

Denver Regional Council of Governments

2009 Annual FasTracks Review and Determination Report

Adopted
August 18, 2010



1. Introduction

Per requirements of State Senate Bill 90-208 (SB-208), the Denver Regional Council of Governments (DRCOG) approved the Regional Transportation District (RTD) FasTracks Plan, including the technologies and method of financing, on April 21, 2004. Resolutions of approval were passed for each of the individual corridors and for the system as a whole. The resolutions stated that an annual review would be conducted through the MPO process to identify any substantial changes from one year to the next and “*directed that the DRCOG Board of Directors make a determination if the changes are substantial and require further SB-208 action.*” The 2004 DRCOG action is referred to as the original or initial review.

RTD’s 2009 Annual Report to DRCOG on FasTracks (April 2010)

RTD submitted its *2009 Annual Report* to DRCOG in mid-2010. The report provides information on the topics identified in the DRCOG approval resolutions as annual review subjects:

- **Project definition and scope,**
- **Implementation schedule,**
- **Operating characteristics,**
- **Level of bus service,** and
- **Financial plan,** which includes plan and corridor costs and revenue projections.

The report provides detailed project information including scope, costs, and status updates for each corridor. A large portion of this year’s effort is devoted to the results of RTD’s 2010 Annual Program Evaluation (APE), the challenges and risk factors associated with the current economic recession, and the proposed new plan for increasing revenues to complete the FasTracks Plan by 2019, two years later than previously planned. The financial plan included in RTD’s *2009 Annual Report* is referred to as the 2010 Financial Plan.

RTD’s report acknowledges that 2009 presented continuing challenges to its ability to deliver the FasTracks Plan on its original schedule. Forecast base sales tax revenues are far short of the original 2004 projections and even the projections included in the *2008 Annual Report*.

Though RTD reports the estimated capital cost to complete the FasTracks Plan has decreased from \$7.0 billion in the *2008 Annual Report* to \$6.75 billion, this still represents a major increase from the original \$4.7 billion estimate in the 2004 (see Table 3 of the *2009 Annual Report*). The forecast for future sales and use tax revenues (2005-2035) declined by approximately 14% (from \$9.1 billion in the *2008 Annual Report* to \$7.8 billion in the *2009 Annual Report*). If additional revenues are not committed, RTD estimates a funding gap to construct FasTracks by its original 2017 schedule of approximately \$2.4 billion.

In developing these estimates, RTD worked with stakeholders and financial and construction cost experts. Sales and Use Tax Forecasting Work Sessions were held in late 2009 with economic and financial advisors from across the region to evaluate and reach consensus on the forecasting methodologies to use for the financial plan. The FasTracks Construction Inflation Workshop evaluated the inflation rate to be applied to the capital cost estimates.

In February 2010 the RTD Board of Directors adopted a financial plan that contained two possible scenarios. In April 2010 the RTD Board made the decision to not proceed with the first scenario, which required going to the ballot in 2010. The second scenario is included in the 2010 Financial Plan. It assumes the passage of a 0.4% sales and use tax increase commencing in January 2013. A vote could be held in either 2011 or 2012. This scenario would result in the completion of the full FasTracks Program by 2019, assuming cost escalation and revenue growth forecasts documented in the Financial Plan.

DRCOG staff assessed the changes proposed by RTD in the *2009 Annual Report* in relation to the review items established by DRCOG as part of the SB-208 evaluation of the original FasTracks Plan. Proposed changes are assigned to the following categories:

- *Substantial changes requiring a new SB-208 finding*; examples are changes to technology and funding/financial,
- *Substantial changes, but not warranting a new SB-208 finding*; examples are changes that modify Regional Transportation Plan (RTP) networks or require a subsequent amendment of the RTP, or
- *Not substantial* (informational).

Regardless of the magnitude of the change, action on each FasTracks annual report establishes the starting point for reports in following years. The changes proposed by RTD in the *2009 Annual Report* and the DRCOG staff assessment follow.

Summary of Key Staff Assessments and Recommendations

The *2009 Annual FasTracks Review and Determination Report* was prepared by DRCOG staff. DRCOG staff was assisted in the review of the FasTracks Financial Plan by a consulting team. Pertinent observations from the previous FasTracks review and determination reports, also referred to as the *200X Annual Review*, are referenced herein as both background and continuity of commentary.

- The *2009 Annual Report* includes a revised FasTracks Financial Plan, approved by the RTD Board of Directors April 13, 2010. The 2010 Financial Plan reflects the latest capital cost sales and use tax forecasts, and presumes that a ballot initiative will be passed to increase the sales and use tax by 0.4% effective January 2013. Its assumptions also include receipt of a Full Funding Grant Agreement (FFGA) for the East Corridor, Gold Line, and Commuter Rail Maintenance Facility in the amount of approximately \$1 billion as well as private sector funding from the Eagle P3 public-private partnership of about \$540 million (a 40% decrease from

the *2008 Annual Report*). The changes to the Financial Plan are substantial and require SB-208 action.

