected by not having an RTD Board-approved Annual Program Evaluation or approved Financial Plan to review, since the determination of whether to take the Sales & Use Tax Initiative to the voters was not made until late April 2011, after Urban/JPA’s assessment had been primarily completed. However, RTD staff and their consultants provided large volumes of astute and verifiable data from a capital and operating cost standpoint. Similar to what was initiated the previous year, in 2010 RTD once again engaged peer working groups to evaluate risk issues such as those relating to Construction Inflation Indexes and Sales and Use Tax projections. Urban/JPA believes that RTD has sufficiently attempted to mitigate risk issues and that the budget is generally appropriate and reasonable.

The primary risk factors that continue to confront RTD lie in the realization of several large funding source assumptions. As adequately stated and supported in the Financial Plan, if the FasTracks-dedicated Sales and Use Tax increase fails to advance or receive voter approval, the completion of the entire FasTracks program by the planned date of 2019 is in jeopardy, and the Financial Plan would need to be revisited in its entirety. Although the risks that stemmed from the previous unknowns associated with the P3 Concessionaire’s agreement have largely been overcome, there continues to be risk associated with the approval and

attainment of Federal Small Starts funds. Urban/JPA continues to have concerns over the sensitivity of cost drivers (inflation factors out of RTD's control) and Sales & Use Tax revenues, as any large variation in expected uses or sources in a particular year or short-time period, would likely lead to RTD having to provide immediate mitigation measures that would require management approval (such as delayed program completion, service cuts and/or debt restructuring). A proactive measure would be for RTD to perform additional sensitivity analysis that evaluates short term "spikes" to anticipated cost drivers or sources of funds.

III. BASE FINANCIAL ASSUMPTIONS

The following synopsis provides excerpts from an internal document produced by RTD in support of the Core Financial Assumptions that formed the basis for the 2011 FasTracks Financial Plan. It should be noted that the italicized text is taken verbatim from RTD's Core Financial Assumption document that was used in supporting the 2011 FasTracks Financial Plan. These Core Financial Assumptions were presented to Urban/JPA at the onset of the Assessment. Since the Core Financial Assumptions represent a "snapshot in time", there are some inconsistencies with the information presented in the Core Assumptions versus what was produced by RTD as supporting documentation to Urban/JPA during the Assessment, with the latter representing more up-to-date information. As a result, certain references in the Core Assumptions may not coincide accurately with more up-to-date representations in subsequent sections of this report. We have attempted to identify these differences in this section of the report. Within each specific area reviewed, a brief overview of the Urban & JPA review and opinion on the core assumptions is provided.

Projected Capital Costs

- *The Plan includes six new multi-modal corridors and three corridor extension projects, which will be served through a combination of modes, i.e., light rail, commuter rail and bus rapid transit improvements. Significant expansions to the existing Southwest, Southeast, Central Platte Valley and Central corridors, parking enhancements and additional buses and LRV's for the current system will also be funded.*
- *The 2011 capital cost estimates were updated based on the most current available information on alignments, stations, facilities and planning/engineering progress. In addition, the costs reflect new unit rates based on current bid prices (metro area and nationally), and updated right-of-way (ROW) estimates where applicable. These new unit rates were used to prepare "bottoms up" (sic) cost estimates for all corridors. "Bottoms up" (sic) estimates were able to be prepared this year due to higher levels of design that are reflective of more advanced engineering.*
- *The key factors for the increases in capital costs over the plan approved by the voters in 2004 capital costs include: (1) material, labor and ROW escalation in which costs grew faster than the 2003-2008 Consumer Price Index (CPI) that was used as the FasTracks escalation factor; (2) changes with respect to stations and park-n-Rides; (3) changes resulting from negotiations with the railroads for right-of-way needed for the program; and (4) scope clarifications/changes.*
- *A FasTracks Construction Inflation Workshop was held on November 23, 2010, to discuss and evaluate the construction cost inflation rate that is applied to FasTracks capital cost estimates. Participants included RTD staff, senior transit consultants, representatives from local government and regional agencies, and Ken Simonson, AGC's Chief Economist. In the workshop, RTD's current cost-estimating methodology and current method for analyzing, forecasting, and estimating construction cost inflation were presented.*

- *Construction Inflation Workshop participants generally agreed that RTD's current methodology (and forecast values) for estimating Construction Cost Inflation (applied to YOE Estimates as 'Escalation'), is well founded, responsible, pragmatic and as prudent as any methodology currently being used by similar Transit Agencies for a similar purpose.*
- *The following recommendations from the Construction Inflation Workshop were incorporated into the 2011 APE:*
 - *Materials cost escalation of 5% per year from 2011-2019.*
 - *Escalation assumptions for other cost elements such as O&M, labor, fuel, and others were updated based on Consumer Price Index (CPI) forecasts from Moody's Analytics.*

Review: All supporting documentation reviewed confirmed the current logistics and plans for the FasTracks program as described by RTD. A particular emphasis of the assessment was placed on reviewing the Bottom-Up Estimating methodologies and results produced by RTD in support of current cost forecasts for all corridors. In the 2011 FasTracks Financial Plan, for the first time, design had progressed to the point of using Bottom-Up Estimating methodology, exclusively. Theoretically, Bottom-Up estimating should increase the confidence level of cost projections as more fully-developed estimates which incorporate educated estimates of labor, material, and equipment units and rates. This is in comparison to Top-Down Estimating, which bases most projections on empirical or parametric observations of similar projects. Prior to the 2011 FasTracks Financial Report, due to the fact that design of many of the corridors had not progressed to at least a 30% threshold, RTD had relied on Top-Down Estimating methodologies to support many of the capital cost estimates. Our review of RTD's Bottom-Up methodologies confirmed that RTD was using extremely detailed processes and procedures to support its estimates. As is the case of most estimating processes, the data is subject to continual review and refinement, and as such, we found that not all reports consistently tied together, but differences were immaterial and appeared to result exclusively from timing differences in the production of reports. A more detailed review of RTD's Capital Cost estimate is provided in that section of this report. We also reviewed the notes and minutes from the Construction Inflation Workshop and **commend RTD for taking such a proactive and informed approach in reviewing and determining the escalation rates to utilize in estimating.** In all cases the escalation or inflation rates employed by RTD in the 2011 FasTracks Financial Plan are found to be reasonable for this stage of project development.

Non-Operating Revenues

- *The primary funding source for the District has been a sales and use tax imposed on transactions within the District boundaries. Effective January 1, 1974, the District imposed a tax equal to 0.5%. On May 1, 1983, the tax was increased to 0.6% or six-tenths of one percent and the tax base was adjusted. On January 1, 2005, the sales tax was increased by 0.4%, to one percent. The current tax generated revenues of \$397.7 million annually in 2010.*

- *Average annual sales and use tax growth from 1980 – 2002 was 6.3%. However, due to recent economic conditions, sales and use tax growth has declined significantly below this historic average, including negative growth in 2008 and 2009. In 2004, RTD projected sales and use tax revenues for the FasTracks program of \$13.7 B from 2005 – 2035. Current projections included in this financial plan reduce this projection from \$13.7 B to \$8.0 B. This decrease in projected revenues over time has a significant impact on the FasTracks plan.*
- *To address the challenges of sales and use tax revenue projections in late 2009, RTD convened a group of State and local government economic advisors to review RTD's current forecasting methodology; evaluate potential forecasting methodologies; and obtain consensus on a future forecasting method.*
- *Based on the results of the working group, RTD developed three linear regression models using different variables to reach low, medium, and high sales and use tax growth forecasts.*
- *RTD reconvened this group on October 26, 2010, and agreed to use the same methodology for the 2011 APE sales and use tax forecasts. Beginning with the Central Platte Valley and the Southeast Corridor project, the District has established a policy of requiring a portion of major project costs to be paid by local jurisdictions. This Plan assumes that this policy will continue and that the District's jurisdictions will contribute an amount in aggregate equal to 2.5% of the eligible corridor costs. During the construction period, the District will accumulate balances of both sales tax revenues as well as bond proceeds awaiting expenditures. RTD issued \$600 million in sales tax revenue bonds in 2006 and \$379.1 million in 2010, and the Plan also assumes future debt issuances. The Plan assumes investment revenues will be earned at a rate equal to 1.50%.*

Review: Again, we commend RTD on their continued use of the Sales & Use Tax Working Group as a proactive measure in evaluating and projecting revenues for this critical element of the Financial Plan. While it is impossible to predict with certainty the state of the economy going forward, RTD's assumptions that are based on the results of the Working Group, appear to be generally reasonable, with the exception of the investment income rate in the short term. We recommend that RTD continue performing sensitivity analyses on the revenues that can be expected from the Sales & Use Tax and look to proactively develop plans to mitigate any unanticipated negative spikes in revenues resulting from economic events outside of the control of RTD. Relative to the local contributions and debt financing assumptions, we were able to confirm RTD's representations. An expanded review is provided in both the Revenue and Financing sections of this report.

Operating Revenues

Farebox Revenues: Base System

- *Base system farebox revenues will be based on the forecast contained in RTD's 2011 Adopted Budget, which includes a fare increase that was implemented on January 1, 2011.*
- *Farebox revenue forecasts for the base system for the years 2012-2035 will assume growth based on population growth, service growth and the change in the consumer price index (CPI). Farebox revenues will be assumed to increase with the rate of population growth each year, due to ridership increases associated with population growth.*
- *Additional increases will be tied to increases in service, with farebox revenue assumed to increase at 75% of the system wide average revenue per service hour with each increased hour of bus service provided. These adjustments will be initially applied in constant 2011 dollars.*
- *RTD fiscal policies state that RTD's six-year Strategic Business Plan (SBP) includes periodic fare increases to permit fare revenues to keep pace with cost increases, as measured by the Denver-Boulder Consumer Price Index (CPI). RTD's most recent fare increase was implemented on January 1, 2011. The farebox revenue forecasts in the Plan will assume that the next fare increase will be implemented in 2014, and that CPI-based fare increases will be implemented every third year after 2014. The fare rate increase ranges from 6.6% to 11.7% every third year, varying with changes in CPI forecasts.*

Farebox Revenues: FasTracks System

- *For the FasTracks corridors, RTD prepared travel forecasts for the horizon years of 2020 and 2035. These forecasts assumed the full build-out of the FasTracks rapid transit system.*
- *RTD will combine the construction schedule with the travel forecasts, with passenger fare revenues starting two years after initial operating costs are incurred. This reflects the fact that each corridor will incur two years of progressively increasing operating costs for training, testing, and start-up before passenger fares are collected.*
- *Existing average fares paid by class of service will be applied to the ridership forecasts for each corridor in constant 2007 dollars. Based upon the forecast boardings by station, RTD can estimate the percentages of riders on each corridor that are expected to be paying local, express, regional, and Sky-Ride fares.*
- *The travel forecasting model produces daily ridership estimates. The fare recovery rates will be applied, and then the daily fare totals annualized.*

Fare Increases

- *Fare increases for the FasTracks system are assumed to occur on the same schedule as those for the base system, with future fare increases in every third year starting in 2014.*
- *The average fare paid for FasTracks corridors also is assumed to increase at the same rate as for the base system, with fare increases ranging from 6.6% to 11.7%.*

Parking Revenues

- *RTD has developed a parking revenue model that assumes:*
 - *Residents of the District are not charged a fee for parking on a daily basis for first-come-first-served spaces.*
 - *12-13% of residents would opt to pay into a program that offers reserved spaces close to boarding areas and that the price for this would be \$20 per month (per 22 working days).*
 - *Non-residents will be charged \$4.00 per day for first-come-first-served spaces and \$40 to \$50 per month for reserved spaces, depending on circumstances (location, demand, etc.).*
 - *Charges for overnight parking for the East Corridor at a rate of \$2.00 per 24 hours for residents and \$4.00 per 24 hours for non-residents.*
 - *RTD implemented the Parking Management Program in stages over the first half of 2009. Forecast revenues for 2009 were \$145,000, increasing to \$411,000 in 2010 for the first full year of operation. By 2035, system growth and inflation are projected to increase the annual amount that could be raised by this parking pricing system to \$1.0 million for FasTracks and \$7.7 million for the base system.*

Review: Our review confirmed that RTD accurately included in the 2011 FasTracks Financial Plan the provisions and calculations for Farebox Revenues and related factors as described in these core assumptions. Details and calculations related to the parking revenue forecasts could not be provided by RTD; however, associated amounts are relatively minor compared to the overall projected revenues. Since so much of the operating revenue projections are based on population and travel demographics, we suggest that RTD work with DRCOG in reviewing these forecasts, and performing some degree of sensitivity analysis.

Operating Expenses

- *Operating and non-operating revenues will be applied to the payment of operating and capital expenses.*

- *The District has developed operating expense projections based on past experience and expectations of future ridership, schedules, renewal and replacement, labor and general maintenance, all adjusted for inflation.*
- *The District's 2009 operating expenses totaled \$388.5 million and the Plan projects operating expenses to increase to \$1.303 billion (note, this figure differs slightly from that evaluated in the FasTracks 2011 Financial Plan) in 2035 after full implementation of FasTracks.*
- *FasTracks rubber-tire service increases (bus and ADA) were determined based on forecasted demand and senior/ADA needs that were identified through the East/Gold FFGA process.*

Review: All assumptions were found to be accurately reflected in the 2011 Financial Plan, with the exception of the slight difference in projected operating expenses in 2035. A more detailed review of Operating Expenses is contained in that section of this report.

Debt Financing

- *As of December 31, 2010, the District had \$261.1 million in sales tax bonds outstanding for the base system and \$977.6 million in sales tax bonds outstanding for the FasTracks program.*
- *As of December 31, 2010, the District also had an outstanding bond of \$168.0 million due to the Denver Union Station Project Authority (DUSPA).*
- *In August 2001, a commercial paper program, secured by sales tax revenues on a junior lien to the fixed rate sales tax bonds was implemented in the amount of \$118.5 million to provide bridge financing for the T-REX project. Of this amount, \$92.5 million was actually issued, and the full amount was retired as of November 1, 2010, leaving no commercial paper outstanding as of December 31, 2010.*

Sales Tax Revenue Bonds

- *Sales tax revenue bonds are provided as the "backbone" of the financing program. This is because senior lien sales tax bonds provide the strongest security, and thus lowest long-term borrowing costs to the District.*
- *In October 2006, the District issued \$600 million in sales tax revenue bonds to fund the initial expenditures for the FasTracks program.*
- *In November 2010, the District issued an additional \$379.1 million in sales tax revenue bonds to fund further expenditures for the FasTracks program.*
- *Additional sales tax revenue bonds will be issued.*
- *Bonds are assumed to be issued on a fixed rate basis, but this is not required. A True Interest Cost (TIC) of 5.85% is assumed for all bond issuances, which reflects an*

interest rate of 100 basis points over the 10-year average, historic financing cost for RTD. The 10-year average, historic financing cost for RTD is based upon the average of the 30-year MMD Index[...]. For Plan purposes, all bonds are assumed to be issued on June 1 of their respective years of issuance. The bonds are amortized to comply with all required bond covenants and TABOR requirements as well as the District's minimum net 1.20x debt service coverage policy.

Certificates of Participation (COPs)

- *The District has previously used COP financings, which are a form of lease purchase transactions for financing buses and rail vehicles.*
- *As of December 31, 2010, the District had \$275.0 million in outstanding COPs for the base system and \$282.0 million in COPs outstanding for the FasTracks program.*
- *The District issued the Series 2005A COPs totaling \$81.0 million in par amount to finance light rail vehicles to be used on the West Corridor.*
- *The District issued \$220.2 million of the Series 2010A and 2010B COPs to finance light rail vehicles for the FasTracks program and two parking garages for the West Corridor.*
- *In addition to the COPs issued for the FasTracks program, the Plan may assume the issuance of COPs to fund base system capital expenditures. COP lease payments are not covered by TABOR restrictions.*

Commercial Paper

- *The commercial paper program allows the District to provide short-term, interim financing of the Federal cash flow and thus keep the project on schedule.*
- *Of the \$118.5 million authorized commercial paper, \$92.5 million was actually issued, and none was outstanding at the end of 2010.*
- *Currently, the Plan does not include a future commercial paper program.*

TIFIA

- *TIFIA, or the Transportation Infrastructure Finance and Innovation Act of 1998, provides a new source of project financing to eligible projects. Under the provisions of TIFIA, the U.S. DOT can provide direct loans, credit enhancement or lines of credit.*
- *RTD is not assuming TIFIA financing for any additional corridors at this time.*

GARVEE Bonds

- *GARVEE bonds or Grant Anticipation Notes allow RTD to bridge future receipts of Federal New Starts Grants. The financial plan assumes that RTD will issue GARVEE bonds to bridge New Starts receipts for the Eagle project. (page 23 of RTD's 2011*

FasTracks Financial Plan Summary refers to a Sales and Use Tax pledge rather than a GARVEE structure; upon questioning RTD stated that the nature of the security is yet to be determined)

- *The assumed interest rate for the GARVEE bonds is 5.85% (this rate conflicts with page 23 of RTD's 2011 FasTracks Financial Plan Summary, where a 3.95% rate was indicated; upon questioning, RTD stated that the 3.95% rate was accurate), which is the same borrowing rate assumed for the Sales Tax Revenue Bonds.*

DUSPA Bond

- *In July 2010, RTD issued a \$168 million bond to DUSPA to finance a portion of the RTD contribution to the Denver Union Station project. RTD will provide DUSPA with a 30-year cash flow of \$12 million per year, representing an interest rate of 5.85% on the RTD funds.*

Review: Debt Financing assumptions were found to be applied in the 2011 FasTracks Financial Plan, with the exception of the GARVEE bonds financing (a short-term financing – which security is yet to be determined – has been assumed in the Financial Plan, with a lower 3.95% interest rate – from page 23 of RTD's 2011 FasTracks Financial Plan Summary); however, since many of these instruments are subject to change, attention is called to the assessment of debt instruments included in the Financing section of this report.