- In its review of the *2008 Annual Report*, the DRCOG Board called for RTD to be more conservative in the assumptions it uses for the next financial plan submitted to DRCOG for review. The 2010 Financial Plan contains more conservative elements than the one in the *2008 Annual Report*. *DRCOG staff regards the 2010 Financial Plan as more realistic than the previous plan.*
 - *DRCOG staff recommends the 2010 Financial Plan be accepted through a new SB-208 action.*
 - *DRCOG staff notes that outside factors (e.g., statewide ballot issues), a delay in going to the voters for the RTD sales and use tax increase, or the failure of the tax increase vote would cause major changes requiring a significantly modified financial plan and associated schedule for completion of the FasTracks Plan.*
- There are no other changes in the *2009 Annual Report* categorized as substantial that require a new SB-208 finding.
- The *2009 Annual Report* identifies schedule changes for nearly all the corridors (see Table B) ranging from 1 to 3 year delays beyond the previous schedule. “Completion” of FasTracks is now proposed for late 2018. The schedule changes are substantial, but do not require a new SB-208 finding. The changes to corridor completion dates must be reflected in RTP conformity modeling.
- The *2009 Annual Report* details the recent completion of the environmental documents for four corridors and the near completion of four others (since completed). This reflects great progress over the past year. In the original FasTracks review, DRCOG stressed the importance of completing environmental documents in a timely fashion. In subsequent annual reviews DRCOG expressed concern about delays. *The progress RTD made during 2009 on environmental documentation is laudable. RTD is encouraged to complete remaining environmental documents prior to approaching voters for a sales tax increase.*
- DRCOG commented in the *2007 Annual Review*:
- “as noted in the original SB-208 finding in 2004, the availability and cost of rights-of-way from the railroads, in particular, is an uncertainty that could affect schedule and cost. RTD must make demonstrable progress with railroad negotiations during 2008.”*

This point was re-emphasized in the *2008 Annual Review*. Because the FasTracks plan relies on both shared track operations through lease agreements and the purchase of railroad-owned land to build commuter rail lines and a maintenance facility, productive negotiation with the railroad companies is critical to successful implementation. RTD made major advances in those railroad negotiations over the past year, most significantly with the purchase of right-of-way (ROW) for the North Metro Corridor from the UPRR. *DRCOG staff urges RTD to conclude further needed agreements shortly after completion of necessary environmental clearances.*

2. Project Definition/Scope

(SEE TABLE 1 OF THE ORIGINAL 2004 REVIEW, TABLE 1 OF THE 2009 ANNUAL REPORT)

The following summary in Table A identifies the project definition/ scope changes included in the *2009 Annual Report*. The tables list the changes by corridor. For purposes of examination, DRCOG staff placed scope changes into five categories:

- Technology (mode),
- Length of corridors,
- Station locations and parking,
- Track and crossings, and
- Support facilities.

As noted by a lack of checkmarks (✓) in the two right-hand columns of Table A, none of the project scope changes are SB-208 actionable or require RTP conformity model changes.

Table A
Summary of Project Definition/Scope Changes

<i>Corridor</i>	<i>Changes Identified in 2009 Annual Report</i>	<i>SB-208 Actionable</i>	<i>RTP Conformity Model Change</i>
West Corridor	<i>No changes</i>		
Northwest Rail Corridor	The first phase section from DUS to the South Westminster station will be electrified and EMU technology vehicles will operate in this section initially.		
Gold Line Corridor	<i>No changes</i>		
I-225 Corridor	<i>No changes</i>		
East Corridor	Grade separation added for New Castle Street access road to airport.		
North Metro Corridor	Single track the segment north of 128 th Avenue to the end of line at 162 nd Station.		
	Corridor length corrected to 18.4 miles.		
Southeast Corridor Extension	Two stations will be constructed at-grade instead of elevated.		
Southwest Corridor Extension	<i>No changes</i>		

**Table A (continued)
Summary of Project Definition/Scope Changes**

Corridor	Changes Identified in 2009 Annual Report	SB-208 Actionable	RTP Conformity Model Change
US-36 Corridor BRT	No changes		
Central Corridor Extension	No changes		
Denver Union Station	No changes		
Maintenance Facilities	Commuter Rail Maintenance Facility – minor site reduction modifications, with completion in 2015.		
	Light Rail Maintenance Facilities – No changes		
	Bus Maintenance Facility – Determined that new facility is not needed until after 2035, as relocation is not necessary		

Technology (Mode)

- A. Northwest Rail Corridor.** The first phase section from DUS to the South Westminster/71st Ave. station will be electrified. EMU technology vehicles will use this section until the entire corridor is completed to Longmont, at which time DMU vehicles (or possibly hybrid) will then be used over the entire corridor.

DRCOG staff assessment: This change is not substantial. Further SB-208 action is not needed.

Length of corridors

- A. North Metro Corridor.** The reported corridor length has changed from 18.7 miles to 18.4 miles, correcting a discrepancy in the distance reported last year.

DRCOG staff assessment: This change is not substantial. Further SB-208 action is not needed.

Station locations and parking

- A. Station setting.** Two stations on the Southeast Extension will now be constructed at-grade, rather than be elevated (Sky Ridge and Lone Tree Center).

DRCOG staff assessment: These changes are not substantial. Further SB-208 action is not needed.

- B. Parking revisions.** No actual planned changes. Changes to values within the tables of the document are due to revised methods of reflecting existing, new, and shared station parking spaces within the calculations.

DRCOG staff assessment: These changes are not substantial. Further SB-208 action is not needed.

Tracks and crossings

- A. Alignment changes.** The North Metro Corridor segment between 128th Avenue and the end of line at 162nd Station will be single tracked.

DRCOG staff assessment: These changes are not substantial. Further SB-208 action is not needed.

- B. Grade-separations.** Since the 2008 Annual Report, the number of defined at-grade crossings increased from 12 to 18 on the Central Corridor extension (due to refined definition of at-grade crossings, not actual additions) and from 15 to 19 on the North Metro Corridor. There will be one less at-grade crossing each on East, Northwest Rail, and West corridors. A specific new grade-separated crossing will be added to the East Corridor over New Castle Street (an access road to DIA). The crossing of Ridgeway Parkway by the Southeast Extension will now be below grade, rather than above grade.

DRCOG staff assessment: The total number of at-grade crossings in the FasTracks Plan has grown from 135 originally to 171 in the 2009 Annual Report. However in past year, the net change of additional at-grade crossings was only one. Revising the number of at-grade crossings is not considered a substantial change. Further SB-208 action is not needed.

Support facilities

- A. Light Rail Maintenance Facility.** No change.

- B. Commuter Rail Maintenance Facility (CRMF).** The preferred site at 48th and Fox Street was reduced in size to lessen impacts on the adjacent property.

DRCOG staff assessment: This change is not substantial. Further SB-208 action is not needed.

- C. Bus Maintenance Facility.** It has been determined that additional bus maintenance facility capacity (new or expanded) will no longer be needed by 2035

DRCOG staff assessment: This change is not substantial. Further SB-208 action is not needed.

3. Implementation Schedule

(SEE FIGURE 4 OF ORIGINAL 2004 REPORT, FIGURE 26 AND FIGURE 27 OF 2009 ANNUAL REPORT)

A. Environmental process schedules. Significant progress was made over the past year on the corridor environmental studies:

- Corridor studies completed in 2009:
 - East Corridor EIS
 - Gold Line EIS
 - I-225 EA
 - US-36 (BRT) EIS
- Corridor studies nearing completion in 2009 (since completed):
 - Northwest Rail EE
 - Central Corridor Extension EE
 - Southeast Extension EE
 - Southwest Extension EE
- Remaining corridor study to be completed:
 - North Metro EIS (late 2010)

DRCOG staff assessment: DRCOG raised the issue of lagging environmental studies every year in its review. During 2009 significant progress was made. RTD expects to complete the North Metro EIS by the end of 2010.

B. Construction completion schedules. The *2009 Annual Report* (Figure 27) identifies delayed opening dates on all but the West Corridor compared to those reported in the *2008 Annual Report*. The revised opening dates range between one to three years later than previously reported. The revised dates are directly related to the 2010 Financial Plan. All of the corridors are scheduled to be open by late 2018. Table B shows the revised opening dates.

Table B
Construction Completion Schedule

Corridor	2004 "208 Review"	2008 Annual Report	2009 Annual Report
West Corridor	early 2014	mid 2013	mid 2013
Northwest Rail Corridor	early 2015	early 2015	mid 2016 (to S. Westminster) early 2018 (to Longmont)
Gold Line Corridor	early 2016	mid 2015	early 2017
I-225 Corridor	late 2015	mid 2015	mid 2018
East Corridor	early 2015	mid 2015	early 2017
North Metro Corridor	late 2015	late 2015	late 2018
Southeast Corridor	early 2017	mid 2015	mid 2018
Southwest Corridor	early 2017	mid 2015	mid 2018
US-36 Corridor BRT	late 2016	late 2016	not specified*
Central Corridor Extension	mid 2015	mid 2015	mid 2017
Denver Union Station	late 2014	mid 2011 (LR) early 2015 (CR)	mid 2011 (LR) mid 2015 (CR)
Commuter Rail Maintenance Facility	—	mid 2014	mid 2016
Light Rail Maintenance Facility	—	early 2011	mid 2011
Bus Maintenance Facility			after 2035

* dependent on other funding for the HOT lanes

The 2009 Annual Report also notes that the design and construction process for a possible initial segment of the I-225 Corridor may be conducted prior to the entire corridor. This could enable the Nine-Mile Station to Iliff Station segment (H-Line) to open in advance of the remaining corridor to the north, if funding permits. An initial extension of the H-Line to the Iliff station would relieve the demand for parking at the Nine-Mile Station.

The completion date for the Light Rail Terminal component of the Denver Union Station (DUS) project has been extended by a few months in 2011, and will be ready prior to the opening of the West Corridor line. The Commuter Rail Terminal of DUS will be completed in 2015 to be ready for the Gold Line and East Corridors.

The Commuter Rail Maintenance Facility (CRMF), being constructed by the Eagle P3 project, is scheduled for completion by mid-2016, six months in advance of the opening of the first commuter rail corridor. The expansion of the existing Light Rail Maintenance Facilities is still scheduled for completion in 2011, two years before the first new light rail line is opened.

DRCOG staff assessment: It is critical that the maintenance facilities and DUS be completed prior to opening of the pertinent corridors. The current schedule shows this happening in ample time for DUS, but is a little tighter for the CRMF. DRCOG staff considers the construction completion schedule changes to be rational given the expectations of the 2010 Financial Plan. The schedule changes are substantial and

must be incorporated into the air quality conformity modeling conducted for the 2035 RTP. Further SB-208 action is not needed.

C. Negotiations with railroads. RTD reported it continued negotiations for right-of-way (ROW) and associated agreements with the railroads. Key actions since the 2008 Annual Report:

- Purchase of right-of-way (ROW) from the UPRR to build the North Metro Corridor.
- A Memorandum of Understanding with BNSF for RTD's acquisition of property interests for the Northwest Rail between DUS and the South Westminster/71st Avenue Station and the Golden subdivisions for the Gold Line.
- Other agreements with UPRR related to Burnham Yard lead, track crossing north of C-470/Santa Fe, and specific properties in the East, Gold Line, and North Metro Corridors.

DRCOG staff assessment: DRCOG staff is pleased to see major and substantive progress was made with railroad negotiations in 2009 and strongly encourages RTD to conclude the remaining agreements and purchases needed soon after completion of necessary environmental clearances.