Public Private Partnership (PPP)

- *In July, 2010, RTD entered into a 34-year Design-Build-Finance-Operate-Maintain concession agreement with Denver Transit Partners (DTP) for the Eagle Project, which includes the East Corridor, Gold Line, electrified Segment of the Northwest Corridor, Commuter Rail Maintenance Facility, and other ancillary projects.*
- *As part of the financial plan in the concession agreement, DTP will provide debt and equity to cover \$487.8 million of the initial capital cost of the Eagle project.*
- *The Plan assumes that the RTD will bridge the timing gap between expenditures and receipt of federal revenues from an FFGA through the issuance of GARVEE bonds.*
- *Under the concession agreement, RTD will make annual availability payments to DTP once the project is open for revenue service, which will cover operations, maintenance, and capital repayment. These payments are segmented into two pieces:*
 - *The capital portion of the availability payment is structured as a fixed annual debt subject to TABOR. The principal amount of the availability payment as of December 31, 2010 was \$589.9 million.*
 - *The service payment portion of the availability payment includes all costs to operate and maintain the lines. The availability payments are assumed to adjust according to a formula that includes inflation-based increases and performance-related reductions. The service payment is subject to annual appropriation and is not covered by TABOR restrictions.*

Review: A detailed review of all the assumptions surrounding the P3 concessionaire's agreement with DTP is provided throughout various sections of the report. The assumptions stated by RTD as included in the 2011 Financial Plan have been found to be accurate. As stated previously, the bridging of the FFGA grant disbursements may ultimately use instruments other than GARVEE bonds.

Overall Assessment of Financial Assumptions: RTD continues to develop and further refine the methodologies, supporting data and information that is used in support of each year's FasTracks Financial Plan. Our review of the Core Financial Assumptions indicates that RTD has given proper and reasonable attention to the definition of the factors used in support of the Capital and Operating estimates, as well as those supporting Revenue and Financing projections in the 2011 FasTracks Financial Plan. While any forecast or financial plan is subject to day-to-day changes (due to the ever-evolving status of the project), RTD has successfully captured the essence of the assumptions (e.g. a snapshot in time) that support its forecasts.

Urban and JPA recommend that RTD continue and consider expanding the use of sensitivity analysis, particular as it relates to the Sales and Use Tax projections that form such an integral part of the FasTracks Financial Plan. Also, material price fluctuations should continually be monitored for significant deviations that would affect the capital budget, at least until more of the major construction projects are bid and under contract. Urban and JPA recommend that RTD continue to convene meetings with the Sales and Use Tax and Construction Inflation Working Groups in order to maintain objective and independent evaluation of key pricing, escalation, and revenue assumptions that will continue to be embedded in each subsequent year's Financial Plan. Lastly, RTD should work with DRCOG in collaborately re-evaluating the population and travel demographics that will continue to form important core assumptions in Operating and Revenue forecasts as the FasTracks program evolves.

IV. CAPITAL COST ASSESSMENT

What is the current cost estimate to complete the FasTracks Program? What expenditures have been made to date since the initiation of FasTracks program? What is the current percent of work completed?

The current estimate for the program, according to the Regional Transportation District (RTD) FasTracks Financial Plan Update (Plan Update), dated March 23, 2011, is \$6.7 billion. The table below, from the Plan Update, summarizes the current program costs for each corridor.

**FasTracks Projected Capital Costs by Corridor
(In Millions of Year of Expenditure Dollars)**

Corridor	2011 APE
West Corridor - Federal Project ¹	\$642.3
West Corridor - Third Party Funded Projects ²	19.8
West Corridor – Additional RTD Costs ³	18.7
West Corridor – ARRA Funding ³	3.5
Total West Corridor	684.3³
East Corridor	1,095.9
Gold Line	415.9
Northwest Rail Electrified Segment	137.0
DUS – Pecos Shared Track	324.7
Commuter Rail Maintenance Facility/Control Center	189.0
DUS Systems and Electrification	22.5
Total Eagle Project Costs⁴	2,185.0
I-225 Corridor	727.4
Northwest Rail Corridor (S. Westminster to Longmont)	865.0
North Metro Corridor	859.8
Central Corridor Extension	68.2
Southeast Corridor Extension	212.9
Southwest Corridor Extension	179.1
U.S. 36 BRT – Phase 1	21.3
U.S. 36 BRT – Phase 2	211.4
U.S. 36 BRT – Phase 2 ARRA Funding	7.6
Total U.S. 36 BRT (Phase 1 and Phase 2 Costs)	240.3
Denver Union Station ⁵	283.3
Light Rail Maintenance Facility	20.9
Other FasTracks Project Costs	422.0
Total FasTracks Program Costs	\$6,748.2

¹Total cost identified for the West Corridor in the Full Funding Grant Agreement (FFGA) (\$709.8 million) includes financing charges and EIS/PE costs incurred prior to the FasTracks program.

²Third-party-funding for the Federal bridge replacement and bike bridges at Wadsworth and Kipling.

³Following internal accounting review, some costs were reclassified from capital to expense to ensure that RTD is following generally accepted accounting principles.

⁴The Eagle Project is comprised of both federally-eligible, and non-federally eligible components. Total federal project = \$1,558.4 and the total non-federal project = \$626.6.

⁵Denver Union Station costs in the 2010 plan include only RTD locally-funded contributions to the joint project and grant funds and other reimbursements to be received by RTD. CDOT, other federal sources, TIF, metro district revenues, development rights revenues, and other sources are expected to contribute an additional \$181.2 million to the project, for a total transit element project cost of \$464.5 million.

According to RTD’s 2011 FasTracks Financial Model, Version 75.01, the total un-inflated cost estimate for the overall project is now \$6.17 billion, which is comprised of \$5.37 billion for FasTracks program costs and \$0.8 billion for Right-of-Way (ROW) costs.

According to RTD’s 2011 FasTracks Financial Plan Summary Table, the total expenditures to date, from program initiation in 2005 through 2010 is \$1.534 billion. This amount is comprised of the sum of \$1.162 billion in FasTracks program costs and \$372.4 million for ROW costs.

The total current percent complete is calculated as 24.9%, based on the total expenditures through 2010 of \$1.534 billion versus the total un-inflated program costs of \$6.17 billion. This is illustrated in the table below:

Project	Budget (billions)	Expended	% Expended
FasTracks	\$5.37	\$1.162	21.6%
ROW	\$0.8	\$0.372	46.5%
Total	\$6.17	\$1.534	24.9%

Describe the cost estimating methodology. Is it valid?

Up until the RTD Core Financial Assumptions were adopted in 2011, the method of estimating was a “Top Down” approach which relied predominantly on parametric or historical data. Currently, all corridors and projects employ the use of “Bottom Up” estimating methodology. Bottom Up estimating is a more precise method of forecasting construction costs, and is typically used when a project’s design efforts are more advanced and refined. Bottom Up estimating is typically used for estimating capital costs once the design has reached a 30% completion plateau, and in 2010, all corridors and projects had surpassed this milestone. This timeline for the use of Bottom Up estimating is consistent with industry standards.

In the Bottom Up estimating methodology, quantities (units) of work for each corridor are identified and the projected costs for labor, material, equipment, and productivity rates for the work efforts can then be defined. As part of the capital cost assessment, an evaluation of RTD’s template for Bottom Up estimating methodology (Appendix C) was performed. Sampled portions of the forecasted costs for two corridors, I-225 (a Light Rail Corridor) and North Metro (a Commuter Rail Corridor) were made for applicability and consistency to RTD’s estimating procedures. While some minor arithmetic and numerical transcription discrepancies were noted, these are the result of supporting schedules that are continually updated, rather than being a flaw in the processes or procedures. In each of the sampled projects, RTD’s procedures were validated as to their consistency and reasonableness. The cost estimating effort was further

assisted by the use of the latest versions of HCSS Construction Scheduling and Primavera Scheduling software. These software packages are widely accepted and used by many contractors, consultants and public agencies for estimating heavy and civil capital projects. Further, RTD's estimating procedures are consistent with other large capital projects that have been evaluated by Urban throughout the country.

The lowest level of analysis provided in the assessment of Capital Costs estimating was the "Project Detail Report." This document provides details on the direct cost for each bid item. The Project Detail Report was reviewed as follows:

- The craft labor hourly rates were compared to rates regulated and stipulated under the Davis-Bacon Act for the nation and region, and compared favorably.
- Projected material costs were compared to national databases and also appeared to be reasonable.
- The crew size, makeup by job classification, equipment and tool provisions, supervision, along with productivity rates, and any other direct supporting cost were all found to be presented in great detail.

This basic data was then compared to the cost of other projects in the FasTracks program and other project costs that might validate and confirm its accuracy and reasonableness. The information was reviewed and evaluated against data considered standard industry practice, and in consideration of unique or special circumstances. RTD's Financial Plan and supporting information presented a fair and accurate representation of conditions and costs to be expected for each corridor evaluated.

The data from the Project Detail Report was then rolled up into a "Concise Bid Proposal" form. RTD uses standard markups of 15% of all Direct and Indirect Costs to cover anticipated Home Office Overhead and profit provisions. Field Office provisions or Indirect Costs are included in SCC Category 40.08 and usually are calculated in detail utilizing project staffing, job duration, bonding, insurance, and general conditions allowances. RTD finds that Insurance costs usually run approximately 3% of anticipated construction costs, while bonding is usually in the 1-2% range of construction costs.

The Concise Bid Proposal form utilizes the Federal Transit Administration (FTA) stipulated Standard Cost Category (SCC) codes as the bid items. The normal estimating approach would be to calculate provisions for job site general conditions, home office overhead and profit, and other costs such as bonds, insurance, and contingencies for anticipated project risk in coming up with a total direct cost mark-up. Based on numerous elements of variability and specifics of each project, this "all inclusive" support cost mark-up, typically in the range of 30% to 50%, is distributed to the direct cost items by prorating on a dollar basis.

RTD employs a slightly different variation whereas the anticipated job general conditions are identified separately within SCC Category 40.08. This implies that general condition items are treated as additional bid items. The remaining mark-up for undefined home office and profit provisions is then in the area of 15% and is applied against all direct cost items. Normally this mark-up is broken down into more detail; however, after reviewing other ongoing projects,

RTD's Estimating Department feels that the 15% provision is an accurate representation of the factor to be used for home office and profit provisions. Although this approach to mark-up is slightly different from the normal practices, it provides similar results and is deemed reasonable and acceptable.

From the Concise Bid form, the cost data is then more fully mapped into the FTA's SCC cost classification system and put into the "Annual Program Evaluation (APE) 95% Design Spreadsheet". Next, costs are interfaced onto the project specific "Base Spreadsheet" for a time-phased estimate, where the projected costs are allocated to their anticipated year of expenditure (YOE). Subsequently, the time phased cost elements are escalated and are put onto the project specific "YOE Spreadsheet". These costs are integrated with costs from other corridors and then summed to reach the total estimated capital cost for the overall FasTracks program. Based on our sample testing, if the same estimating methodology is consistently applied by RTD for all corridors, we believe that RTD's capital cost estimates are reliable, reasonable, and properly supported.

Are the materials and labor unit costs, and labor productivity rates reasonable? Are they consistent with current local and national price trends?

RTD coordinated its capital cost estimates with current Davis-Bacon wage rates, and developed equipment rates, crew sizes, and material costs in consideration of regional indexes that provide data on these cost categories. RTD indicated that it will continually monitor all the contributing factors affecting the various estimating factors. As they have done in the past two years, RTD intends to continue consulting with transit industry and economic experts relative to trends, forecasts, and political/economic events that might impact pricing forecasts. If RTD provides continual monitoring, evaluation, and necessary refinement of its estimates relative to these various cost inputs, the level of confidence in the estimates will be enhanced and should maintain reasonable proximity to the actual costs realized, once contracts are executed. We find RTD's current practices for evaluating unit costs and productivity rates to be reasonable.

Material Costs

The Bottom Up estimating methodology uses a more precise method of forecasting construction costs, and as stated above, is typically used when a project's design efforts are more advanced and refined. The costs for materials were reviewed by comparing the prices used in the estimates sampled for standard construction items to recently published data in Engineering News Record (ENR). See the chart below for an example of comparative data for key relevant construction materials anticipated for the FasTracks project:

<u>ITEM</u>	<u>FASTRACKS</u>	<u>ENR</u>
Grade 60 Rebar	\$0.33/LBS	\$0.449/LBS
4000 PSI Concrete	\$81.00/CY	\$103.90/CY
¾" Plywood	\$1025.00/MSF	\$946.39/MSF
Dimension Lumber	\$650.00/MBF	\$477.05/MBF
H-Pile	\$0.32/LBS	\$0.28/LBS

While ENR simply produces a pricing index that should only be considered a guide, based on the sampled comparisons indicated above, RTD should continually assess and adjust (if necessary) its estimates of key material costs. In discussing this issue with RTD, they believed that since they are continually monitoring the local material market place in the greater Denver metropolitan area, their pricing was more accurate than that provided by ENR pricing, which presents a more national perspective. Relative to the 2011 Financial Plan, RTD updated its material cost projections in October 2010 and plans to revisit them again in late 2011 in preparation for the 2012 Financial Plan. While there remains some degree of concern in material pricing volatility, the RTD position is deemed reasonable for the 2011 FasTracks Financial Plan.

Labor Unit Costs

In projecting costs for each corridor, RTD used labor rates from the Davis-Bacon charts relative to the greater Denver geographical area. Labor rates were then escalated to the anticipated Year of Expenditure (YOE). A review of these labor rates for a sampling of trades indicates close agreement with Davis-Bacon.

<u>CRAFT</u>	<u>IN ESTIMATE</u>	<u>DAVIS BACON</u>
Laborer	\$17.10	\$18.68
Crane Operator	\$23.67	\$23.82
Iron Worker	\$23.63	\$24.80

Labor Productivity Rates

For estimating purposes with use of Bottom Up methodologies, RTD forecasted productivity rates for labor supporting the work in each of the corridors. A sampling of various operations was reviewed and compared with nationally recognized and accepted data bases such as RS Means and other national projects previously evaluated by Urban. Although there was some degree of variance in RTD’s labor productivity rates as compared to those evaluated in the Means data base, it is Urban’s opinion that the sampled items are reasonable and acceptable. An example of some sampled productivity rates is provided below:

<u>Evaluated Factor</u>	<u>RTD Cost Est Prod Rate</u>	<u>RS Means</u>
HCSS 9110 Ballast Wall Concrete	0.0736 mh/sf	
0330 53 Misc C.I.P. Concrete		0.095 mh/sf
HCSS 9015 Soil Excavation	0.0628 mh/sf	
312316 Exc 2220 Common		0.060 mh/sf
HCSS 30210 – 16” Waterline Reloc	0.408 mh/sf	
321113 Ductile Iron Pipe		0.350 mh/sf

What amount of contingency has been incorporated in the cost estimates? Given the status of the FasTracks projects, are the contingencies reasonable?

As is common in the development of cost estimates for major capital projects, RTD’s estimating Department appears to have subjectively evaluated risks for each corridor and incorporated some degree of contingency into their direct cost projections for each project. This type of subjective

evaluation and determination of projected cost elements over and above what can objectively be supported is known as “latent contingencies”. More specifically, RTD has stated, “Typically, in our direct cost pricing we allow for one extra hour of each crew day (30 min. in the morning and 30 min. in the evening) for time for the crew to set up and break down. We typically price our crew as working a nine-hour day to account for this”. Thus, this builds in 11% of contingency on the direct labor and equipment costs to account for this non-productive time that is nevertheless charged to the project. In addition, RTD stated, “for production rates, we say that the crew is only working 52 minutes of each hour to allow for various breaks taken by the crew”. This builds in an additional 15% contingency on the labor and equipment costs to account for the non-productive time.

RTD further states, “...we also base our production rates on an average condition which is appropriate for the exact type of work and location of the work being performed. For the labor rates, we use the most current Davis-Bacon wage rate determinations and for the equipment rates (both rental and operating rates), we use the most current rates from the Rental Rate Blue Book for Construction Equipment. For the material and subcontract prices, we use actual quotes that we either solicit ourselves, or the latest prices being used by the contractors on the RTD-FasTracks projects that are under contract. This provides us with the same measure of cost certainty with our Bottom Up estimates as that of any contractor that would bid on the projects. All of this is, of course, in addition to the unallocated contingency that is included for each of the projects in SCC Category 90”.

The Urban team disagrees that this is an appropriate calculation of contingency using Bottom Up estimating methodology. RTD’s explanation suggests that what was described as 11% and 15% contingencies are actually historical cost experiences observed by RTD. These costs rightfully belong in the estimate as an anticipated cost, not as a contingency. Assuming that this is the case, then it could arguably be stated that RTD should revisit the level of contingency being placed on its current Bottom Up estimates.

What assumptions have been made with respect to the effects of inflation and construction/materials price fluctuations? Are they reasonable?

In previous years’ assessments, concern has been expressed and acknowledged by RTD as to the potential volatility to commodity pricing that is out of the control of RTD and is more tied to worldwide price fluctuations and often political and economic turmoil (e.g. current pricing for most fuels). As a result of these concerns and the potential impact to the FasTracks budget, in December 2009, RTD assembled a panel of regional economists and financial experts for a workshop to evaluate and recommend modifications to RTD’s forecasting methodology. This workshop provided an excellent forum for validating RTD’s forecasting methods and also provided learned and dependable forecasting rates to include in the FasTracks capital cost projections.

On November 23, 2010, RTD held a FasTracks Construction Inflation Workshop that brought together a working group of local and national experts to review its construction escalation assumptions. Participants included RTD staff, senior transit consultants, representatives from local government and regional agencies, and Ken Simonson, Chief Economist for The Association of General Contractors of America (AGC). In the Workshop, RTD’s current cost-estimating

methodology and current method for analyzing, forecasting, and estimating construction cost inflation were presented.

The Construction Inflation Workshop participants generally agreed that RTD's current methodology (and forecast values) for estimating Construction Cost Inflation (applied to YOE Estimates as 'Escalation'), is well founded, responsible, pragmatic and as prudent as any methodology currently being used by other transit agencies for similar purposes.

The following recommendations from the Construction Inflation Workshop were incorporated into the 2011 APE and into RTD's 2011 FasTracks Financial Plan:

- Materials cost escalation of 5% per year from 2011-2019.
- Escalation assumptions for other cost elements such as Operations & Maintenance, labor, fuel, and other factors were updated based on Consumer Price Index (CPI) forecasts from Moody's Analytics.