4. Operating Characteristics

(SEE TABLE 2 OF ORIGINAL 2004 REPORT, TABLE 5 IN 2009 ANNUAL REPORT; FIGURE 3 OF ORIGINAL 2004 REPORT, FIGURE 28 OF 2009 ANNUAL REPORT)

A. Headways

- 1. Gold Line.** The previous operating plan for the Gold Line included peak period 7.5 minute headways. This has been revised to 15 minutes as part of cost containment and operational efficiency strategies identified in the Record of Decision (ROD) for the EIS. The off-peak headways will remain at 15 minutes. The change in peak period headways will result in somewhat lower estimated daily ridership (roughly 10% less).
- 2. Northwest Rail.** Headways in certain times in the off-peak period were reduced (e.g., from 120 to 60 minutes and 60 to 30 minutes) for the years 2015 and 2030 to correct changes for those specific analysis years that should have been reflected in the previous year's financial plan.

DRCOG staff assessment: While DRCOG's modeling is consistent with RTD's and does not demonstrate an absolute need for the 7.5 minute peak headway service level on the Gold Line, future modeling results and actual ridership should be monitored closely to ensure that the change in peak headways does not cause a further real reduction in ridership. The headway changes are substantial and must be reflected in the RTP conformity modeling, but do not require further SB-208 action.

B. Corridor capacity / line loads

- 1. East Corridor.** Revised modeling and loading assumptions show ridership demand can be met with 3-car trains instead of 4-car trains.
- 2. Gold Line.** As previously mentioned, loading assumptions show that demand can be met with 15 minute headways in the peak periods rather than 7.5 minutes, which decreases the peak corridor capacity.
- 3. Overall.** Since the previous annual report, forecasted peak line load passenger volumes decreased on four corridors and increased on five. Peak hour capacities decreased on two corridors (East and Gold Line as mentioned). Peak line load passenger volumes exceed seated capacity in 2035 on all but two lines.

DRCOG staff assessment: Service changes are substantial and must be reflected in the RTP conformity modeling, but do not require further SB-208 action.

5. Level of Bus Service

(SEE CHAPTER 6 OF ORIGINAL 2004 REPORT, CHAPTER 4 OF 2009 ANNUAL REPORT)

Background bus service levels in the Financial Plan are consistent with the previous *2008 Annual Report*. Minor service schedule reductions were made in 2009, but increases were made in ADA services. Future year increases in services will be in the range of plus 0.7% to 2.0% annually from 2011 to 2020, and in the range of plus 1.5% to 1.6% annually from 2021 to 2035. The total number of bus hours proposed for 2017 and 2035 are increased about 1% from those shown in the *2008 Annual Report*, 4.28 million hours for 2017 compared to 4.25 million, and 5.66 million hours for 2035 compared to 5.58 million.

DRCOG staff assessment: This change is not substantial. Further SB-208 action is not needed.

6. Financial Plan

Since 2005, RTD has been updating the Financial Plan annually to reflect the latest available information and assumptions. This is a prudent approach in an environment of ever-evolving cost and economic conditions. In its review of the *2008 Annual Report*, the DRCOG Board called for:

“RTD, in the next Financial Plan it submits in an annual report, to be more conservative in the assumptions it uses (than in the current Financial Plan) unless actual FasTracks implementation experience bears out the current assumptions. At a minimum, this specifically includes:

- *Costs (adjustments of near-term inflation and inclusion of additional contingencies);*
- *FTA New Starts revenues;*
- *Sales and use tax revenues; and*
- *Benefits (costs and revenues) of public-private partnerships.”*

The *2009 Annual Report*, containing the 2010 Financial Plan, includes new capital and operating cost estimates and significant revenue revisions, all of which are substantially modified from the *2008 Annual Report*. DRCOG retained the services of a consultant to assist in the review of RTD’s Financial Plan. This section first reviews cost elements, then key revenue assumptions, before assessing the overall Financial Plan.

Plan and Corridor Costs

(SEE TABLE 1 OF THE ORIGINAL 2004 REVIEW, TABLE 3 OF THE 2009 ANNUAL REPORT, AND TABLE 13 OF THE ORIGINAL 2004 REPORT, NO COMPARABLE TABLE PROVIDED IN THE 2009 ANNUAL REPORT).

A. Capital costs. In the *2009 Annual Report*, RTD presented updated costs based on the 2010 Annual Program Evaluation (APE) as shown in Table C. The table also includes the *2008 Annual Report* values.

Table C
FasTracks Capital Program Costs
(millions of inflated dollars)

Sources	2004 "208 Review" Report Table 1	2008 Annual Report Table 1a	2009 Annual Report Table 3	Difference 2008 to 2009
<i>West Corridor</i>	\$511.8	\$798.7	\$696.9	-\$101.8
<i>Northwest Rail</i>	\$565.1	\$706.9	\$729.4	\$22.5
<i>Gold Line Corridor</i>	\$463.5	\$590.5	\$517.0	-\$73.5
<i>I-225 Corridor</i>	\$442.3	\$694.9	\$670.1	-\$24.8
<i>East Corridor</i>	\$702.1	\$1,343.7	\$1,232.9	-\$110.8
<i>North Metro Corridor</i>	\$420.0	\$924.4	\$977.6	\$53.2
<i>Central Corridor Ext.</i>	\$68.7	\$67.3	\$65.4	-\$1.9
<i>Southeast Corridor Ext.</i>	\$136.8	\$184.3	\$180.4	-\$3.9
<i>Southwest Corridor Ext.</i>	\$134.9	\$165.6	\$177.2	\$11.6
<i>US-36 BRT</i>	\$226.3	\$239.4	\$239.4	\$0.0
<i>Denver Union Station</i>	\$268.4	\$279.3	\$283.4	\$4.1
<i>Light Rail Maintenance Facility</i>	\$100.4	\$26.6	\$28.9	\$2.3
<i>Commuter Rail Maintenance Facility</i>	\$80.4	\$189.1	\$178.6	-\$10.5
<i>Bus Maintenance Facility</i>	\$71.7	\$0.0	\$0.0	\$0.0
<i>Other FasTracks Costs</i>	\$524.7	\$789.1	\$767.9	-\$21.2
Totals	\$4,717.1	\$6,999.8	\$6,745.1	-\$254.7