While Urban continues to have concerns over sudden commodity price spikes that cannot be foreseen, RTD's average escalation methods and resultant rates appear to be conservative enough to reasonably spread the concern of price volatility out over enough years to compensate for this concern.

Are cost-hedging methods proposed? Are they reasonable keeping in mind the estimated build-out date for the FasTracks program?

In August 2010, RTD successfully entered into a concession contract with Denver Transit Partners (DTP) on a Design-Build-Finance-Operate-Maintain (DBFOM) procurement delivery method for the Eagle project, which includes the Gold Line, East Corridor, the electrified segment of the Northwest Corridor and the Commuter Rail Maintenance Facility (CRMF). Although the Concessionaire is now under contract, this program continues to constitute one of the most unusual and nationally watched cost hedging programs. Until the Eagle project is fully constructed, begins revenue operations, and successfully integrates the provisions for service payments, this Public Private Partnership (P3) initiative will continue to raise some concerns as to its ultimate success. Also, as further outlined on Page 54 in the Financing Assessment section of this report, some degree of risk exists with regard to the indexation of Phase 2 construction costs when future operations and maintenance costs will need to be escalated for labor, materials, and inflation indexes.

RTD has also indicated the potential to explore other creative contracting packages (other than traditional design-bid-build) to progress future design and construction of various corridors on the FasTracks program. Anything outside of the traditional design-bid-build methods would be considered a form of risk management, where RTD is attempting to obtain the most efficient pricing, by proactively developing contracting packages that share cost-driving risks between the agency and the contractors. It should be pointed out that RTD's P3 procurement and subsequent contract with DTP for the Eagle project is a model for creative contracting solutions that attempt to obtain the most favorable terms and pricing for an agency, conscious of risk sharing.

Therefore, Urban feels confident that RTD will continue to evaluate alternative contracting solutions in a most effective, but practical manner.

Urban suggests that RTD continue to evaluate and consider advance purchases of certain materials that will be necessary for construction, to take advantage of favorable pricing or as a hedge against anticipated price increases, when the economic environment supports such consideration.

Has a sensitivity analysis been performed on the cost estimates? What are the best and worst case scenarios for capital cost presented in the FasTracks Financial Plan?

Based on a review of the RTD 2011 FasTracks Financial Plan, no sensitivity analysis appears to have been performed on the capital cost budget. The construction market in general has exhibited significant volatility over the past few years. In a May 12, 2011 press release from The Association of General Contractors of America (AGC), Ken Simonson stated that the Producer Price Index (PPI) for all construction materials (nationally) increased by 1.4% in April 2011 and 7.1% over the past twelve months. With recent trends on fuel prices escalating dramatically around the globe, and the correlation of fuel price fluctuations to many other commodities requiring delivery services, the construction material market must continually be monitored for changes that are out of the control of RTD.

The need to analyze the capital program budget with respect to parameters that will be drivers of large cost changes is evident. Although the 2011 FasTracks Financial Report and the model supporting it examined the various components of cost within the current capital budget, a sensitivity analysis would allow the parameters with the greatest influence on budget variation to be isolated and studied at a greater depth. A sensitivity test would provide RTD a focus on future events that might greatly influence the budget in proactively developing mitigation and hedging strategies to address potential large cost changes.

V. OPERATING COST ASSESSMENT

How much does RTD spend annually on operating and maintaining the bus and existing light rail systems? What annual rates of operating cost increase and maintenance cost increase have been assumed? Are these assumptions reasonable and consistent with national and local past trends and forecasts?

What is the estimated amount of annual funding necessary to operate and maintain the completed FasTracks rail systems and additional bus service? Are these assumptions reasonable and consistent with national and local past trends and forecasts? What expectations about the private sector operations/maintenance (from the public-private partnership) are embedded in these estimates? Are these assumptions reasonable?

The operating costs in the Financial Plan are divided between the operating costs of the existing system, and the operating costs of the FasTracks program. The operating costs of the existing system are incurred directly by RTD. This includes all existing bus and light rail services. The operating costs for the FasTracks program and all added service will be shared by RTD and the Denver Transit Partners (DTP), the P3 Concessionaire. The FasTracks program includes new and extended light rail service, new commuter rail service, new bus rapid transit service, and changes to existing bus services. The East, Gold, and the electrified segment of the Northwest rail lines, plus the commuter rail maintenance facility (“CRMF”) will be operated and maintained by DTP, with the caveat that RTD will provide traction power and security services for all lines, including those operated by DTP. All other FasTracks components and services will be operated and maintained directly by RTD. Service payments made by RTD, as stipulated in its P3 agreement will cover DTP’s operations support and expenses.

System Costs

The total operating cost for RTD’s overall system, including both the Base System and FasTracks is shown in the following table titled, Base & FasTracks Operating Expenses 2010 to 2035. The detailed costs are taken from the 2011 FasTracks Financial Plan supporting model, v. 75.01, “Transfer Sheets”. At the bottom of the table, the total costs for 2010 and 2011 that are shown were taken from the budget data available on RTD’s website; while these figures do not accurately coincide with the figures obtained in the Financial Plan modeling table above, the differences are considered de minimus. The difference between the Financial Plan model and budget data numbers is believed to be due primarily to interest expenses.

Base System

As indicated in the table below, the 2011 Base System operating costs are projected to be \$377.2 million, and are forecast to grow to \$662.5 million in 2035. This increase is due to escalation of the cost of current, existing service only, as all projected growth and added services for both bus and rail modes are accounted for in the FasTracks program estimates. In the 2011 FasTracks Financial Plan, the average long term annual escalation between 2006 and 2035 ranges from

2.8% for bus operations to 5.3% for LRT operations. The average escalation for all base system operations including ADA and administrative costs is 3.2%.

FasTracks System

As indicated in the table below, in 2020 the full initial FasTracks system is projected to be in operation. The operating costs to support the FasTracks program will grow from \$150.8 million in 2020 to \$298.8 million in 2030 and then \$417.7 million in 2035. The 2035 costs reflect some anticipated increases in service levels over those projected for 2020.

Totals System Costs

As shown in table below, the total overall system costs (Base plus FasTracks) will grow 63% from 2011 to 2020 as the FasTracks services are phased in. Projected overall system costs are forecast to be \$654.3 million in 2020, growing to \$967.6 million in 2030 and \$1.153 billion in 2035.

Base & FasTracks Operating Expenses 2010 (Actual) to 2035 (Forecast)

FROM FASTRACKS FINANCIAL PLAN (\$1000)									
	2010	Δ %	2011	Δ %	2020	Δ %	2030	Δ %	2035
						FROM 2020		FROM 2020	
RTD BUS OPERATIONS	113,167	2.1%	115,589	27.9%	147,845	28.0%	189,199	40.6%	207,834
PRIVATE CARRIER OPERATIONS	91,839	-1.3%	90,665	32.8%	120,434	26.7%	152,576	40.9%	169,636
SECURITY & FACILITIES MAINT.	23,090	1.8%	23,502	28.9%	30,285	27.5%	38,601	42.0%	42,999
COST SHARE AGREEMENTS	3,570	1.7%	3,632	28.9%	4,680	27.5%	5,966	42.0%	6,645
FASTRACKS BUS ADJUSTMENTS	-3,764	101.6%	-7,590	28.3%	-9,740	27.0%	-12,369	41.3%	-13,762
ADA OPERATIONS	36,020	5.4%	37,948	58.6%	60,195	52.9%	92,036	87.9%	113,132
FASTRACKS ADA ADJUSTMENTS	-6,449	-26.4%	-4,747	343.0%	-21,030	115.2%	-45,261	196.6%	-62,385
LRT OUTSIDE SE CORRIDOR	20,548	0.3%	20,618	24.0%	25,562	27.5%	32,581	42.0%	36,293
LRT IN SE CORRIDOR	18,035	1.5%	18,307	28.9%	23,591	27.5%	30,069	42.0%	33,495
OTHER FACILITIES & SECURITY	4,073	160.4%	10,606	-39.1%	6,454	27.5%	8,227	42.0%	9,164
COST OF INSURANCE	7,015	1.9%	7,150	28.9%	9,214	27.5%	11,744	42.0%	13,082
ADMINISTRATIVE EXPENDITURES	55,715	10.4%	61,530	21.8%	74,941	27.5%	95,518	42.0%	106,401
OPER/ADMIN COST REDUCTIONS						-100.0%		-100.0%	
TOTAL BASE	362,858	4.0%	377,211	19.9%	452,432	32.4%	598,884	46.4%	662,533
Southeast Enhancements Corridor					7,071	27.5%	9,012	170.0%	19,090
Southwest-CPV-Central Corridor					6,668	27.5%	8,498	189.3%	19,292
Southwest Corridor Extension					4,611	27.5%	5,877	78.0%	8,208
West Corr. - Without CNPAs			2,303	665.6%	17,636	27.5%	22,479	42.0%	25,040
West Corr. - CNPA - Non-Other Funded					0		0		0
West Corr. - CNPA - Funded by Others					0		0		0
I-225 Corridor					13,939	27.5%	17,767	81.2%	25,254
East Corridor					4,611	27.5%	5,877	42.0%	6,547
40th and 40th Extension					1,983	27.5%	2,528	46.1%	2,897
U.S. 36 Corridor - Northwest Rail					32,029	35.4%	43,381	95.6%	62,664
U.S. 36 Corridor - BRT					5,604	154.9%	14,286	325.9%	23,871
Gold Line					1,183	27.5%	1,507	42.0%	1,679
North Metro Rail					11,800	65.2%	19,495	88.7%	22,263
Lone Tree					4,198	27.5%	5,350	78.4%	7,489
Denver Union Station					3,018	27.5%	3,846	42.0%	4,284
Maintenance Facilities - Commuter Rail					306	27.5%	390	42.0%	434
Maintenance Facilities - LRT and Bus					0		0		0
Miscellaneous					2,607	27.5%	3,323	42.0%	3,702
Administrative Costs *	13,063	-31.6%	8,936	-100.0%					
Service Increases - Bus					9,740	794.9%	87,170		116,912
Service Increases -ADA	3,764	101.6%	7,590	177.1%	21,030	115.2%	45,261	196.6%	62,385
Service Increases - Maintenance Facility	6,449		4,747						2,856
Reconciling Items	10,682		0						
Security Staffing - East Corridor					1,850	0.0%	1,850	0.0%	1,850
Security Staffing - Gold Line					800	0.0%	800	0.0%	800
Security Staffing -NW Rail Elec. Segment					150	0.0%	150	0.0%	150
TOTAL FASTRACKS (RTD)	33,958	-30.6%	23,576	539.8%	150,835	98.1%	298,849	176.9%	417,668
East Corridor					41,935	27.8%	53,595	28.8%	54,030
Gold Line					6,431	53.0%	9,839	67.6%	10,780
Northwest Corridor Electrified Segment					2,677	140.0%	6,427	179.7%	7,489
TOTAL FASTRACKS (EAGLE)					51,044	36.9%	69,861	41.6%	72,299
TOTAL FASTRACKS (RTD PLUS EAGLE)					201,879	82.6%	368,709	142.7%	489,967
TOTAL SYSTEM	396,816	1.0%	400,787	63.3%	654,311	47.9%	967,594	76.1%	1,152,500
FROM RTD ADOPTED BUDGET	399,866		426,577						

Escalation

The following chart summarizes the projected average annual escalation for the overall system and various subsets of the system.

SERVICES	AVERAGE ANNUAL ESCALATION			COMMENTS
	2006-2035	2020-2030	2020-2035	
BASE SYSTEM (RTD)	3.20%	2.87%	2.59%	NO SERVICE CHANGES
ALL FASTRACKS CORRIDORS (RTD)		3.40%	5.02%	INCLUDES SERVICE INCREASES IN 2030
FASTRACKS BUS INCREASES (RTD)		16.16%	13.02%	
NORTH METRO & NW RAIL CORRIDORS (RTD)		3.81%	6.10%	
EAST & GOLD RAIL CORRIDORS (RTD)		2.46%	2.36%	TRACTION POWER
EAST & GOLD CORRIDORS (DTP)		5.40%	5.23%	EXCLUDES SECURITY & TRACTION POWER
TOTAL BASE & FASTRACKS SYSTEM		4.02%	3.88%	

The higher escalation for the total system as opposed to the Base System is apparently due to the higher escalation of the services operated by DTP and for the FasTracks bus operations. The higher escalation rate for bus operations is assumed to be predicated on both increases in bus services as part of the FasTracks program, in addition to escalating unit costs. The higher escalation for the services operated by DTP cannot be explained from available data. While the overall escalation rates appear reasonable based on national and industry trends, it should be noted that, based on RTD's cost model, diesel fuel and electricity represent roughly 10% and 22% of the total bus and LRT operating costs, respectively. Given recent economic trends relating to the price of oil, the fuel component of the bus operations may escalate considerably higher than the overall projected escalation rate for operations. DMU service on the Northwest rail corridor could be similarly impacted. Depending on generation, electricity costs could also grow at a higher rate. RTD's portion of the East and Gold corridor service, which is understood to be primarily for traction power, is escalated at about the same rate as the overall base system costs. In the Financial Plan, no escalation is applied to the security services to be provided by RTD for the DTP-operated commuter rail services; the costs shown are the same each year from 2017 onward, which should be corrected in future Financial Plans.

Unit Costs

The operating costs for the portions of the FasTracks program that will be directly operated by RTD are well documented in the Commuter Rail Operations and Maintenance Cost Estimate Report (Revision 7, September 4, 2009), the bus and LRT O&M Cost Model Update (June 22, 2009), and the RTD FasTracks Service Plan Update (September 2009). The latter also includes the methodology for allotting rail operating costs amongst the various corridors. Based on our review of the Bus and LRT cost models and the information from which they were derived, we believe that those costs are accurately estimated and reasonable. Commuter rail operating costs are discussed later in this section.

Unlike the previous Financial Plan, the current Plan includes operating costs for the Eagle commuter rail services to be operated by DTP based on the actual negotiated contract (rather than projections developed by RTD that were used in previous years). These costs are indicated as indexed annual service payments and include provisions for both operations and maintenance expenses. The service segments include the Gold, East, and the electrified portion of the Northwest Rail lines. The latter service will be operated by DTP at least on an interim basis until full build out of the Northwest Line is completed instituting RTD-operated DMU service between Longmont and DUS. Whether or not the electrified service will continue to operate in addition to the DMU service after that time has not been determined. Since RTD will operate two of the commuter rail services (North Metro and Northwest Rail), but has no experience in operating commuter rail, the projected operating costs have been of some concern. The following table shows a comparison of the estimated operating costs (projected for RTD, contractually stipulated for DPT) for the various service lines. The cost for the DTP service also includes RTD's forecast cost for traction power and security in support of these services. The comparisons are only very approximate because they don't take into account the distribution of unit costs among the different operating parameters, and how the DTP costs were developed or

allocated, as this is not known. The projected costs are for 2020 when the full FasTracks service plan is anticipated to be in operation.

2020 COMMUTER RAIL COST COMPARISON											
	LINE LENGTH	TRAIN MILES	CAR MILES	TRAIN HOURS	CAR HOURS	NO OF VEH	TOTAL COST	COST/ TR MI	COST/ CAR MI	COST/ TR HR	COST/ CAR HR
GOLD		440,960	881,660	26,000	52,000						
		88,192	176,332	5,200	10,400						
		88,192	176,332	5,200	10,400						
TOTALS	10.87	617,344	1,234,324	36,400	72,800	12	8,414,135	\$13.63	\$6.82	\$231.16	\$115.58
EAST		937,300	1,874,600	30,420	60,840						
		187,460	374,920	6,084	12,168						
		187,460	374,920	6,084	12,168						
TOTALS	23.11	1,312,220	2,624,440	42,588	85,176	14	48,396,384	\$36.88	\$18.44	\$1,136.39	\$568.19
EAGLE SERVICES		1,378,260	2,756,260	56,420	112,840						
		275,652	551,252	11,284	22,568						
		275,652	551,252	11,284	22,568						
TOTALS	34	1,929,564	3,858,764	78,988	157,976	26	56,810,519	\$29.44	\$14.72	\$719.23	\$359.61
N METRO		491,920	983,840	18,980	37,960						
		75,244	150,488	3,172	6,344						
		75,244	150,488	3,172	6,344						
TOTALS	18.55	642,408	1,284,816	25,324	50,648	12	11,800,391	\$18.37	\$9.18	\$465.98	\$232.99
NW RAIL		588,380	1,176,760	20,280	40,560						
		92,456	184,912	3,432	6,864						
		92,456	184,912	3,432	6,864						
TOTALS	40.41	773,292	1,546,584	27,144	54,288	12	32,028,674	\$41.42	\$20.71	\$1,179.95	\$589.98
RTD OPERATED SERVICES		1,080,300	2,160,600	39,260	78,520						
		167,700	335,400	6,604	13,208						
		167,700	335,400	6,604	13,208						
TOTALS	58.96	1,415,700	2,831,400	52,468	104,936	24	43,829,065	\$30.96	\$15.48	\$835.35	\$417.67
ALL COMMUTER RAIL		2,458,560	4,916,860	95,680	191,360						
		443,352	886,652	17,888	35,776						
		443,352	886,652	17,888	35,776						
TOTALS	93	3,345,264	6,690,164	131,456	262,912	50	100,639,584	\$30.08	\$15.04	\$765.58	\$382.79

As shown in the table above, there is a wide disparity in the derived unit costs between the two Eagle lines, East and Gold. The much lower unit costs for the Gold line may be due to how DTP apportioned some of its fixed costs between the East and Gold line; note that the East line is over twice as long as the Gold line.

There is also a considerable disparity between the derived unit costs for the RTD-operated North Metro and Northwest Rail corridors. More than half of the Northwest Rail Corridor operating costs are for lease payments to BNSF for dispatching, right-of-way and signal maintenance, and use of time slots for RTD to operate commuter trains. BNSF will own and control the line and continue to operate freight trains. North Metro will be owned and controlled by RTD. It is assumed that the RTD operating costs for NW Rail in the Financial Plan are for the full DMU service between Longmont and DUS as defined in the 2009 Service Plan Update.

The average unit costs for the two Eagle services and the average unit costs for the two RTD-operated services are similar.

Comparing the operating costs of different commuter rail services is difficult as the nature of the services and configuration of the operating arrangements can vary widely from one system to another. Systems can also range from large and robust, with frequent service on multiple lines,

to minimal systems with mostly peak service on a single line. A comparison of operating costs per vehicle mile from the 2009 National Transit Database indicates a wide range from \$6.95 to \$47.73 per vehicle mile. The variation is wider among the systems under third-party contract operation than those operated directly by the public authority. However, the average cost per vehicle mile of all the systems as well as the directly operated systems and the privately operated systems is between \$14 and \$15 per vehicle mile (the total average is \$14.51). Escalated at 3.2% per year to 2020, the cost would be \$20.52. The comparisons are shown in the table below.

Comparison of Commuter Rail Systems (2009)						
Agency	City	St	Total Oper Costs 2009	Veh Miles 2009	Cost per Veh Mi 2009	Cost per Veh Mi 2020
Metro-North Commuter Railroad Company	New York	NY	\$858,509,601	58,837,738	\$14.59	\$20.63
New Jersey Transit Corporation	Newark	NJ	\$841,817,971	59,777,253	\$14.08	\$19.91
MTA Long Island Rail Road	Jamaica	NY	\$1,104,479,277	65,039,514	\$16.98	\$24.01
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA	\$219,782,314	17,049,137	\$12.89	\$18.23
Northern Indiana Commuter Transportation District	Chesterton	IN	\$39,250,585	3,560,893	\$11.02	\$15.59
Northeast Illinois Regional Commuter Railroad Corp.	Chicago	IL	\$548,648,030	42,930,292	\$12.78	\$18.07
Utah Transit Authority	Salt Lake City	UT	\$21,609,635	2,249,991	\$9.60	\$13.58
Average of Directly Operated Systems			\$3,634,097,413	249,444,818	\$14.57	\$20.60
Projected Average of RTD-Operated Services (North Metro and NW Rail)*						\$15.48
Tri-County Metropolitan Transportation District of Oregon	Portland	OR	\$3,165,285	66,319	\$47.73	\$67.49
Central Puget Sound Regional Transit Authority	Seattle	WA	\$34,020,024	1,399,687	\$24.31	\$34.37
Massachusetts Bay Transportation Authority	Boston	MA	\$277,168,433	23,974,826	\$11.56	\$16.35
Northern New England Passenger Rail Authority	Portland	ME	\$13,139,398	1,889,665	\$6.95	\$9.83
Maryland Transit Administration	Baltimore	MD	\$109,135,596	5,088,471	\$21.45	\$30.33
Pennsylvania Department of Transportation	Harrisburg	PA	\$16,271,442	2,198,389	\$7.40	\$10.47
Virginia Railway Express	Alexandria	VA	\$50,637,207	1,866,876	\$27.12	\$38.36
South Florida Regional Transportation Authority	Pompano Beach	FL	\$52,871,662	2,953,182	\$17.90	\$25.32
Regional Transportation Authority	Nashville	TN	\$4,072,168	193,802	\$21.01	\$29.71
Metro Transit	Minneapolis	MN	\$4,977,709	68,513	\$72.65	\$102.74
Dallas Area Rapid Transit	Dallas	TX	\$14,441,759	511,459	\$28.24	\$39.93
North County Transit District	Oceanside	CA	\$16,439,884	1,349,238	\$12.18	\$17.23
Peninsula Corridor Joint Powers Board	San Carlos	CA	\$87,035,619	6,895,746	\$12.62	\$17.85
Southern California Regional Rail Authority	Los Angeles	CA	\$158,763,727	10,655,753	\$14.90	\$21.07
Altamont Commuter Express	Stockton	CA	\$12,413,122	780,192	\$15.91	\$22.50
Average of Contract Operated Systems			\$854,553,035	59,892,118	\$14.27	\$20.18
Projected Average of Eagle Services (East and Gold)						\$14.72
Average of All Systems			\$4,488,650,448	309,336,936	\$14.51	\$20.52
Projected Average of All Fastracks Commuter Rail Services						\$15.04

Percent Annual Escalation Rate from 2009 to 2020: 3.2

The Eagle service average cost per vehicle mile in 2020 (\$14.72) being lower than the national average of \$20.52 suggests that the projected costs for the RTD operated services may also be lower than the national average. It is noted that the service in Salt Lake City, which generates vehicle miles in the same range as the NW Rail and North Metro, has among the lowest cost per vehicle mile. At this time we believe the projected commuter rail costs are reasonable.

The operating costs for the Eagle service are covered by annual service payments, of which O&M variable portions are dependent on indices for consumer prices (25%), as well as for labor (50%), and for materials and supplies (25%). Thus the annual projected service payments in the current Financial Plan are adjusted over time to reflect adjustments in these cost indices. The

year-to-year projections of service payments forecast in the current Financial Plan vary significantly. This is to be expected due to intermittent costs such as vehicle overhauls, which do not occur every year.

VI. REVENUE ASSESSMENT

What is the estimated amount of funding available for building FasTracks?

The \$6.75 billion in FasTracks capital improvements are funded by a combination of federal grants (\$1.63 billion), local and third party contributions (\$160 million), and a set of borrowing proceeds and pay-as-you-go cash generated mainly by the District's Sales and Use Tax (\$4.96 billion).

- **Federal Grants.** Federal funding includes New Starts grants totaling \$1.03 billion for the Eagle Project and \$300 million for the West Corridor, \$75 million in Small Starts grants for the Southeast Corridor Extension, and \$212 million from a combination of other federal grant programs (detailed in subsequent sections of this report).
- **Local & Third Party Funds.** Contributions from local jurisdictions, the Colorado Department of Transportation (“CDOT”), and Denver Union Station Project Authority (“DUSPA”) total \$160 million.
- **Funding from Leverage of Sales and Use Tax:**
 - **Revenue Bond Proceeds.** RTD has borrowed \$979 million to date using these instruments and expects to issue another \$1.9 billion between 2014 and 2018. Net proceeds for construction (after reserve deposits and financing costs) total \$2.6 billion. A senior lien on the FasTracks Sales and Use Tax receipts directly secures the revenue bonds.
 - **Certificates of Participation (“COPs”).** COPs financing proceeds of \$252 million from issuances in 2005 and 2010 fund a portion of FasTracks capital improvements. COPs are a form of lease purchase for financing buses and rail vehicles, and their debt service obligations--ultimately sourced from Sales and Use Tax revenues—are structured as rental payments.
 - **Denver Union Station Note Proceeds.** RTD issued a \$168 million DUS Note to the DUSPA in July 2010 to finance a portion of the RTD contribution to the DUS project. The revenues pledged toward repayment of the Note are the Sales and Use Tax revenues remaining after revenue bond obligations have been satisfied.
 - **Public-Private Partnership.** The Eagle Project P3 contract is structured as a long-term project delivery mechanism over a 34-year period for three commuter rail lines and related improvements. Because RTD will only pay for a portion of the \$1.3 billion P3's capital improvements¹ through construction completion, the balance is essentially “paid in installments” to the private concessionaire, DTP, under the fixed portion of the service payments made over 28 years. DTP is financing \$487 million

¹ The entire Eagle project capital costs total \$2.2 billion when adding the non-P3 portion delivered separately by RTD.

of the works by raising private debt and equity capital, which are then repaid through RTD's long-term service payments. The service payments also cover DTP's operations and maintenance expenses. Farebox revenue from the Eagle Project will be combined with Sales and Use Tax revenue to make the service payments to DTP.

- **Pay-as-you-go Capital.** Pay-as-you-go capital contributions of \$1.5 billion are sourced from RTD's net cash flow and are fueled by Sales and Use Tax surpluses after debt service and investment income.

The table below summarizes the sources of funds expected to fund capital improvements through 2019. Subsequent sections provide additional detail.

FasTracks Capital Funding Sources

	2010 Financial Plan		2011 Financial Plan	
Revenue Bond Proceeds	1,683,588	25.0%	2,596,792	38.5%
COPs Proceeds	229,999	3.4%	251,505	3.7%
TIFIA Loan Proceeds	325,532	4.8%	-	-
Denver Union Station Note Proceeds	-	-	167,954	2.5%
Public-Private Partnerships	541,014	8.0%	486,921	7.2%
Pay-as-you-go Capital	2,148,516	31.9%	1,458,063	21.6%
<i>Subtotal generated by sales and use tax</i>	<i>4,928,649</i>	<i>73.3%</i>	<i>4,961,235</i>	<i>73.5%</i>
Federal New Start Grants	1,339,126	19.9%	1,339,130	19.8%
Federal Small Starts Grants	-	-	75,000	1.1%
Other Federal Grants	292,828	4.4%	212,557	3.1%
<i>Subtotal federal grants</i>	<i>1,631,954</i>	<i>24.3%</i>	<i>1,626,687</i>	<i>24.1%</i>
Local Match Funding	135,112	2.0%	130,710	1.9%
Other Local Funding ¹	32,257	0.5%	29,606	0.4%
<i>Subtotal local funding</i>	<i>167,369</i>	<i>2.5%</i>	<i>160,316</i>	<i>2.4%</i>
Total FasTracks Program Funding	6,727,972		6,748,238	

Compared to last year, the funding plan reflects a significant shift from pay-as-you-go capital to sales tax revenue bonds. RTD explains that this adjustment accommodates cash flow constraints resulting from a shift in the capital spending schedule and operating cash flows. The increase in revenue bond proceeds also reflects RTD's decision not to assume a TIFIA loan in the current 2011 Financial Plan.

As a result, the anticipated debt borrowing structure would cause the current TABOR authorizations to be exceeded for maximum debt principal (\$3.5 billion) and maximum total debt service (\$7.1 billion). The anticipated 0.4% sales tax increase will therefore need to be placed on the ballot in conjunction with additional TABOR debt authorization of at least \$513 million (a 15% increase) in debt principal and \$3.0 billion in debt service (a 41% increase) to empower the FasTracks program with enough borrowing capacity to deliver the 2011 Financial Plan. However, the size and timing of the various funding sources will continue to evolve through

completion of the program and may require additional debt to address sudden funding shortfalls resulting, for example, from economic downturns. Consequently, the TABOR debt authorization requested on the ballot may need to exceed the minimum levels anticipated in the 2011 Financial Plan.

What RTD funding is expected by specific funding source (e.g. Sales and Use Tax, fare box revenue, other sources)? What are the rates and amounts? Are the Sales and Use Tax forecasts consistent with the outcomes of the most recent RTD working group sessions, with consideration of actual 2010 Sales and Use Tax receipts (i.e., are there substantive issues the work sessions did not address)?

Sales and Use Tax Revenues

The Sales and Use Tax, including the existing dedicated (to FasTracks) 0.4% and the assumed 0.4% increase on January 1, 2012, is the main revenue source funding the FasTracks system. The 2011 Financial Plan assumes a total of \$14.9 billion in FasTracks Sales and Use Tax collections over the 2005 - 2035 period. These collections are used for pay-as-you-go capital contributions, debt repayment (including the DUS bond), concessionaire service payments, and operations and maintenance expenditures, net of operating revenues and other non-operating sources.

Post-2035 tax collections fund repayment of capital uses through 2050 (\$415.6 million for the fixed capital portion of the concessionaire service payment, \$3.0 billion in debt service payments on revenue bonds, and \$44 million for certificates of participation) at which point the tax will fully sunset.

The table below shows actual Sales and Use Tax collections since 1992. Actual collections in 2010 were \$397.7 million, or approximately 0.86% above the \$394.3 million amount projected last year – confirming recovery after the financial crisis which triggered a severe dip in tax collections in 2009.

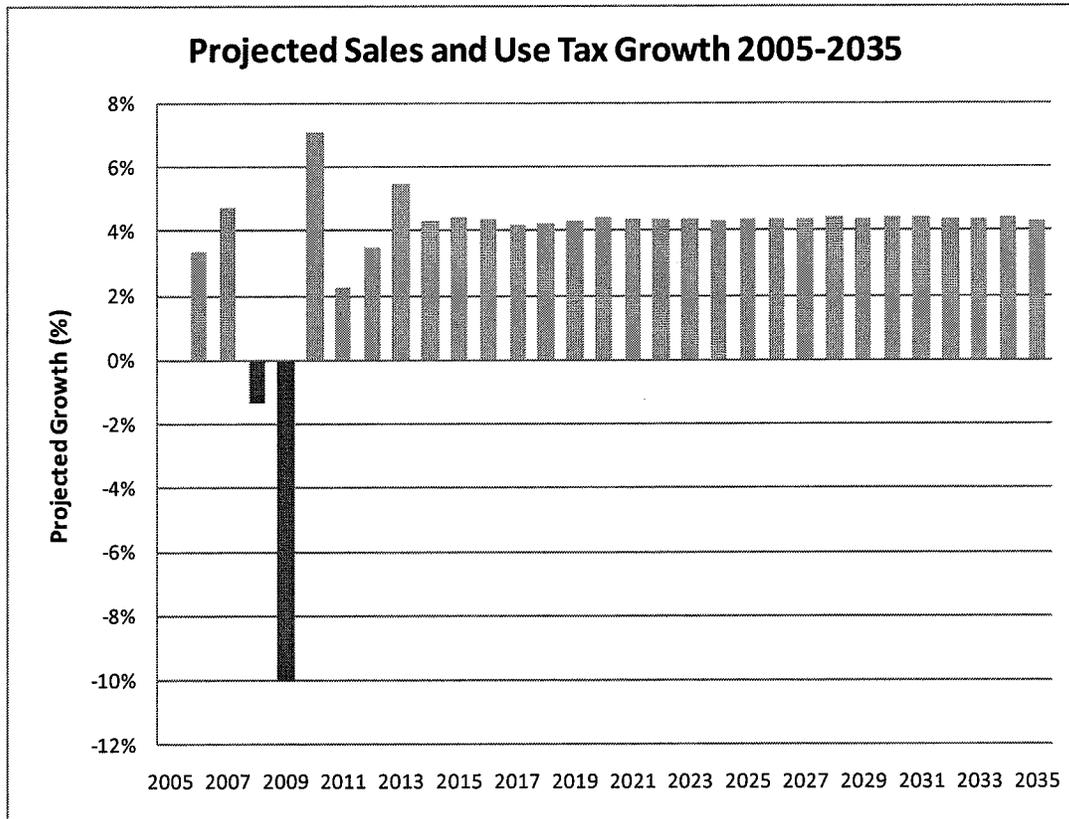
**Growth in Sales and Use Tax Revenues
1992 – 2010
(Dollars in Thousands)**

Fiscal Year	Sales and Use Tax Revenues	Percentage Growth
1992	\$108,389	
1993	121,611	12.20%
1994	134,431	10.54%
1995	142,214	5.79%
1996	153,807	8.15%
1997	164,565	6.99%
1998	179,990	9.37%
1999	202,303	12.40%
2000	224,182	10.81%
2001	224,648	0.21%
2002	213,668	(4.89%)
2003	210,447	(1.51%)
2004	221,276	5.15%
2005 [‡]	386,427	74.64%
2006 [‡]	399,558	3.40%
2007 [‡]	418,407	4.72%
2008 [‡]	412,824	(1.33%)
2009 [‡]	371,405	(10.03%)
2010 [‡]	397,669	7.07%

[‡] Includes both 0.6% and 0.4% Sales Tax Revenues.

RTD updated its Sales and Use Tax forecasts in December 2010, using the methodology developed and agreed to by the Sales and Use Tax Working Group last convened by RTD in December, 2009. During their previous sessions, the Working Group devised three linear regression models for low, medium, and high average annual estimates for revenue growth, respectively, based on various combinations of employment, personal income, and national goods, Gross Domestic Product (GDP). RTD is currently using the medium forecast per the original recommendation given in January 2010. RTD has recently engaged the Leeds School of Business as a consultant to provide a new Sales and Use Tax forecasting model. The Sales and Use Tax Working Group will oversee these efforts. New results and findings should be closely monitored in the near future.

It is noted that the 2.77%, 3.66%, and 4.19% compounded annual growth rates for the low, medium, and high scenarios cited in the 2011 Financial Plan correspond to the 2005 - 2035 period and rely on actual figures for the 2005 - 2009 period. The figure below displays the historical Sales and Use Tax growth for 2005 – 2010 and the “medium” forecasts for 2010 - 2035. Due to the 2008 and 2009 decreases in annual collections, the 2005 - 2010 actual compounded annual growth was only 0.8%. As such the “forward-looking” compounded annual growth rate forecasts for the 2010 - 2035 period are higher: 3.20%, 4.28%, and 4.92% for the low, medium, and high scenarios, respectively.



Finally, as acknowledged in the previous 2010 Financial Plan assessment, volatility in actual collections resulting from severe dips followed by quick recoveries (as reflected in the 2009-2010 collections) is a pattern that is likely to reoccur through 2035. While RTD could use accumulated cash balances to weather an “economic shock” after the program’s full build-out, its cash capacity is more limited during the construction phase. As such, significant and sudden shortfalls during this decade may alter RTD’s capacity to complete the system by 2019 as currently planned and potentially limit RTD’s ability to fulfill its financial obligations on a full and timely basis as the Sales and Use Tax revenue stream is more intensively leveraged and as the increased level of pay-as-you-go obligations become due. RTD has indicated it would likely have to address construction period shortfalls with measures such as a rescheduling of capital projects, reduced service levels, and/or debt restructuring.

Farebox Revenues

From 2005 to 2035, the FasTracks Plan assumes that total Farebox revenues of \$2.1 billion will offset 27% of the \$7.8 billion in operating uses over the same period. For the base system, Farebox revenues are forecasted to total \$4.6 billion, or 31% of the \$14.8 billion operating uses.