The corridor costs in the *2009 Annual Report* are \$2.0 billion more than in the original *2004 Annual Report*, but about \$250 million less than in last year's *2008 Annual Report*. The key factors contributing to the overall increased capital costs include:

- 1) material, labor and right-of-way escalation,
- 2) changes with respect to stations and park-n-Rides and vehicle technology,
- 3) changes resulting from negotiations with railroads for right of way needed for the program, and
- 4) scope changes/clarifications.

In the past year, cost estimates have decreased slightly due to further refinements and more detailed engineering conducted following, and as part of, major environmental studies.

Construction costs

The consultant evaluated the construction unit item costs and estimating methodology RTD used to develop the unit costs. To gauge whether the component unit costs accurately reflect prevailing market prices, the consultant independently established a range of prices and evaluated where RTD's unit cost estimates fell within the range.

The results are:

RTD unit costs lower than Consultant's Range	13%
RTD unit costs within Consultant's Range.....	41%
RTD unit costs higher than Consultant's Range	46%

Because DRCOG staff only reviewed unit costs, it cannot comment authoritatively about total cost. However, the consultant's comparison of unit costs indicated RTD's unit costs are now, on average, higher than the consultant's independent estimates. The unit costs overall are still considered to be conservative.

The consultant also found RTD's overall cost estimating methodology to be reasonable and valid and to exhibit a high level of detail and sophistication relative to design stages of various corridors. Because of continued progress on the FasTracks program, there is now more emphasis on the more detailed "bottom up" estimates, rather than "top down" unit cost based estimates.

Other costs

- The consultant believes the unit rates for labor and equipment are reasonable and the costs for materials appear to be reasonable and consistent with local and national price indexes and trends. The consultants' previous concern with RTD's reliance on historical based adjustments to unit costs was addressed through RTD's FasTracks Construction Inflation Workshop held in December 2009.
- The consultant believes the costs for contractor home office and profit mark up may prove to be too low when the economy improves and the construction industry becomes busier. It is suggested that the markups be increased by 2-3% to reflect a more conservative forecast.
- The consultant considers RTD's engineering/design, construction management/inspection, and project insurance costs to be reasonable by industry standards.
- For right-of-way (ROW) and property acquisition, RTD reports its actual costs incurred to date on the West Corridor are slightly higher (by less than 1%) than the previous estimates plus contingency. The consultant noted the significant milestone of purchasing ROW from the UPRR for the North Metro Corridor, but still considers ROW costs to be a significant element of risk to the overall program.
- The consultant believes the estimates for rail vehicle costs are reasonable, but notes that RTD may be able to reduce costs if all of the commuter rail vehicles (EMU and DMU) were manufactured by the same firm.
- The consultant found RTD's rates for construction cost escalation to be conservative enough to reasonably spread their concern of price volatility over enough years. The consultant continues to express concerns about unforeseen sudden commodity price spikes.
- Due to the risks and unpredictability of the "other costs," the consultant believes that RTD should expand the use of sensitivity analyses for these cost components.

Contingency

RTD applied an average of 25% contingency to the sum of estimated corridor direct construction costs plus indirect costs to all but one of the corridors. This was in response to one of DRCOG's recommendations from last year's review. However, for the Gold Line, the 25% contingency was only applied to the direct construction costs. The consultant recommends that this be corrected applied consistently to all the corridors, but notes that the failure to apply contingency to the indirect costs for just one corridor is not of significant impact to the overall FasTracks budget.

The consultant concludes that because progress on most of the corridors is beyond the preliminary engineering stage, the 25% contingency level is now appropriate and reasonable.

B. Operating costs. RTD indicates it still intends to:

- Use private contractors to operate the paratransit fleet and fixed-route service up to the legislatively-mandated cap,
- Operate existing and new light rail service with in-house employees, and
- Use the private sector to operate commuter rail service. For East and Gold Line Corridors, this will be part of the public-private partnership. For Northwest and North Metro Corridors, details have not been established.

The consultant states RTD's methodology for developing the commuter rail operating and maintenance (O&M) costs is well thought out and very thorough. Further, the consultant states the model used for light rail and bus operations provides a reasonable projection of O&M costs. Some elements of operating costs have been made more conservative (e.g., annual costs for routine servicing of vehicles). The consultant identified two substantive areas of potential O&M cost risk as:

- Labor rates for commuter rail operators may be higher than those for light rail operators (the rate used in the methodology).
- Energy costs are estimated to be about 15-17% of future O&M costs and this may be insufficient if, for example, energy costs spike again or proposed federal measures addressing climate change and energy independence raise energy costs significantly.

C. Cost savings from public-private partnerships (P3). RTD's perspectives on this have changed little since the *2008 Annual Report*. RTD intends to use various forms of P3 on almost every corridor, and one reason for doing so is potential cost savings.

The Denver region is very familiar with design/build (DB), where the public agency contracts with a private company to design and construct a project based on requirements from the public agency. RTD intends to use this extensively because of DB's ability to deliver projects more quickly. RTD's revised implementation schedule and its year-of-expenditure cost estimates reflect this. Further, RTD expects that by using DB, it can take advantage of the private sector's experience and innovation and realize actual cost savings in construction.