RTD recently implemented system-wide fare increases on January 1, 2011 of about 10-15%, compared to the 4.75% increase anticipated in last year’s Financial Plan review. The Financial Plan assumes average fare increases of 6.6% to 11.7% every three years through 2035. The rate of increase varies by corridor. The compounded annual growth rate averages 3.5% through 2035

and is intended to follow inflation rates as measured by the Denver-Boulder Consumer Price Index (CPI-U). Planned fare increases are now the same for the FasTracks and base system:

Year	2011 Financial Plan Base and Fastracks System Fare Increase	2010 Financial Plan FasTracks Fare Increase
2012		5.00%
2014	11.70%	10.00%
2017	8.90%	8.80%
2020	7.90%	8.20%
2023	7.90%	8.30%
2026	7.60%	8.20%
2029	7.30%	8.00%
2032	7.00%	7.70%
2035	6.60%	7.30%

The average fare in 2035 will be 86.5% greater than today’s average fare. This represents a somewhat more modest fare increase than that projected in last year’s Financial Plan, which assumed a 98.9% increase. Historically, the RTD average system fare increased by 59.3% over the 2000 - 2009 period (or by 5.3% on a compounded annual basis). As such, the planned fare increases from a percentage standpoint are consistent with, if not slightly more conservative than RTD’s past fare increases.

In addition to fare increases anticipated every three years starting in 2014, farebox revenues will also reflect ridership increases. The assumed ridership growth over 2020-2035 on the fully-built FasTracks system is expected to increase by 93.4%, or 4.5%² on a compounded annual basis. Given the limited information provided on the ridership forecast methodology and the 2020 and 2035 projections, we cannot opine on the reasonableness of the projected ridership levels. However, those are based on a travel demand model that follows FTA guidelines and has been reviewed as part of the New Starts process. While the farebox recovery ratios assumed through 2025 are relatively stable and generally consistent with the historical base system levels, the last ten years evaluated (2026 – 2035) show a significant rise in recovery ratios from 23% to 33% - which may indicate some optimism in the farebox revenue and/or operating cost structure in the outer years.

Looking at the base system’s forecasts, the farebox recovery ratio is expected to gradually increase from the 27% actual 2009 ratio (up from 20% in 2005) to 35% in 2035, based on containment of operating cost escalation relative to farebox revenue growth. If this target is not achieved, the base system may be unable to provide the contribution to the rubber tire service expansion for FasTracks which is assumed to start in 2023 and total \$1.3 billion through 2035, ultimately reducing FasTracks’ operating cash-flow.

Parking Revenues

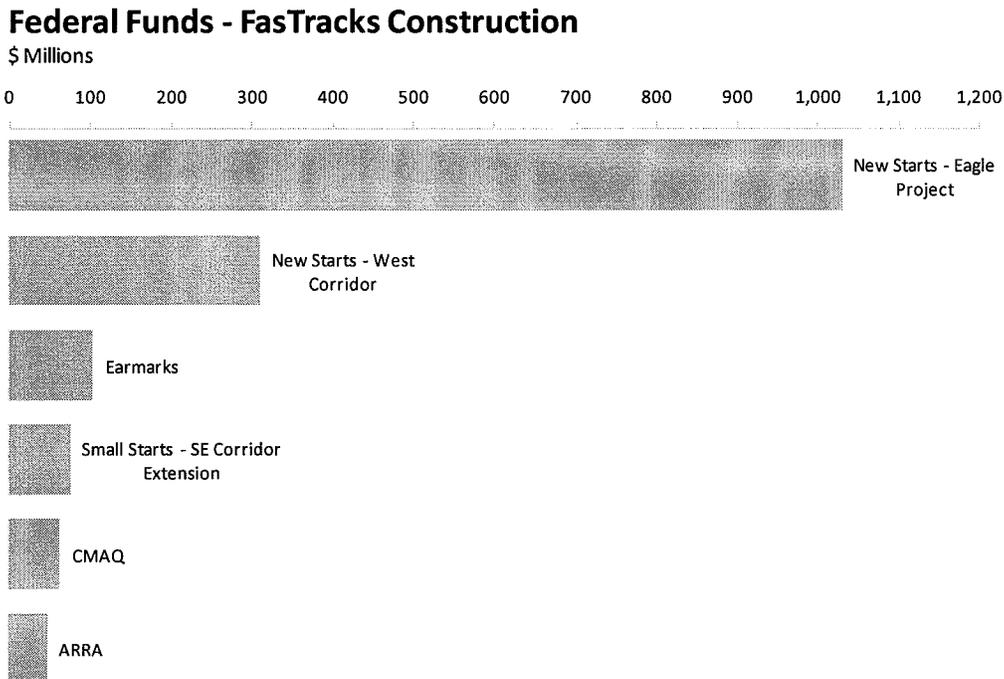
² Note a higher growth is assumed on the Northwest corridor in comparison to other lines.

RTD estimates combined parking revenues of \$474,000 in 2009, \$411,000 in 2010, \$1.8 million in 2020, and \$5.3 million in 2035 for FasTracks and the base system. These large increases could be supported by projected ridership growth as well as development of new parking facilities. RTD bases its assumptions for parking revenues on a model that has not been updated in several years and is no longer available, so it is unlikely that the parking revenue forecasts account for current economic conditions. A revised forecast that reflects recent economic conditions is therefore advisable, although total parking revenue is relatively minor (\$69.9 million over 2005-2035) in comparison with other sources of revenue for the FasTracks Financial Plan.

What amount of national federal funding is expected by source (e.g. New Starts TIFIA, earmarks/discretionary funding)? Over what time period?

- *During and since SAFETEA-LU, what was the total amount of federal funding available nationwide, in these categories, per year? What is the competition (i.e. number of project applications and total funding requested per year)?*
- *Is the funding amount expected consistent with RTD's historical receipt of such funding?*
 - *If not, what elements or features does RTD cite for this level of funding?*
 - *Are these assumptions reasonable?*
- *A new authorization may not be passed for another year or more. How has RTD addressed that in its Financial Plan? What are the associated risks?*

Federal funds comprise 24.1% (\$1.6 billion) of the capital sources of funds for the FasTracks program. The following chart displays the amount of federal funding by source:



- **New Starts – Eagle Project.** The largest portion (63%) of federal funding for FasTracks construction corresponds to an anticipated Full Funding Grant Agreement (“FFGA”) with the FTA for the Eagle Project in the amount of \$1.03 billion. On May 2, 2011, the FTA sent the FFGA to Congress for the required 60-day waiting period. This is FTA’s notification that it intends to award a FFGA to RTD, giving members of Congress and their staff an opportunity to review the FFGA and to ask clarifying questions. This is the final step before FTA can award the FFGA to RTD. RTD anticipates execution of the FFGA by the summer of 2011.

The Financial Plan anticipates receipt of the \$1.03 billion in annual disbursements over the 2011-2018 time period. The FY 2010 federal budget appropriated \$4.5 million, and the President’s FY 2011 budget request included an additional \$80 million for the East Corridor and Gold Line. Accordingly, RTD has assumed \$84.5 million in 2011. For 2012 through 2017, RTD has assumed \$150 million per year. While the FTA noted in its Annual Report on Funding Recommendations³ for FY 2012 that RTD’s assumed New Starts funding is optimistic through 2017, the President’s FY 2012 budget request included \$300 million. Moreover, the schedule of New Starts funds in RTD’s Financial Plan matches that set forth in Attachment 6 to the draft FFGA. Congress will ultimately set the appropriations amounts. Many projects will be competing with the RTD for annual appropriations over the next several years. The FTA’s Annual Report on Funding Recommendations for FY 2012 indicates that 19 projects either have existing FFGA’s (projects under construction or open for service), have pending FFGA’s (including the Eagle project), or are newly recommended for FFGA’s. Another 9 projects are recommended for Project Construction Grant Agreements (“PCGA’s”) and Small Starts Grants. Together, these projects represent \$14.9 billion of New or Small Starts funding, and more than \$10 billion remained at the end of FY 2010 to be appropriated to these projects. An additional 18 projects representing \$5.5 billion are in the pipeline. The following table provides a summary:

Phase	Number of Projects	Total New or Small Starts Funding	Appropriations Received through FY10	2010 Discretionary Allocations	Proposed FY11 President’s Budget	Proposed FY12 President’s Budget
Existing and Recommended FFGAs	19	\$14.52	\$4.62	\$0.18	\$1.56	\$2.57
Recommended PCGAs & Small Starts Grants	9	\$0.36	\$0.02	\$0.00	\$0.20	\$0.18
Subtotal	28	\$14.9	\$4.6	\$0.2	\$1.8	\$2.8
Final Design	5	\$105.4				
Preliminary Engineering	6	\$5,096.8				
Small Starts Project Development	7	\$328.4				
Subtotal	18	\$5,530.6				

³ Available at http://www.fta.dot.gov/documents/CO_Denver_Eagle_Commuter_Rail_complete_profile.pdf

Should RTD's assumed schedule of annual disbursements ultimately be proven optimistic, RTD could make greater use of GARVEEs (discussed below) to advance the federal funds. It should be noted that while variations in year-to-year appropriations relative to the FFGA schedule are not uncommon, Congress has fulfilled its commitments under FFGA's consistently and this track record has made even the stand-alone GARVEE option (no back-up from other agency revenue sources) a marketable credit when properly structured. The mismatch between the federal and RTD fiscal years may also allow RTD to receive in the current RTD fiscal year (ending December 31) appropriations which become available on October 1 for the following federal fiscal year, e.g., federal FY 2012 appropriations become available in the final quarter of RTD's FY 2011. Ongoing dialogue regarding federal deficit reduction measures could negatively impact assumptions which otherwise appear reasonable in light of historical trends and recent budget requests.

- **New Starts - West Corridor.** The next largest portion (19%) of federal funding for FasTracks construction is the FFGA signed in 2009 for the West Corridor in the amount of \$308.68 million. Of this amount, 87% was appropriated through federal FY 2010, and the President's FY 2011 budget request included the remaining 13%.
- **Earmarks.** RTD's Financial Plan assumes \$102.4 million in earmarked funds. Approximately half of this amount (\$49.8 million) has already been appropriated for the DUS and U.S. 36 Bus Rapid Transit ("BRT") Corridor. RTD forecasts an additional \$7.5 million per year for the 7-year period from 2012 through 2018 (total of \$52.6 million) from future re-authorizations of the Federal Surface Transportation program based on prior receipts. This forecast represents a 50% decrease from the \$15 million annual amount RTD assumed in 2010, based on information provided in the assessment of RTD's 2010 FasTracks Financial Plan⁴. This more conservative forecast is prudent in light of recent federal budget negotiations, calls for elimination of earmarks in Congress, and the large FFGA commitment for the Eagle project.
- **Small Starts.** RTD assumes \$75 million in federal Small Starts grants for the Southeast Corridor Extension. This represents a change from RTD's 2010 Financial Plan which assumed no Small Starts funds. The following is a comparison of Small Starts basic eligibility requirements to the proposed project:
 - Small Starts grants are for capital costs associated with new fixed guideway systems, extensions, and bus corridor improvements. The Southeast Corridor Extension will add approximately 2.3 miles and three new stations to the current Southeast Light Rail Line.
 - Requests for Small Starts grants must be for under \$75 million in New Starts funds and total project costs must be under \$250 million. RTD has assumed the maximum \$75 million grant award, and the current estimate of the total project costs is \$235.7 million

⁴ Urban Engineers, Inc.'s Assessment of Denver Regional Transportation District 2010 FasTracks Financial Plan, Final Report, 21 July 2010, p. 28.

- Small Starts has a separate funding category for a total of \$200 million per year. RTD has assumed an average annual disbursement of less than 10% of this amount (\$18.75 million) over the 4-year period between 2014 and 2017.
- Small Starts offers a streamlined criteria and approval process, and the current Southeast Corridor Light Rail Line already underwent FTA's review process and received a \$525 million FFGA in 2000.

In light of the significant amount of New Starts and TIFIA funding already awarded to the Denver region and given the oversubscription of New Starts and Small Starts funding, the assumption of additional Small Starts funding may be considered aggressive.

- **CMAQ.** The Federal Highway Administration (FHWA) allocates funding to CDOT in numerous federal programs including Congestion Mitigation and Air Quality Improvement (CMAQ) funds. In turn, CDOT provides CMAQ funds to DRCOG to distribute. RTD assumes \$62.7 million in federal CMAQ funds for FasTracks construction. In its Annual Report on Funding Recommendations for FY 2012, the FTA deemed these revenue assumptions to be consistent with historical data. This \$62.7 million includes an initial \$60 million commitment from DRCOG for implementation of actual FasTracks elements and \$0.2 million of other CMAQ funding for the DUS. It also includes \$2.5 million awarded to the DUS from a second \$60 million commitment of CMAQ funds approved by DRCOG in 2008 for the FasTracks program. Another \$7.422 million of the second \$60 million commitment was awarded to the West Corridor, but RTD classifies this as third party funding (discussed below). RTD is including no other funds from the second \$60 million commitment until a required consensus is achieved on the use of the funds in specific corridors among RTD, all local governments through which the corridor runs, and CDOT if the corridor uses CDOT right-of-way, which represents a conservative change from RTD's 2010 Financial Plan.
- **ARRA.** RTD assumes \$47.4 million in American Recovery and Reinvestment Act (ARRA) funds. RTD confirmed that all the assumed ARRA funds have already been appropriated.

Transit Formula Funds. RTD also assumes receipt of \$585.2 million in federal funds for ongoing FasTracks capital renewal and replacement costs from the federal transit capital investment program (49 U.S.C. 5309) which provides not only funds for new fixed guideway systems ("New Starts") but also capital assistance for modernization of existing rail systems. A "fixed guideway" refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The statutory formula for allocating these funds contains seven tiers. The allocation of funding under the first four tiers is based on data used to apportion the funding in federal fiscal year 1997. Funding under the last three tiers (5, 6, and 7), applicable to Denver, is apportioned based on the latest available route miles and revenue vehicle miles on segments at least seven years old as reported to the National Transit Database.

Regarding the timing of the first Fixed Guideway Modernization funds, the cash flow projections prudently assume not only the aforementioned 7-year lag but also an additional 2-year delay that results from the reporting of the route miles and revenue miles to the National Transit Database

after the seventh full year of operations and the receipt of the grants following the federal budgeting process.

RTD has forecasted future Fixed Guideway Modernization funds by multiplying the dollar amount of grants now received (for fixed guideways including High Occupancy Vehicle lanes, the 16th Street Mall, and light rail transit) by the percent increase in route miles eligible for these grants in the future. So long as the service levels on the future route miles are comparable to those on the currently eligible fixed guideways (RTD has indicated that they are), this forecasting method is reasonable. RTD assumes that the grants will increase annually at the rate of inflation in 2011 and beyond, and this may be optimistic (the budget deal reached with Congress for the remainder of federal FY 2011 holds transit formula programs at the FY 2010 levels). Assuming zero escalation in both FY 2011 and FY 2012 would reduce these grants by an average of less than \$2 million per year in inflated dollars.

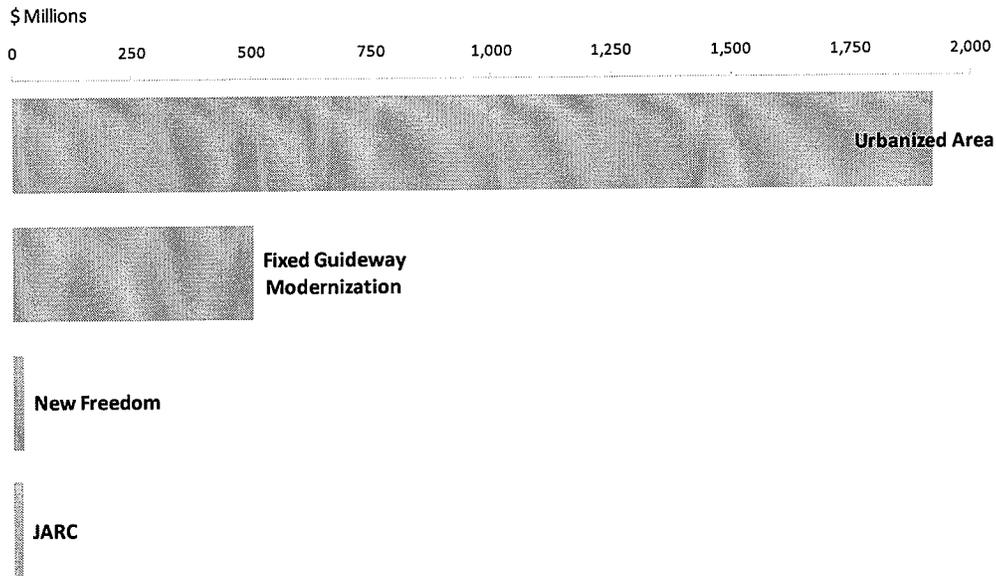
An additional risk factor results from the increasing number of transit systems nationwide that are eligible to apply for federal formula funds. Therefore, if Congress fails to “expand the pie,” then RTD’s “share of the pie” will decrease. This risk is mitigated, however, by the fact that RTD has not forecasted the additional formula funds that would become available to RTD under the fixed guideway tier of the Urbanized Area Formula Program (49 U.S.C. 5307) as a result of service on new FasTracks corridors.

Base System Federal Funds. It is important to assess the reasonableness of the federal funds assumed for not only the FasTracks Financial Plan but also the Base System Financial Plan. This is because the Base System generates a surplus to be used as a contribution to the FasTracks Financial Plan for expanded rubber tire service. If Base System federal revenues are overly optimistic/conservative, so too will be the contribution from the Base System assumed in the FasTracks Financial Plan.

RTD assumes approximately \$3.0 billion in federal funds for the Base System for the 2005-2035 time period. Of this, \$381.8 million reflects actual appropriations through 2010, and \$108.4 million is the budgeted amount for 2011, leaving a forecast total of approximately \$2.5 billion for the 2012-2035 period. As shown in the chart below, the Job Access & Reverse Commute (JARC) (49 U.S.C. 5316) and New Freedom (49 U.S.C. 5317) program funds comprise a minimal amount of future federal funds. Fixed Guideway Modernization program funds for the existing corridors comprise a more significant share (approximately 20%) of total base system federal funds. The Urbanized Area Formula Program (both the bus tier and fixed guideway tier for existing corridors) comprises a significant majority--approximately 78%--of the federal funds for the Base System. The forecasts for all these programs are based on current appropriations plus inflation; the annual growth rate assumed averages 3.0%. As discussed above, there is a risk that the growth rate in these programs will fail to keep pace with both inflation and the real growth in the number of applicants for these funds, particularly in light of budget constraints at the federal level. However, RTD’s assumed growth rate, while potentially optimistic, does reflect annual escalation of these programs averaging above inflation in recent years. Moreover, simply escalating current appropriations at inflation omits other factors that may raise the Denver urbanized area’s share of program funds, such as increasing population in the 2010, 2020, and

2030 census counts and greater population density—two key factors in the calculation of the bus tier of the Urbanized Area Formula Program funds.

Federal Funds - Base System (2012-2035)



The following table summarizes the total amount of annual federal authorizations for the major federal funding programs discussed above under SAFETEA-LU (FY 2005-2009) and in FY 2010.

SAFETEA-LU Authorization Levels

millions of dollars

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2005-2009 Total	FY 2010
FTA Formula and Bus Grants							
Urbanized Area Formula Program (Section 5307)	3,593.2	3,466.7	3,606.2	3,910.8	4,160.4	18,737.3	4,126.0
Fixed Guideway Modernization Program (Section 5309)		1,391.0	1,448.0	1,570.0	1,666.5	6,075.5	1,646.7
Job Access and Reverse Commute (Section 5316)		138.0	144.0	156.0	164.5	602.5	175.1
New Freedom (Section 5317)		78.0	81.0	87.5	92.5	339.0	99.0
FTA Capital Investment Grants							
New Starts	1,437.8	1,503.0	1,366.0	1,500.0	1,609.3	7,416.1	
Small Starts	-	-	200.0	200.0	200.0	600.0	
							1,980.0
FHWA							
CMAQ	1,667.3	1,694.1	1,721.4	1,749.1	1,777.3	8,609.1	2,058.5
TIFIA (subsidy cost of credit assistance)	122.0	122.0	122.0	122.0	122.0	610.0	122.0

Sources:

FTA:

SAFETEA-LU: http://www.fta.dot.gov/documents/SAFETEA-LU_Funding_by_Program_by_Year.pdf

2010: http://www.fta.dot.gov/funding/apportionments/grants_financing_11647.html

FHWA:

SAFETEA-LU: <http://www.fhwa.dot.gov/safetealu/fundtables.htm>

2010: <http://www.fhwa.dot.gov/legsregs/directives/notices/n4510723t1.htm>

In summary, the FasTracks Financial Plan places significant reliance on multiple sources of federal funding. RTD had to develop its Financial Plan in the context of the continuing inability of Congress to pass a multi-year authorization of federal surface transportation programs and a lack of consensus among transportation sector experts about what the new authorization might look like. RTD's projections of federal funding may be reasonable based on recent history - the Financial Plan assumes funding from several long-standing programs that have grown over the years. However, in light of the current budgetary debate at the federal level, funding of surface transportation programs may well level off or decrease under a new authorization. RTD's Financial Plan addresses this risk in that it reduced its forecasts of future earmarks, for example, and assumes no continuation of federal funds received in recent years, such as grants from the Department of Homeland Security and the FTA Bus and Bus Related Equipment and Facilities program (49 U.S.C. 5309). The addition of Small Starts grants to this year's Financial Plan, on the other hand, poses a new risk factor. In other areas where the Financial Plan relies more on recent historical trends than a potentially less generous future authorization (e.g., New Starts annual appropriations and escalation of federal formula funds), there are mitigating factors (e.g., RTD's access to short-term financing tools to advance New Starts grants and the exclusion of Urbanized Area Formula Program funds resulting from the favorable impact of future FasTracks corridors).

What amount of private sector funding is expected from the public-private partnership? Is this assumption reasonable?

The P3 entrusts the delivery of part of the Eagle Project – the East Corridor, the Gold Line, the Commuter Rail Maintenance Facility, the electrified segment of the Northwest Corridor (“NWES”), and electrical systems at DUS - to the Concessionaire, DTP.

RTD's Financial Plan assumes that the \$2.2 billion in capital expenditures for the entire Eagle Project will be funded from the \$1.03 billion New Starts federal grant described above, supplemented by a combination of Sales and Use Tax pay-as-you-go capital, revenue bond proceeds, other federal and local contributions, and finally the Concessionaire's long-term financing raised under the P3 agreement. The \$487 million in financing attributed to DTP in the Financial Plan appears to be generally reasonable and is consistent with the P3 financial structure. This amount has been secured by the DTP through:

- \$54 million in equity by John Laing, Uberior (subsidiary of UK-based Lloyds Banking Group) and Fluor;
- \$398 million of private activity bonds, offering \$80 million in semi-annual maturities as well as \$318 million in term bonds (rated Baa3/BBB- by Moodys/Fitch Ratings); and
- A net amount of \$35 million corresponding to bond proceeds' interest earnings and the reconciliation of DTP's construction payment financing and other miscellaneous financial assumptions.

This amount is lower than last year's \$541 million estimate that was based on P3 financial projections developed prior to receipt of competing bid proposals. DTP structured a proposal featuring total capital costs below RTD's engineering estimates.

It must be acknowledged, however, that the private activity bonds and equity commitments are predicated on payments from RTD that are derived ultimately from its Sales and Use Tax. There is no independent revenue stream supporting the service payments RTD is required to make to the Concessionaire. A failure to achieve Sales and Use Tax revenue forecasts could lead to a restructuring of these service payments, as well as RTD's other Sales and Use Tax-related obligations (senior debt, COPS, DUS bond commitments).

Although the risk related to the \$1.03 billion FFGA for the Eagle Project is considered relatively minor, should Congress fail to approve the FFGA, the P3 agreement contains a provision that would rescind all Phase 2 elements from the P3 scope. RTD would then have to directly deliver the Gold Line and the NWES corridor outside of the P3 agreement, under revised financial and scheduling assumptions. In order to close the Phase 1 funding gap, the P3 agreement gives RTD the option to either (1) increase Phase 1 construction payments by \$320 million (which would require increased pay-as-you go capital injections and/or sales tax or COPS borrowing), or (2) instruct DTP to finance an additional \$472 million. Under such circumstances, however, governmental sources of financing, such as sales tax revenue bonds or COPS, may prove more cost effective than additional P3 financing. Additional P3 financing would also be subject to TABOR restrictions, which has not been considered in the baseline TABOR capacity analysis.

Please refer to the Financing Assessment Section for additional considerations on the P3 contract.

What other funding sources are expected (e.g. DRCOG-awarded federal funds, local government contributions, COPS)? What is the availability of these sources? Are these assumptions reasonable?

RTD assumes \$130.7 million in contributions from local jurisdictions equal to 2.5% of eligible corridor costs which equates to 1.9% of total project costs. RTD has indicated that these contributions are predominantly in-kind and may not necessarily represent monetary contributions. RTD has also indicated that intergovernmental agreements securing these contributions are a condition precedent to advancement of the corridors into construction, including local station stops, and that these agreements are under negotiation or remain to be negotiated. RTD assumes an additional \$29.6 million (including \$7.3 million in CMAQ funds as discussed above) in other third-party contributions from the Colorado Department of Transportation ("CDOT") and DRCOG, \$22.0 million of which was assumed for 2010 and 2011.

RTD also assumes third-party contributions of \$181.8 million related to the DUS.⁵ Of these, \$164.5 million correspond to project costs incurred by the DUSPA. This contributed capital is separate from the \$168 million RTD contribution to the DUS financed through a 30-year DUS note. CDOT will contribute the remaining \$17.4 million.

DRCOG-awarded CMAQ funds are addressed under the section on federal funding above. Certificates of Participation ("COPS") are addressed in the Financing Assessment section below.

⁵ Note these third-party contributions are funding work elements of the Denver Union Station capital improvements which are not directly related to the FasTracks program and therefore are not included in the \$6.7 billion total capital cost amount.

Finally, the Financial Plan shows \$569 million cash generated over 2005 - 2035 by investment income on sales tax revenues and bond proceeds in escrow. This contributes to reducing the operating subsidy required from the sales tax. The 1.5% annual earning rate assumed by RTD appears to be aggressive in the short-term given the current yields on high-quality, short-maturity instruments (RTD earned a 0.17% weighted average annual rate on eligible investments last year from its 2010 bond/COP proceeds). Increases in interest earnings over current levels may be accompanied by higher borrowing costs in the future, and these trends should be monitored regularly in future analysis of RTD's financial assumptions. Under a reduced Sales and Use Tax scenario, the total investment income would necessarily be decreased as the cash balances would be reduced to meet additional pay-as-you-go contributions. The "low point" Sales and Use Tax sensitivity analysis shows a \$187 million decrease in investment income. Under a sudden economic shock scenario, the reduction would be more severe, especially if a funding shortfall occurs during the construction period.

Comment on the reliability of each of the above sources. Identify which of the above sources have been committed. Identify needed steps to secure the funds for those not yet committed.

RTD has not provided a detailed accounting of which contributions from local jurisdictions are already committed. However, RTD has explained that a commitment of local contributions would generally be a prerequisite for negotiation of intergovernmental agreements which in turn are a condition precedent to advancement of the corridors into construction, including local stations stops. This sequence mitigates the risk that the contributions from local jurisdictions will not be committed.

The \$181.8 million in third-party contributions has been committed: CDOT's contribution was/is assumed for 2010/2011. DUSPA's \$164.5 million contribution is part of a \$480 million project for which construction began in earnest in February 2010. Funding for the DUS project includes federal TIFIA and Railroad Rehabilitation and Improvement Financing ("RRIF") loans that have already closed.

Have sensitivity analyses been performed on the revenue estimates? Summarize the analyses and the results. What are the best and worst case scenarios for each source as presented in the Financial Plan?

RTD has provided a sensitivity analysis examining the impacts of a decrease in the Sales and Use Tax revenue stream over 2014 - 2035. The analysis assumed the more conservative, "low" scenario developed with the methodology confirmed by the Regional Sales and Use Tax Working Group. This scenario assumed a 2.77% Sales and Use Tax compounded annual growth rate over 2005 - 2035 (or 3.20% from 2010 onwards) as opposed to 3.66% and 4.28%, respectively, under the base Financial Plan. Using this "low" scenario, the total FasTracks Sales and Use Tax collections would be 10.9% lower over the 2005 - 2035 period (or 11.6% lower over the remaining 2010 - 2035 period), but the system would still be completed by 2019, as the upfront capital funding plan would remain identical to the base 2011 Financial Plan. Reduced growth in Sales and Use Tax would appear through reduced cash balances over time and ultimately would require RTD to issue approximately \$800 million of COPs to fund capital

replacement needs for both FasTracks and the base system in 2033. This additional debt would necessarily increase RTD's debt service expenses through retirement of all debt in 2050. Finally, net debt service coverage ratios would stabilize in the 1.25 to 1.40 times range after 2019, slightly above the 1.20 minimum level set as RTD's debt policy, rather than gradually increasing to 2.35 times under the base case .

As evidenced during the recent financial crisis, the FasTracks Sales and Use Tax collections are heavily sensitive to periods of economic downturn. The occurrence of another "shock event" of similar or even lesser magnitude but possibly longer duration would negatively affect FasTracks' cash flow and capital funding plan (should this happen prior to the full completion of the program). Unlike a lower, but relatively constant long-term average growth rate in Sales and Use Tax revenue, sudden changes could impact RTD's ability to fulfill its commitments on a full and timely basis. Similarly, recent Congressional actions point to the possibility of a major change in the direction of federal transportation programs. Seizure of the financial markets in late 2008 and early 2009 affected both access to credit and its cost. The sudden nature of a revenue shock requires risk mitigation measures to be put in place in advance to address a sudden financial gap. DRCOG and RTD have tended to focus on the "reasonableness" of various assumptions in light of historical experience, and we would recommend that, in addition, greater attention be given to the likely mitigation and recovery measures that the rapid onset of adverse changes in the future could necessitate. RTD has indicated that such measures might include management decisions to delay capital expenditures, reduce service levels, draw on accumulated cash balances, and/or restructure debt.

In terms of "upside", RTD has not provided a detailed sensitivity analysis detailing the financial impact of the "high" Sales and Use Tax scenario based on a 4.19% compounded growth rate over 2005 - 2035 (or 4.92% from 2010 onwards). Benefits to the FasTracks Financial Plan would include increased net cash flow which should allow accelerated debt retirement and ultimately allow an earlier sunset for the existing and projected increase to the FasTracks-dedicated Sales and Use Tax. The completion of the system would not be expected to accelerate from the 2019 date under this upside scenario as the early years of the capital funding plan should remain largely unaffected, as was the case in the downside sensitivity analysis.

The 2011 base Financial Plan and "low" and "high" scenarios described above assume that RTD will ask voters in 2011 to approve a 0.4% FasTracks Sales and Use Tax increase, and that the measure passes and becomes effective January 1, 2012. Should the vote and effective doubling of the FasTracks-dedicated Sales and Use Tax be postponed by a year, the capital funding plan would sustain a reduction of \$167 million in revenues which may necessitate slightly delaying the completion of the program as well as a slight reorganization of the debt financing planned.

Finally, should the 0.4% tax increase be rejected, RTD has indicated the system may not be completed before 2042, although different alternatives would need to be evaluated under such a scenario.

VII. FINANCING ASSESSMENT

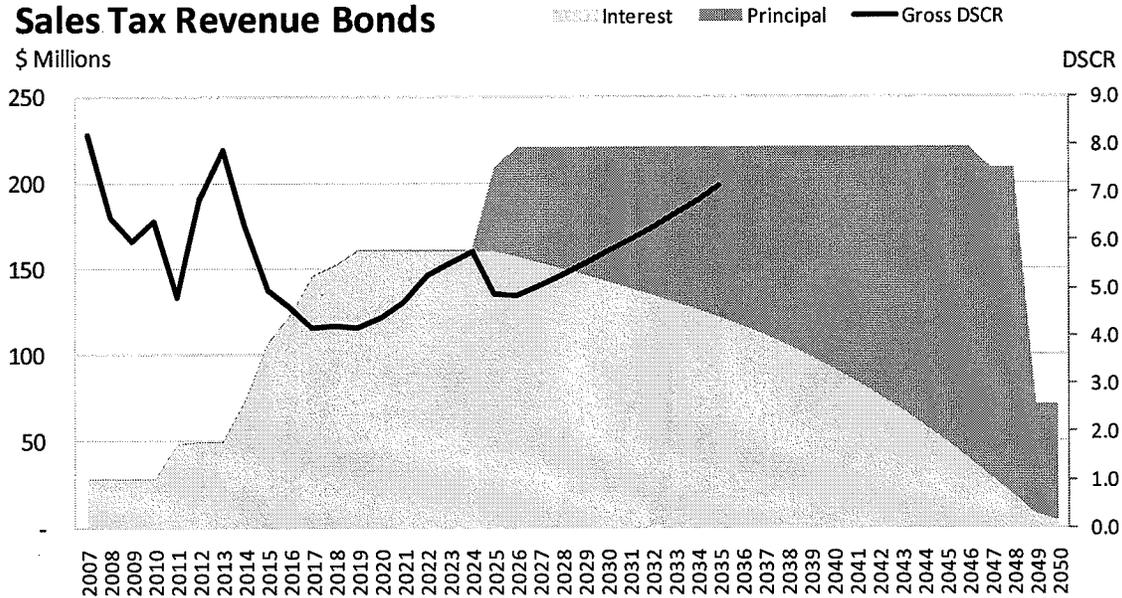
What debt issuance instruments are being used to finance the FasTracks program and in what amounts? What are the debt retirement schedules of each? Are the revenue sources being used to service the debt clearly identified? Are other projects being funded from the same sources? What interest rates and coverage rates have been assumed? Are they reasonable?

Debt issuance instruments underpinning the FasTracks program include the following:

- **Sales tax revenue bonds.** Net proceeds from sales tax revenue bonds (\$2.5 billion) are the largest source of capital funds (39%) for the FasTracks program. Of the \$2.9 billion⁶ in bond issues, \$1.0 billion has already been issued with final maturities in 30 - 40 years. RTD forecasts additional bond issues in 2014, 2016, and 2018 totaling \$1.9 billion with final maturities in 30 years. All outstanding and proposed sales tax revenue bonds are to be retired, in full, by 2050. As can be seen in the chart below, principal payments are heavily back-ended. The back-ended principal amortization schedules of the proposed bond issues pose a higher risk in the event of failure to achieve long-range Sales and Use Tax growth projections; however, RTD's previously issued bonds were also substantially structured as interest-only in the early years of the repayment period. Maximum annual debt service (MADS) on the sales tax revenue bonds tops out in 2026 and remains steady or decreases until final maturity, while the sales tax revenues generated by both the existing 0.4% FasTracks-dedicated Sales and Use Tax and the assumed 0.4% increase - source of revenues pledged toward bond repayment - are forecasted to grow over time. Consequently, the gross debt service coverage ratio (DSCR) exceeds the minimum 2.0 times set by RTD debt policy and is projected to grow through the 2035 forecast year in the RTD Financial Plan potentially improving the debt structure's credit strength for the outer years.

⁶ Gross proceeds cover not only \$2.5 billion in construction fund deposits but also financing costs and deposits to reserves.