The consultants believe that RTD's P3 procurement was conducted with commercially reasonable terms and has the opportunity to represent a path-breaking example of a successfully-closed P3 project.

For at least the Gold Line and East Corridors, and maybe other commuter rail corridors as well, RTD intends to use the private sector to operate and maintain (OM) the service once construction is completed. RTD expects that the private sector can operate and maintain the commuter rail lines discernibly less expensively than the public sector. As stated in the *2007 Annual Review*:

“balancing risk transfers will be key to realizing OM cost savings. Whether RTD can realize the level of cost savings in the commuter rail operations (the private partner would be selected for a very long term in a onetime procurement process, with periodic reassessment of OM costs) that it has achieved with its private bus services (competitive process every few years) is uncertain.”

DRCOG's perspective about P3 OM remains unchanged from the *2007 Annual Review*. Release of financial details of the P3 contract will prove instructive.

DRCOG staff conclusion on costs:

- Overall, DRCOG considers the capital construction estimate of \$6.7 billion to be reasonable. RTD's capital cost estimating methodology is reasonable, well-substantiated, and a little on the conservative side. However, DRCOG staff recommends RTD closely monitor price fluctuations with commodity prices, and incorporate such information in future annual reports.
- DRCOG staff considers RTD's assumptions for operating costs generally reasonable, except the wage rate for commuter rail operators, and recommends RTD include some contingency to address the uncertainty about future energy costs. As stated in the *2007 Annual Review*:

“A key to achieving cost savings in DBFOM is appropriately defining the amount of risk to be transferred to the private sector and the cost the private sector will charge for assuming that risk, which will directly affect total project cost.”

While RTD has made substantial progress on the P3 since the time of the 2007 Annual Review, at the time of the 2009 Annual Report it still was not at the stage of having specifics. DRCOG staff continues to support RTD use of public-private partnerships when and if feasible to implement FasTracks and recognizes P3s as a critical component of the FasTracks Financial Plan and overall system implementation.

Revenue Projections

(SEE TABLE 1 OF THE 2009 FINANCIAL PLAN, TABLE 1 OF THE 2010 FINANCIAL PLAN)

The updated Financial Plan in the *2009 Annual Report* reflects new revenue forecasts. Table D below shows the revisions proposed by RTD to fund the capital program. RTD has assumed (in this financial plan) a sales and use tax increase of 0.4%.

Table D
FasTracks Capital Program Revenues
(millions of year of expenditure dollars)

Sources	2008 Annual Report	2009 Annual Report	Difference
FasTracks Program Funding			
Sales and Use Tax ("Pay as you go" funds)	\$1,824.1	\$2,148.5	\$324.4
Revenue Bonds	\$2,085.8	\$1,683.6	-\$402.2
Certificates of Participation (COPs)	\$77.2	\$230.0	\$152.8
TIFIA Loan	\$308.1	\$325.5	\$17.4
Other Federal Grants	\$277.8	\$292.8	\$15.0
FTA New Starts Grant Program	\$1,339.1	\$1339.1	\$0.0
Local Funding	\$140.6	\$135.1	-\$5.5
Other Local Funding	\$32.3	\$32.3	\$0.0
Public-Private Partnerships	\$897.8	\$541.0	-\$356.8
Total FasTracks Program Funding	\$6,982.7	\$6,728.0	-\$254.7
3 rd Party Funded Projects	\$17.1	\$17.1	\$0.0
Total FasTracks Financial Plan	\$6,999.8	\$6,745.1	-\$254.7

The key revenue elements warranting discussion are:

- RTD sales and use tax;
- the FTA New Starts grant program;
- Other federal grants; and
- Private sector funding as part of the public-private partnership.

As a backdrop to these discussions, it is important to restate an observation from the *2007 Annual Review*: "there is substantial uncertainty inherent in all of the... key revenue elements. Subject-matter experts may reasonably reach divergent opinions."

A. Revenues from sales and use tax. The forecast for future sales and use tax revenues (2005-2035) declined by approximately 14% (from \$9.1 billion in the *2008 Annual Report* to \$7.8 billion in the *2009 Annual Report*). If additional revenues are not committed, RTD is estimating a funding gap to construct FasTracks by its original schedule of \$2.4 billion.

To address the challenges of making long-term sales and use tax revenue projections, RTD convened a group of state and local government economic and

financial advisors to review and evaluate forecasting methodologies and obtain consensus on a future forecasting method. Sales and Use Tax Forecasting Work Sessions were held in late 2009. RTD's financial plan sales and use tax forecasts are based upon the following:

- **2010 – 2012**, the Colorado Legislative Council statewide forecasts; and
- **2013 – 2035**, Outcome of Sales and Use Tax Forecasting Work Sessions.

The group considered RTD's 20-year average historical sales tax growth rate, the forecast growth in CPI and the DRCOG population and employment growth forecasts.

RTD's FasTracks Plan is heavily dependent on the strength of the local economy and its collections of sales and use taxes. RTD's current financial plan includes a major revision to its sales and use tax projection to reflect the recent economic recession. Its 2005-2035 tax revenue forecast decreased from \$9.1 billion (2009 forecast) to \$7.8 billion (2010 forecast) – a 14.3% decrease. This decrease is significant and RTD, as a result, is estimating a funding gap. ***RTD must find additional revenue to fill this gap if it is to complete the FasTracks program before 2042.***

The 2010 Financial Plan identifies a ballot initiative to seek a 0.4% increase in the sales and use tax, effective in January 2013. The overall average annual growth rate from 2008 through 2035 per unit of tax is approximately 3.7%, the "medium" forecast recommended from the Work Sessions. This is considerably less than the overall rate proposed in the *2008 Annual Report* (which was about 5.0%). The changes in sales and use tax by individual period estimated by RTD are a substantial decrease in 2009 (-10%), a moderate increase in 2010 (+ 4.8%), smaller increases in 2011 and 2012 (averaging a little less than 3%), and a generally consistent annual growth rate of about 4.35% (ranging from 4.21% to 4.46%) from 2013 through 2035 (all these individual periods taken together yield the 3.7% average figure cited).