Sales Tax Revenue Bonds



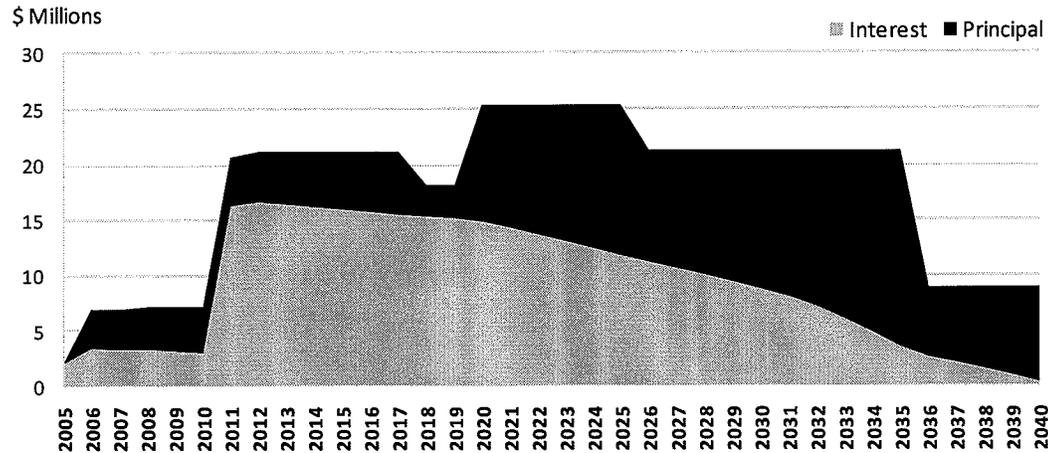
DSCR = Debt Service Coverage Ratio

According to RTD's 2011 Adopted Budget, FasTracks bonds are rated AA- by Fitch, AA+ by Standard & Poor's, and Aa3 by Moody's Investor Services. The proposed bonds are forecasted to be issued with a fixed interest rate of 5.85%. As explained in the RTD Financial Plan, this reflects a 100-basis point spread over RTD's 10-year historical estimated financing cost which in turn is based upon the 4.72% average of the 30-year Municipal Market Data (MMD; high grade municipal bond index). The current 30-year MMD Index (as of June 6, 2011) is 4.44%.

Current interest rates are at a historically low point and are expected to move higher as the economy continues to recover. Thus, market expectations of future interest rates (which can be assessed by deriving forward rates from the current spot yield curve) are important to consider. Based on municipal market data as of June 6, 2011, the forward rates for 30-year, "AA"-rated bond issues in 2014, 2016, and 2018 would be 4.81%, 4.97%, and 5.00%, respectively. That these forward rates are below RTD's 5.85% assumption lends support to RTD's interest rate assumptions.

- Certificates of Participation (COPs).** Net proceeds of \$251.5 million from COPs, a form of lease purchase transaction for financing rolling stock and other transit equipment, comprise 3.7% of capital funds for the FasTracks program. RTD has already issued (in 2005 and 2010) the FasTracks-related COPs assumed in the Financial Plan. The COPs are secured by the underlying leased assets and system revenue (including the full existing 1% sales tax after bond debt service is paid), subject to annual appropriation. Because the COPs are subject to annual appropriation, they are not subject to TABOR restrictions. The COPs are also secured by separate debt service reserve funds fully funded at closing. The debt retirement schedules are shown graphically in the chart below.

COPS - Amortization Schedule



- Grant Anticipation Revenue Vehicles (GARVEEs)** – A GARVEE is a debt financing instrument, such as a bond, note, certificate, mortgage, lease, or other debt financing technique, that has a pledge of future Title 23 Federal-aid funding. RTD anticipates issuing \$250 million in short-term debt in 2013 and 2014 to advance federal New Starts grants for the Eagle Project that RTD expects to receive through 2018. While RTD currently assumes it will use GARVEE debt, it may also structure this short-term debt as a sales tax borrowing, or with a double pledge. This decision will be made closer to the time of issuance to provide the best combination of flexibility and pricing for the District. This borrowing would likely be subject to TABOR requirements, however, since RTD anticipates using a multi-year appropriation to secure the debt repayment.
- Denver Union Station Note** – RTD issued a \$168.0 million, 30-year, subordinate lien bond in July 2010 to the DUSPA to finance a portion of the RTD contribution to the DUS project. Under the bond agreement, RTD will make annual payments of \$12 million to DUSPA. The annual payments are structured as a fixed-rate bond with a 5.85% interest rate. The revenues pledged by RTD toward repayment of the note are the full 1% sales tax proceeds after senior lien debt service is paid. The bond is subject to TABOR requirements.

Note that all of the obligations described above are based upon RTD’s Sales and Use Tax. In addition, the commitment for service payments to the Eagle Concessionaire is derived in large part from the Sales and Use Tax. These combined obligations over time will reduce RTD’s flexibility to respond to sudden changes in economic conditions. Because of the gross revenue pledge on the Sales and Use Tax bonds, service cuts and other operating budget reduction measures may be required in a downturn to fund debt service and meet coverage ratio constraints. Managing the agency through episodes of economic disruption and/or abrupt changes in federal policies regarding future grant and loan programs, such as those now under consideration, will be challenging given the volatility of Sales and Use Tax revenues. For this reason, future financial plans should give greater emphasis to mitigation measures to minimize the impacts of sudden shocks, rather than depending on the “reasonableness” of long-range assumptions.

No commercial paper debt is outstanding, nor is any commercial paper debt assumed in the forecast period. Moreover, no federal loans are assumed. Although the 2011 FasTracks Financial Plan includes no provisions for a TIFIA loan, RTD does anticipate submitting an application in the spring of 2011 for a TIFIA loan in the amount of \$280 million toward the non-federal share of the Eagle Project, which would also be repaid from Sales and Use Tax proceeds. If RTD was to submit the application and it were approved, the effect would need to be incorporated into the future FasTracks Financial Plan. On a positive note, RTD was one of only four project sponsors, among more than 30 applicants, whom the U.S. Department of Transportation (USDOT) in 2010 invited to submit an application. The award of a subordinated TIFIA loan would serve only to strengthen RTD's Financial Plan, although springing lien considerations would need to be addressed in light of the RTD senior bonds⁷. A TIFIA loan would likely result in a lower cost of debt⁸ and more favorable terms and conditions as compared to the sales tax revenue bonds that the TIFIA loan would replace (in part). The more favorable terms and conditions include interest capitalization (with cash flow benefits for RTD), subordination to senior debt, and avoidance of a negative "carry" resulting from an upfront bond issue rather than draws on a loan as construction funds are needed. While a TIFIA loan would still be supported by Sales and Use Tax revenues, it is technically a subordinated credit (with a "springing lien" feature) that would be provided by a potentially more understanding lender (USDOT) that could help RTD in restructuring its obligations in the event current forecasts are not realized, or if a sudden drop in revenues were to occur. In this sense, RTD would be able to share the Sales and Use Tax volatility with USDOT through a TIFIA loan.

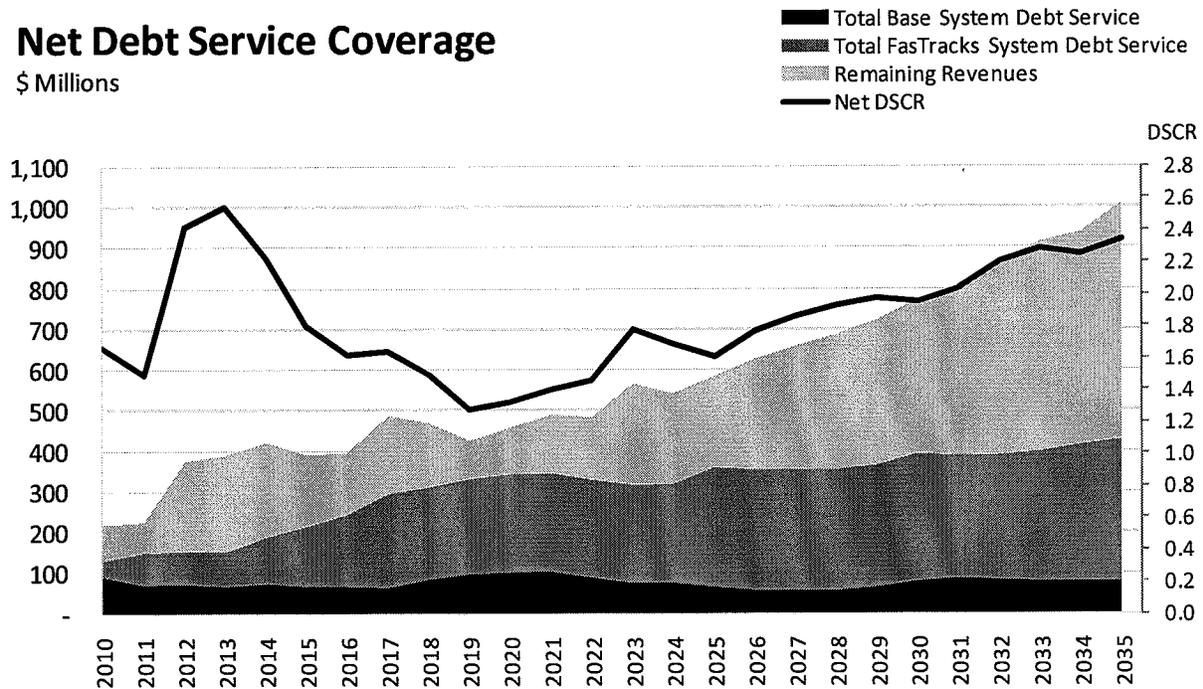
RTD's debt policy requires revenue net of operating expenses to cover all debt and repayment obligations by a level of at least 1.2 times. Over the 2010 - 2035 period, the net DSCR achieves a minimum of 1.28 times in 2019 and grows steadily thereafter if revenue and expense forecasts are realized. The debt and repayment obligations consist of debt service on the sales tax revenue bonds, COPs, GARVEEs, the DUS lease payment, and the capital portion of service payments to DTP. As can be seen in the chart below, the growing net Debt Service Coverage Rate (DSCR) after 2019 results from the growth in the remaining revenues (all revenue net of debt and repayment obligations) while debt and repayment obligations remain relatively flat. These ratios also assume that operating and maintenance costs taken "off the top" of RTD's gross revenues are managed so as to remain within current projections.

⁷ Statutory requirements require the subordinated TIFIA loan to spring to parity with senior debt upon occurrence of bankruptcy-related events.

⁸ The borrowing rate is based on the State and Local Government Series index plus one basis point, or 4.28% on June 7, 2011.

Net Debt Service Coverage

\$ Millions



DSCR = Debt Service Coverage Ratio

What financing role does the public-private partnership play? Describe how that is intended to work. Are the assumptions reasonable?

RTD successfully concluded the P3 procurement in 2010 for the Eagle Project comprising all commuter rail-related work with the exception of the North Metro and Northwest Corridors. The concession agreement was executed on July 9, 2010, and DTP achieved financial close (triggering the notice-to-proceed, or “NTP”, from RTD) on August 12, 2010⁹.

The P3 structure provides a means to finance a portion of the capital costs for the Eagle Project over a 34-year period and also blends this financing responsibility into a long-term delivery contract with design, construction, operations and maintenance responsibilities. Under this design-build-finance-operate-maintain (DBFOM) contract, the Concessionaire, DTP, is responsible for delivering and operating the commuter rail services on a “fixed price” basis in exchange for construction milestone payments (totaling \$1.1 billion) and a 28-year stream of service payments (\$3.9 billion in total from the 2016 scheduled opening through 2044).

Construction Payments

RTD pays for a large amount of the P3 capital costs through \$1.1 billion in construction payments between 2010 and 2016. Because the inclusion of Phase 2 works (the Gold Line and Northwest Electrified Segment) as part of the Concessionaire’s scope is not yet confirmed (RTD expects to give the NTP pursuant to the receipt of the FFGA in the summer of 2011), the P3

⁹ a number of Amendments were implemented upon financial close, including the reduction of the concession period from 46 to 34 years and associated restructuring of the service payment outlays

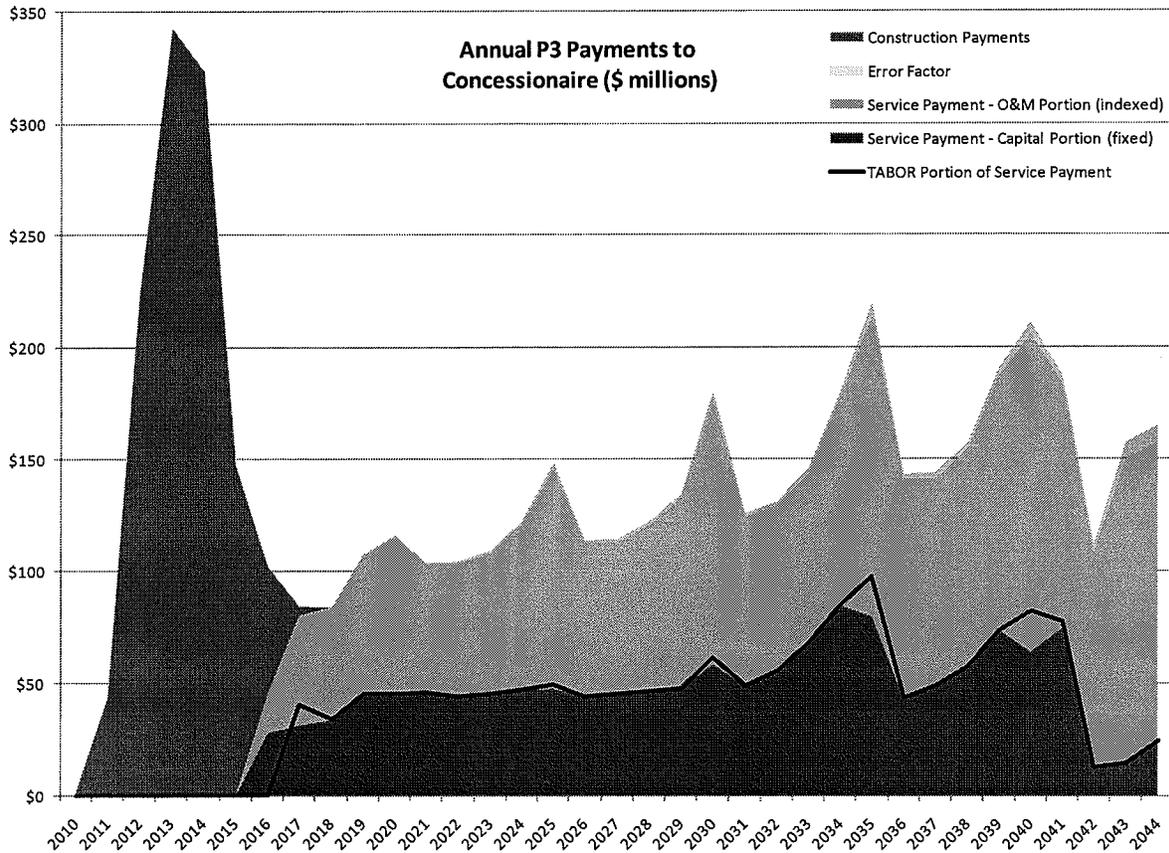
agreement escalates the \$484 million related to Phase 2 capital improvements between March 2010 and the NTP date for Phase 2, using a composite index factoring in the national construction labor cost index, the producer price index for highway and street construction, and the producer price index for other heavy construction tracked by the Bureau of Labor and Statistics (weighted at 40%, 30% and 30% respectively). RTD has stated that the “unallocated contingency” line item in the Financial Plan’s capital cost forecast includes appropriate contingencies for such payment increases but no specific data has been provided. The payments have the potential to increase by as much as \$30 million, as the preliminary April 2011 values of the relevant producer price indexes have increased somewhat since March 2010¹⁰.

P3 Long-Term Financing and Associated Risks

Pending the indexation of Phase 2 construction payments, RTD has secured an all-in price for not only the asset construction and financing but also its successful operations and State of Good Repair. The service payments – which cover operations and maintenance costs, debt repayment, and DTP’s return on investment – are subject to deductions triggered by unavailability or sub-performance violation events. As such, the private partner, DTP, is at risk for full compensation for both its operations and maintenance expenses and a portion of its initial capital expenditures. On the other side, RTD retains exposure for certain relief events during the construction period or changes in conditions that may surface once revenue operations begin (such as higher service levels than provided in the base contract, or new requirements imposed by changes in law). These retained risks could ultimately result in higher costs to RTD than are currently reflected in the Financial Plan.

The split between the capital and operations and maintenance portions of the service payment over time is shown in the chart below. The “lumpy” profile of the service payments is assumed to be caused by the renewal and rehabilitation costs categorized as operations and maintenance.

¹⁰ The PPI-highway and street construction and PPI-other heavy construction indexes have been discontinued individually by the Bureau of Labor and Statistics in June 2010 and combined into a PPI-other non-residential construction index. A combined tracking shows a 10.4% increase from March 2010 to the preliminary April 2011 data. On the other hand, the preliminary May 2011 value of the labor index is relatively close to its March 2010 level.



Note that while the capital portion – which includes the repayment of the design and construction costs as well as financing costs and fees – is fixed over the contract life, the operations and maintenance portion is escalated through 2044 according to a composite basket of consumer price index, a national labor cost index, and a material & supplies rail cost index, each respectively weighted at 24.5%, 50%, and 25.5% of the combined escalation factor, which could cause the service payments eventually owed by RTD over the concession term to exceed the \$3.9 billion total disbursements through 2044 set forth in Table 12 of the Financial Plan Summary¹¹. RTD has budgeted service payments based on a 2.4% compounded growth rate for the combined index, which might provide limited cushion under economic periods marked with high inflation or commodity price volatility. RTD has indicated that the anticipated level of its FasTracks cash balances - \$2.7 billion by 2035 – would cover such shortfall¹². During inflationary periods Sales and Use Tax revenues would also trend upward to help offset the change in costs. It should also be noted that if RTD retained O&M responsibility as it does for the other corridors, it, too, would face exposure to CPI, materials and labor cost escalation in the form higher O&M costs if inflation exceeds expectations.

¹¹ RTD has confirmed the operations and maintenance portion of the service payments have been underestimated in the Financial Plan and model due to a formula error. However, correction of the error shows the difference to be relatively minor (\$35 million through 2035, \$74 million through 2044) compared to the overall cost of the program.

¹² As a reference, a 3.0% compounded growth for the combined escalation index would increase service payments by a total of \$283 million through 2044.

In addition to long-term CPI risk exposure, the insurance premium benchmarking regime described in Section 34 of the P3 agreement could lead to supplements to RTD's annual service payments, although this risk's impact appears to be even lower in absolute dollar terms than that associated with operations and maintenance cost index exposure. This risk also can be managed by periodic adjustments to coverage requirements through mutual agreement with the Concessionaire.

Nature of the Financing

The de-facto financing provided by DTP for the fixed capital portion of the service payments is recognized by the P3 contract structure in that the service payment is broken down into a tranche structured as a multi-year authorization subject to TABOR (utilizing \$590 million total principal capacity and \$848 million total interest capacity) and a non-TABOR tranche payable from RTD's operating budget, subject to annual appropriation. As shown in the table above, the fixed capital portion outlays substantially match the TABOR tranche annual amounts.