RTD's forecasts in the 2010 Financial Plan are much less optimistic and more reasonable than previously, and the consultant agrees RTD's computations show that, if approved, the 0.4% increase could adequately fund the projected shortfall if the sales tax generates the revenues RTD projects. The consultant believes the estimated sales and use tax revenues are based on reasonable assumptions, but cautions that FasTracks will be exposed to challenges as a result of more variant annual growth rates in the future, in particular those due to future recessions. It should also be noted that the forecasts in the 2010 Financial Plan were made about nine months ago and may now be somewhat optimistic for the short term.

- B. The FTA New Starts grant program.** RTD's 2010 Financial Plan assumes approximately \$1.34 billion of FTA New Starts funds will be made available for the FasTracks program through Full Funding Grant Agreements (FFGAs). Early in 2009, RTD received a FFGA for the West corridor for \$308.7 million, securing those New Starts funds.

RTD is seeking \$1.03 billion from the FTA, or approximately 59% of the capital construction cost of the combined East Corridor and Gold Line Corridor project. The FTA gave a favorable recommendation for these two corridors in its *Annual Report on Funding Recommendations for Fiscal Year 2011* for this level of funds. It should be noted that the FTA views the combination of corridors essentially as one project. The FTA also has their own specific requirements for elements to be reflected in the grand total cost to implement, finance, and physically operate the system at the time of a future analysis year (2030 for these corridors). For example, a portion of the cost for the commuter rail maintenance facility and the cost for providing additional vehicles and parking beyond opening day is included. Thus the project cost reported to FTA is significantly higher than the capital cost contained in this report (roughly \$2.4 billion versus \$1.75 billion). Therefore the requested amount as a percent of the current total FTA cost is about 41% based on last year's corridor capital cost estimates. That percent value will rise, likely to approximately 50%, when RTD reflects the lower final Eagle P3 costs later in 2010 in the next annual New Starts report.

The percentages and amounts of New Starts funding provided by the FTA to individual projects across the country vary substantially. The consultant stated that based on full funding grant agreements awarded to date, the highest percentage that a project should expect to receive is about 60%. Thus, the percentage of the cost stated by FTA that RTD proposed (about 41% for the two corridors combined) is within the range. The consultant noted two additional points:

- 1) the amount requested by RTD (\$1.03 billion) for upcoming funding represents only 12% of the \$8.3 billion requested nationwide, and
- 2) the total amount requested nationwide is about 57% of the total value of funds awarded in the past from 1993 through 2009.

At the time of the *2007 Annual Review*, there was substantial uncertainty about the future of all federal programs once SAFETEA-LU expires, and a high interest nationally in competing for New Starts funds. The *2007 Annual Review* stated:

“for RTD to achieve its revised New Starts funding objective, either the federal funds available for New Starts must grow or RTD’s success rate must increase substantially.”

The *2007 Annual Review* concluded with the DRCOG Board recommending RTD take a less optimistic, more conservative stance on obtaining New Starts funds in its next Annual Report. RTD has not done that, and has maintained its expected receipt of New Starts funds as presented in the *2008 Annual Report*.

Though there is uncertainty as to when new multi-year authorization bill would be passed by congress, the consultant noted that in the past when operating under temporary program authorizations in 2003-2005, the FTA signed six FFGAs totaling nearly \$2.1 billion. In addition, RTD was recently awarded \$308.68 million of New Starts funds for the West Corridor that was memorialized in a Full Funding Grant Agreement signed in January 2009. According to the FTA, 87% of this grant had been appropriated through federal fiscal year (FFY) 2010 and the President's

Budget for FFY 2011 includes the remaining 13%, advancing (but not increasing) the delivery funds committed in the FFGA, which can also be viewed as a sign of continued FTA comfort with RTD.

DRCOG staff is encouraged by the most recent New Starts-related activities over the past year, and views the \$1.34 billion level as reasonable.

C. Other federal grants. The Financial Plan includes federal funding derived from 2011 to 2017 through two future federal surface transportation plan authorizations. It is important to point out that congress has still not passed a new transportation authorization bill. It is unknown if there will be two new authorizations, or only one, prior to 2017. The Financial Plan assumes a greater amount of federal discretionary funds (e.g., earmarks) for this time period than was received in the previous comparable time period (\$105 million versus about \$50 million). The assumption for future DRCOG-directed federal funds is consistent with previous actions of the DRCOG Board of Directors. All federal funding sources must be monitored closely in conjunction with the passage of future transportation authorization bills.

D. Public-private partnership (P3). The Eagle P3 project covers the East Corridor, Gold Line and the Commuter Rail Maintenance Facility. RTD's revised financial plan includes anticipated private investment by the selected concessionaire of \$541 million, approximately \$357 million less than in the *2008 Annual Report*. At the time of the *2009 Annual Report*, the P3 proposals had not yet been submitted. But the recent apparent successful completion of this procurement increases the likelihood that the \$541 million will be secured. The consultant also noted that this has the *"opportunity to represent a path-breaking example of a successfully closed P3 project."*

There are still numerous details for RTD and the selected concessionaire to work out in the coming months.