The TABOR backing allowed DTP to secure 30-year financing on attractive terms by issuing \$400 million of tax-exempt private activity bonds for which RTD secured an allocation from USDOT and then acted as the conduit issuer. The credit of the bonds was viewed as a Sales and Use Tax pledge (subordinate to debt service on RTD's base system and FasTracks revenue bonds), with additional notching down caused by a high 88:12 debt-to-equity ratio, relatively low debt service coverage ratios of 1.35 times, and project risk associated with the successful construction, management, operations and maintenance of the P3 portion of the Eagle Project. The private activity bonds were assigned Baa3/BBB- ratings by Moody's and Fitch, and the serial/term bonds were priced 217 to 247 basis points above the MMD AAA index or between 4.8% and 6.1%. When compared to the pricing of RTD revenue bonds, for example, these rates proved to be very attractive for tapping RTD's subordinated sales tax credit with less onerous coverage ratio covenants and the added benefit of transferring considerable project risk. However, the rates need to be considered alongside the equity investment, which typically yields around 12% for availability payment-type transactions similar to the Eagle P3. The weighted cost of capital would therefore range between approximately 6.0% and 6.5% for the P3 delivery.

Finally, the TABOR-secured portion of the service payment provides a mitigation measure to the termination of the P3 agreement (whether for DTP default, RTD default, or extensive force majeure event) which would give rise to a large (several hundred million dollars) compensation payment from RTD to DTP. Under a termination scenario, the P3 financing would indirectly be accelerated or subject to a mandatory prepayment (along with other cost, compensation, and damage adjustments both up and down) except for the TABOR portion and its related debt service payments scheduled through 2044 which would be preserved as a long-term RTD payment stream. However, in order to wind up the Concessionaire's debt under a P3 contract termination scenario, RTD would have to make reasonable efforts to "refinance" those TABOR payments with direct RTD debt in order to discontinue its financial obligations to DTP. Only the excess portion of the compensation amount due in full upon termination would be subject to RTD appropriation.

VIII. SUMMARY ASSESSMENT

Are all assumptions clearly described? Are all sources and uses of funds clearly identified?

RTD provided a detailed list of the key assumptions employed in their 2011 FasTracks Financial Plan (see Section III of this report). Urban and JPA reviewed and validated that all key assumptions stated (or later clarified) by RTD were included in the Financial Plan. We believe that an adequate representation of the key assumptions was made, however, in the future years, RTD should provide a bit more detail on some of the “soft cost markups” used in their capital cost, bottom-up estimates, as well as any assumptions on productivity levels used in estimating construction costs.

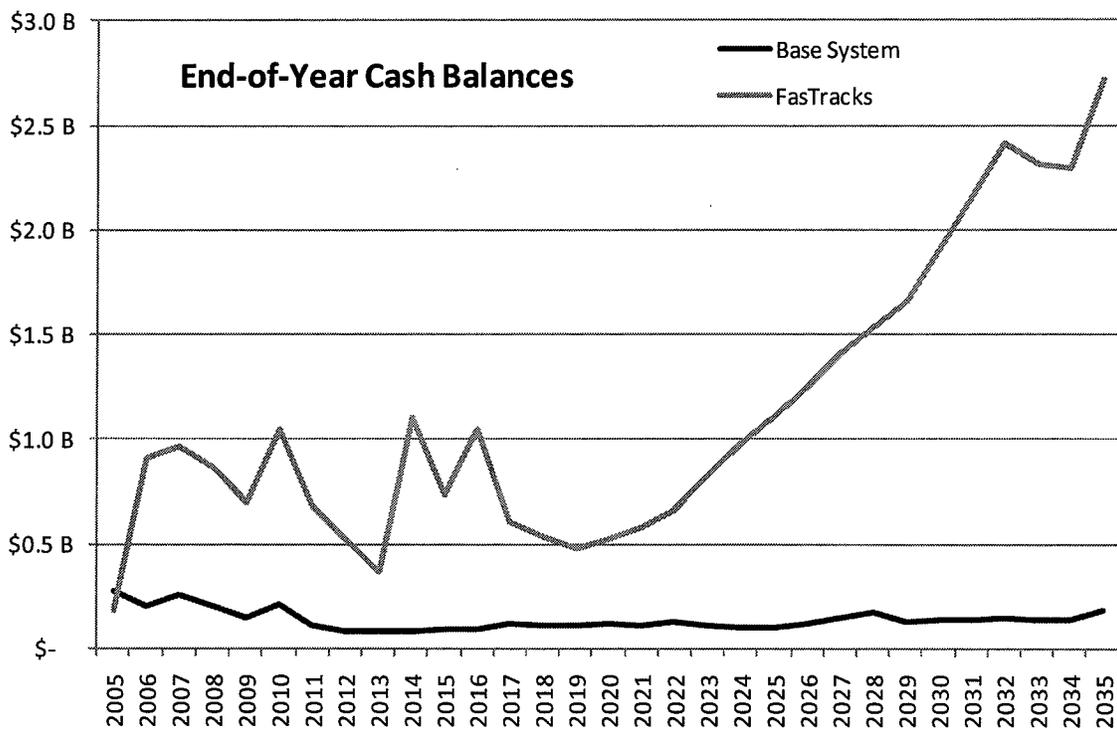
A detailed review of RTD’s Financial Model supporting the 2011 Financial Plan was performed and necessitated several prolonged discussions with RTD staff, as well as their consultants, Goldman Sachs and FirstSouthwest Company in understanding the logic, document flow and assumptions included in the Financial Model. As a result of this review, Urban and JPA were able to verify that RTD’s 2011 FasTracks Financial Plan provides a clear definition of the capital and operating uses contained within the current project estimates, as well as the revenue sources, and debt assumptions that are in place to finance FasTracks-related costs.

Analyze the cash flow and indicate years of surplus/deficit. If there are deficits, what is their magnitude? Are they (or how are they) covered?

RTD raised a significant amount of funding for the FasTracks system in 2010 through various borrowing instruments and ended the year with a balance in excess of \$1 billion. Annual net cash flow projections from 2011 through 2019 are negative due to the capital expenditures with the exception of 2014 and 2016 when revenue bond issuances will temporarily replenish the FasTracks cash balance. The cumulative net cash flow decreases by \$575 million during this period. Once the system is fully built, all annual cash flows are projected to be positive through 2035, with the exception of 2033 and 2034, when a series of rehabilitation and replacement expenses are planned in conjunction with parking improvements. With the assumed passage of the additional 0.4% Sales and Use Tax under the 2011 Financial Plan (raising an additional \$6.89 billion over 2012-2035), cumulative net cash flow is forecasted to be \$2.72 billion over the 2005-2035 period, with a 2035 FasTracks future construction fund balance of \$2.48 billion by 2035 – which can only be spent on FasTracks per the 2004 voter’s authorization (capital, financing or operating uses).

On the base system, annual net cash flows show relatively minor surpluses or deficits depending on the years, but are generally below \$20 million per year. Years generating a higher deficit are usually preceded by the build-up of a higher cash balance over the previous years¹³. The base system’s cash balance is expected to remain relatively stable around \$100 million from 2011 through 2025, and ultimately increase to approximately \$182 million by 2035, down from an initial opening balance of \$381 million in 2005.

¹³ For example, 2011 is expected to generate a cash deficit of \$100 million due to capital improvements, but RTD had in excess of \$200 million to cover those outlays.



Are there contingency plans to address unanticipated funding shortfalls? What considerations were assumed? What do these contingency plans show?

As stated previously, RTD has provided a sensitivity analysis addressing the effects of a long-term reduction in Sales and Use Tax revenue growth. However, RTD has not provided sensitivity analysis addressing sudden, unanticipated shortfalls with varying recovery periods. Such shortfalls could result from an economic shock similar to that experienced in the 2008-2009 period or from federal funding reductions. With only half of the capital program under contract, higher construction costs, caused by spikes in commodity prices or otherwise, may also generate shortfalls. RTD explains that its Board of Directors will take actions as warranted by the specific circumstances of any unanticipated shortfall, and such action cannot be addressed at this time due to the potential for unnecessary political discord. Rather, RTD highlights a number of management actions that may be taken to mitigate the effects of a sudden, unanticipated shortfall, such as delaying capital expenses, implementing service cuts, drawing on cash reserves, and restructuring debt instruments. Because certain corridors are already under contract, potential funding shortfalls would likely not affect them. As such, mitigation measures such as delayed capital improvements would probably affect the remaining future corridors' completion schedule.

As the FasTracks capital program progresses through construction, revenue and costs projections become more certain and overall risk gradually decreases. However, some financial risk

elements have also materialized since the original 2004 Financial Plan – which is partially responsible for the proposed 0.4% increase in Sales and Use Tax. Given the nature of the current reauthorization dialogue at the federal level and continued uncertainties in economic and financial markets, RTD may not be able to leverage additional revenues in the future to address new financial stress events, if any were to occur. Consequently, while the key assumptions incorporated into the 2011 Financial Plan generally can be considered “reasonable”, we would recommend that RTD continue to regularly engage in sensitivity analysis and develop a number of economic stress tests based on sudden unanticipated shortfalls. Further, RTD should assess the adequacy of measures and options currently within its toolkit to offset or mitigate any negative effects to the program.

APPENDIX A

Reference Data

In performing the Assessment of the Regional Transit District's 2011 FasTracks Financial Plan, Urban Engineers, Inc., in association with Jeffrey A. Parker & Associates, Inc. reviewed the documentation and information listed below (in no particular order of significance) as provided by RTD and DRCOG. Additional statements and clarifications were also provided by RTD as part of Urban/JPA review process.

1. RTD's Annual Program Evaluation (APE) 2011 Financial Plan Approval – Staff Recommendation (Slide Presentation), dated January 25, 2011
2. RTD's Summary of Core Financial Assumptions to be used in the 2011 FasTracks Financial Plan
3. Draft 2011 FasTracks Cash Flow Worksheet
4. RTD's 95% Design Estimate Summary for the I-225 Corridor
5. RTD's 31% Design Estimate Summary for the Northwest Corridor
6. RTD's FasTracks Financial Model, 2011 Election Scenario, v 75.01 (2011 APE, 2012 ST Increase), dated March 21, 2011
7. RTD's FasTracks Financial Model, 2011 Election Scenario; 0.4% Low - Sensitivity , v 77.01 (2011 APE, 2012 ST Increase), dated March 30, 2011
8. RTD's 2011 FasTracks Financial Plan Update – Summary, dated March 23, 2011
9. RTD's Integrated Financial Model Specifications Booklet, dated May 20, 2010
10. A Series of Detailed Bottom-Up Estimating Spreadsheets and Data Supporting the Following Samples Corridors
 - Westside Corridor (Contracted)
 - I-225 Corridor (Light Rail Bottom-Up Estimate)
 - North Metro (Commuter Rail Bottom-Up Estimate)
11. Construction Inflation Workshop Meeting Notes 11-23-10 (from DRCOG).
12. Agendas, Meeting Notes, and a White Paper (from RTD, dated January 20, 2010) from several RTD-facilitated Sales & Use Tax Workshop conducted on October 26, 2010
13. Various Contract Excerpts from RTD's executed Concession Agreement with Denver Transit Partners, dated July 9, 2010

14. RTD's Core Financial Assumptions to be used in the 2010 FasTracks Financial Plan
15. RTD Summary of Sensitivity Analysis for Low Sales & Use Tax Proceeds, Assuming 2011 Election, dated March 31, 2011
16. Draft Funding Agreement, dated March 12, 2010 between RTD and Denver Union Station Project Authority (DUSPA)
17. Summary of Bus & LRT Operations & Maintenance Cost Model Update, produced by Connectics Transportation Group for RTD, dated June 22, 2009
18. Summary of Commuter Rail Operations & Maintenance Cost Estimate report, produced by Front Range Systems Consultants, dated September 4, 2009

APPENDIX B

Bottom Up Estimating Procedure for the RTD-FasTracks Program

1. "Heavy Bid" by HCSS, Inc. is the standard estimating software that will be utilized for producing all RTD-FasTracks program estimates and it has the following capabilities:
 - Preprogrammed material and subcontract costs that are pertinent to the RTD-FasTracks program. These will be updated for each major estimate, especially for those materials and subcontracts that comprised the largest costs (rail, ties, MSE wall panels, MSE wall select backfill, embankment borrow material, concrete, reinforcing steel, structural steel, pre-stressed concrete bridge girders, etc.).
 - Preprogrammed labor rates for the various classifications (i.e., laborer, carpenters, semi-skilled, bulldozer operator, etc.). We will continually monitor the latest Davis-Bacon decisions and update the labor rates accordingly, whenever an updated wage rate decision has been issued.
 - Preprogrammed equipment rates for most types of equipment. These will be periodically revised whenever there are any major changes to either the ownership or operating costs with yearly updates to the Rental Rate Blue Book for Construction Equipment.
 - Preprogrammed crew assemblies for the most common heavy/highway/transit/rail types of work.
 - The ability to customize the labor rates, equipment rates, crews, etc. to fulfill job-specific requirements.
 - The ability to modify the labor burden categories (payroll taxes, workman's comp rates, fringe benefits, hours greater than 40 per workweek factor, etc.).
 - Preprogrammed typical heavy/highway/transit/rail pay items that have built-in unit prices.
 - Preprogrammed activities from past estimates, which contain a checklist of indirect costs (supervision, engineering, quality control inspection and testing, survey, field office, equipment maintenance and mechanic, etc.) typically encountered on heavy/highway/transit/rail types of projects.
2. The FasTracks Standard Production Rates have been developed for most of the work activities that are typically encountered on FasTracks projects. For the majority of the individual work activities, there are "low", "medium" and "high" production rates listed, depending upon jobsite conditions and the quantities of work to be performed.
3. Utilizing anticipated design plan submittal dates, establish a Gantt chart schedule for the entire FasTracks program for a six month window at a time. This will help to establish the time frames that need to be set aside for producing the major program estimates. Any remaining time will be used to perform check estimates on contract change notices/change directives or any other estimating services required. Utilize estimating subconsultants on an as-needed basis when the estimating workload is anticipated to exceed the available resources.
4. Consult with experts in the field (people who have "first-hand" knowledge of field operations) of transit/rail construction to obtain their input related to crew assemblies (labor and equipment), along with typical production rates that the crews are capable of obtaining in various scenarios (tight ROW, limited work areas, large work areas, interfaces with third parties, typical things to "watch out for", etc.). Heavily utilize the information obtained from these sources to "tweak"

the standard preprogrammed crews in Heavy Bid or add "custom and/or specialty crews to the database.

5. Study the plans and try to get a feel for the elements of the work which comprise the majority of the project cost. Determine the 20% of the items which comprise 80% of the cost. Partition the time allotted to produce the cost estimate between the 20% "big ticket" items, according to the level of effort required. For instance, earthwork, drainage and various structures components will usually require more time than rail installation.
6. Perform the detailed quantity takeoff, particularly for all of the "big ticket" items. The designer's plan quantities, if provided, should be used as a "rough check" of the takeoff quantities. The quantities can be generated traditionally by using either dimensions shown on the drawings, or by scaled measurements when necessary. In addition, some linear and area measurements can be made on the electronic copies of the plan sheets in portable document format (i.e., .pdf files) by utilizing the on-screen measuring tools.
7. Input the takeoff quantities into the individual cost activities set up in the Heavy Bid estimating software. The estimating software is preprogrammed with standard labor, materials, equipment and subcontract prices, such that the estimate can be generated fairly quickly.
8. The following must be carefully taken into consideration when estimating "big ticket" items:
 - Major items of cost will require "bottoms up" estimating by selecting and possibly modifying the preprogrammed standard crews. In addition, the production rates used will require careful consideration of the uniqueness of the project.
 - Call material suppliers to obtain permanent and expendable material costs.
 - Call subcontractors and get their input and prices for specialty work, which usually includes the furnishing of any and all materials used in their work.
 - Check various websites to obtain general information, especially regarding various expendable materials such as forming supplies, form rentals, sheet piling, shoring, etc. Also, research the capabilities of the various specialty equipment to be used as related to the specific project requirements.
9. Using information from the estimate, as well as the FasTracks program schedules, determine the total time required for each phase of the project (i.e., design, construction, commissioning/testing). This duration, usually designated in months, will be used in the pricing of the jobsite indirect costs.
10. Utilizing the indirect activities from past estimates as a template, determine the applicable items comprising the jobsite indirect costs. Base the individual activity costs on the estimated times determined in the above step.
11. Next, use the "Spread" tool in Heavy Bid to spread the markup amounts for the contractor's home office overhead and profit (usually 15%) to all of the activities of cost. This will generate the "bid prices" for each of the bid items comprising the estimate.
12. When the estimate has been completed in Heavy Bid, usually the estimate will need to be compared to either the Design Engineer's or the Contractor's cost estimate. As such, produce a spreadsheet that compares these costs. Usually the designer will already have put his estimate in

Excel spreadsheet format, with a separate workbook sheet being used for each of the Standard Cost Categories for Capital Projects (SCC codes). There should also be a separate summary sheet in the workbook that summarizes the costs by the SCC codes.

13. Next, the estimate should have an independent check performed on it by an estimator at least as experienced as any of the estimators that participated in pricing the estimate. This individual should be someone who did not work on the estimate prior, such that "a fresh set of eyes" reviews the estimate and is better able to catch any errors.
14. The draft estimate should next be reviewed with the Corridor Project Manager to obtain any input they may have. After these adjustments are made and the estimate is finalized, then the estimate can be coded with the WBS cost accounts and an Excel spreadsheet export file generated. This can be input into Prism for estimate to complete/cost control purposes. Also, another Excel export file can be created that lists the work activities and their respective construction durations which can be imported into Primavera P6 for development of a construction schedule.
15. When the subsequent design submittal comes in for review, the previous design submittal estimate is copied and renamed. Next, the estimate needs to be revised to include all of the latest changes to the design that have resulted since the previous design submittal was issued. Design contingencies will be reduced with each subsequent phase of design finalization.