DRCOG staff conclusion on revenues:

- *RTD has made significant revisions to its sales and use tax projections reflective of the current economic conditions, and is basing its financial plan on the successful initiation of a ballot issue in either 2011 or 2012 to increase the sales and use tax rate by 0.4% in 2013.*
- *DRCOG staff believes that RTD's New Starts revenue expectations are reasonable and on a stronger foundation than in previous annual reviews.*
- *DRCOG staff commends RTD for the recent selection of a P3 concessionaire.*
- *DRCOG staff does have some concerns about the level of other federal funding (albeit a minor amount) that is assumed.*
- *Overall, DRCOG staff considers the revenue element of the new Financial Plan to be based on more reasonable and conservative assumptions than the previous plan.*

DRCOG staff overall assessment of the 2010 Financial Plan

The changes to the Financial Plan are substantial and require new action under SB-208. RTD responded to concerns and recommendations made by the DRCOG Board of Directors in its approval of last year's Annual Report. DRCOG staff finds the 2010 Financial Plan to be a significant improvement over the 2009 Financial Plan. The consultant noted:

“RTD has proactively tackled areas that may have lacked appropriate analysis and rationale in previous years’ Plans . . . RTD has sufficiently attempted to mitigate risk issues and the budget is appropriate and reasonable.”

- *DRCOG staff recommends acceptance of the 2010 Financial Plan, including the system and corridor costs and the revenue elements.*

Given that the RTD Board must obtain voter support for a sales and use tax increase, before 2013 if it desires to achieve 2019 implementation, RTD must continue to fine-tune its financial plan with conservative assumptions. As stated in the *2008 Annual Review*:

“RTD must convince the voters the next increase will be the last increase”.

DENVER REGIONAL COUNCIL OF GOVERNMENTS

STATE OF COLORADO

BOARD OF DIRECTORS

RESOLUTION NO. 15, 2010

A RESOLUTION TO APPROVE MODIFICATIONS OF THE FASTRACKS SYSTEM.

WHEREAS, Senate Bill 90-208 (32-9-107.7 CRS), enacted by the Colorado General Assembly, requires the Metropolitan Planning Organization (MPO) to approve the specific technology and method of financing of regional fixed guideway mass transit projects proposed by the Regional Transportation District (RTD) before any action relating to construction may take place; and

WHEREAS, the Denver Regional Council of Governments (DRCOG) is the Metropolitan Planning Organization for the Denver region 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; and

WHEREAS, the Denver Regional Council of Governments Board of Directors (hereafter "Board of Directors") established a process for the review of regional fixed guideway mass transit projects including specific criteria to be used in evaluating such projects; and

WHEREAS, the Regional Transportation District submitted the FasTracks Plan system to DRCOG for its review and approval pursuant to section 32-9-107.7 CRS; and

WHEREAS, the Board of Directors, on April 21, 2004, approved each component part and corridor of the FasTracks Plan, as well as the system as a whole in resolution number 18, 2004, pursuant to section 32-9-107.7 CRS; and

WHEREAS, the Board of Director's approval of the RTD FasTracks Plan on April 21, 2004 was subject to a number of understandings, which include the conduct of an annual review through the MPO process to identify any substantial changes in various elements of the FasTracks Plan and determine if further SB-208 action is required; and

WHEREAS, the RTD has described progress thus far on the FasTracks Plan and has proposed certain changes in the document *RTD 2009 Annual Report to DRCOG on FasTracks* (April 2010, with Addenda and Errata dated July 23, 2010), which it submitted to DRCOG for review; and

WHEREAS, a public hearing was held July 21, 2010 to receive public comment on the RTD 2009 Annual Report; and

WHEREAS, the RTD 2009 Annual Report included an updated Financial Plan that included significant alternation of costs and revenues; and

WHEREAS, review of the modifications identified in the RTD 2009 Annual Report, pursuant to the established process and public hearing, as presented in the *DRCOG 2009*

A RESOLUTION TO APPROVE MODIFICATIONS OF THE FASTRACKS SYSTEM.

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Annual FasTracks Review and Determination Report, categorizes the updated Financial Plan as a substantial change requiring new SB-208 action; and

WHEREAS, the review finds the Financial Plan acceptable; and

WHEREAS, the FasTracks system remains consistent with the intent of the *Metro Vision 2035 Plan*, including its transportation element; and

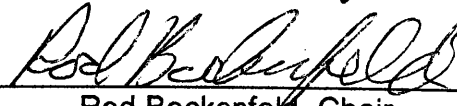
WHEREAS, the Regional Transportation Committee has recommended the *DRCOG 2009 Annual FasTracks Review and Determination Report* and approval of the proposal requiring new SB-208 action.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Denver Regional Council of Governments hereby accepts the findings of the *DRCOG 2009 Annual FasTracks Review and Determination Report*.

BE IT FURTHER RESOLVED that, pursuant to authority granted through section 32-9-107.7 CRS, the Board of Directors approves modification of the FasTracks system.

BE IT FURTHER RESOLVED that the other understandings of resolution number 18, 2004 and as reconfirmed by resolution number 18, 2009 are not modified by this action, and remain in effect.

RESOLVED, PASSED AND ADOPTED this 18th day of August, 2010 at Denver, Colorado.



Rod Bockenfeld, Chair
Board of Directors

Denver Regional Council of Governments

ATTEST:



Jennifer Schaufele, Executive Director



DENVER REGIONAL COUNCIL OF GOVERNMENTS

1290 Broadway, Ste. 700 ♦ Denver, CO 80203
www.drcog.org