



Study Evaluation Summaries

**Study Collaboration
Northwest and North Metro Extension
Arterial BRT
Financial Evaluation
January 30, 2014**



Study Collaboration Matrix

Goal 1

Evaluation of Overall Study Process Goals and Objectives

Goal 1: A Transparent and Collaborative Process

Objective	Measure	Results
1.1 Stakeholders will have adequate time to review information and ask questions before commenting or taking action	Adherence to the 10-day review/comment period in the Collaboration Commitment; questions and comments are clearly articulated in writing	Yes <i>Comments regularly submitted through DashPort and Email w/in deadlines</i>
1.2 RTD and the study team will have sufficient time to respond to questions, comments and new ideas	Questions, comments, concerns and ideas raised in meetings are explored and responded to in a timely manner	Yes <i>Responses to comments posted to DashPort and/or discussed at next PACT/TAC meeting</i>
1.3 Identify issues/concerns early and collaboratively address them throughout the process	Adherence to the Collaboration Commitment	Yes
	Adhere to a transparent process; a "no surprises" approach	Yes <i>Data provided to TAC prior to PAC</i>
1.4 Maintain an open and collaborative dialogue among all participants in all meetings.	Adherence to the Collaboration Commitment	Yes
1.5 Provide outcome-focused and priority-focused input	Meeting discussion is facilitated to focus on key issues	Yes
	Input on detailed edits/revisions or similar micro-topics are submitted in writing as part of the comment period	Yes <i>Written comments regularly addressed these edits</i>
1.6 All study participants actively inform, engage and solicit input from the public in a coordinated fashion	Adherence to the public involvement strategy outlined in the stakeholder involvement plan	Yes <i>Website updates, email blasts, organizational briefings, public mtgs</i>
1.7 An effective public engagement strategy	Adherence to the public involvement strategy outlined in the stakeholder involvement plan	Yes <i>Website updates, email blasts, organizational briefings, public mtgs</i>
	Project website is regularly maintained with study documents and reports	Yes
	Monthly summaries of public comments provided to study participants	No <i>Public comments solicited in January, so monthly summaries weren't available.</i>
	Coordinate media and public engagement with city/town/county public information officers	Yes <i>Multiple entities published project updates and meeting announcements</i>
1.8 Ensure a "No-sacred cows" approach (process, options, assumptions)	Adherence to the Collaboration Commitment	Yes
1.9 Present information in a clear, consistent and understandable fashion	Present financial information in current-day dollars	Yes



Northwest and North Metro Extension Evaluation Matrix

Goal 2: Provide a High-Quality, Reliable and Cost-Effective Transit System

Measure	Measurement Type	Measurement Range	Northwest Rail				North Metro Rail Ext
			Westminster to 116 th St Broomfield	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont <i>Full Corridor</i>	
2.1 Provide better connections to the regional and local transit and transportation system							
Street Connectivity (Connections to interstates, highways and major roads)	Number of accessible interstates, highways (1st number) and major roads (2nd number) within 1/4-mile of stations	2/4 = Good, 1/3 = Average, 1/2 = Fair, less than 1/2 = Low	2/6 	1/4 	1/3 	2/13 	1/6
Change in roadway vehicle miles travelled (VMT)	Projected 2035 percentage change in VMT over No Build. Breakpoints are consistent with the FTA New and Small Starts Evaluation and Rating Process.	Total VMT for Metro Area is 101,696,927-daily. VMT saved ranges from 34,239 to 38,742 for NWR Segments 1 and 3 and 63,485 for the entire NWR corridor.	0.03% 	0.04% 	0.0% 	0.06% 	0.06%
2.2 Support the overall growth of transit ridership							
Projected 2035 boardings	Projected peak hour and all-day boardings by segment	More than 75,000 = Good, 74,999 to 34,000 = Average, 33,999 to 12,000 = Fair, Less than 12,000 = Low	2,100 to 3,400 	1,700 to 1,800 	2,000 to 2,100 	9,300 to 10,800 	840 to 900
2.3 Meet the level-of-service and quality-of-service needs of local communities							
Number of transfers required between major trips origins and destinations	Number of transfers required for each alternative between major origin and destination pairs (population centers and major activity centers)	1-2 = Good, More than 2 = Low	1-2 	1-2 	1-2 	1-2 	1-2
2.4 Provide a “backbone” transit network and level of service that can expand to support future transit expansion							
Operational schedule comparison to FasTracks commuter rail	Comparison of schedules for each alternative with applicable RTD services and national best practices	Better than FasTracks average (15 minute peak, 30 minute off-peak), Comparable to FasTracks average = Average, Less than FasTracks average = Low	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak.
		Better than national average (25 minute peak, 40 minute off-peak) = Good, Comparable to national average = Average, Less than national average = Low	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak. 	30 minute peak, 60 minute off-peak.

Goal 2: Provide a High-Quality, Reliable and Cost-Effective Transit System

Measure	Measurement Type	Measurement Range	Northwest Rail				North Metro Rail Ext
			Westminster to 116 th St Broomfield	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont <i>Full Corridor</i>	
2.5 Consistent and Reliable Travel Times							
Comparison of travel time of modes between major origin and destination pairs			116th Ave Broomfield to DUS via US 36	Louisville to DUS via US 36	Boulder Junction to DUS via US 36	Longmont to DUS via I-25	Longmont to DUS via I-25
Bus	AM Peak Period Travel Time (in minutes)	Lower travel time compared to other modes = Good, Comparable travel time compared to other modes = Average, Higher travel time compared to other modes = Low	19	22	38	53	53
Auto (GP/MG Lanes)	AM Peak Period Travel Time (in minutes)		33	38	46/31	59/44	59/44
Rail	AM Peak Period Travel Time (in minutes)						
2.6 Support station siting that that encourages multi-modal access and easy transfers							
Existing population density	Total existing population within 1/2-mile of stations / square mile. (FTA measurement range)	Greater than 15,000 = Good, 9,600 to 15,000 = Average, 5,760 to 9,599 = Fair, Less than 5,759 = Low	2,663	1,600	2,761	2,063	684
Existing total employment	Total existing employment within 1/2-mile of stations or stops. (FTA measurement range)	Greater than 220,000 = Good, 140,000 to 219,999 = Average, 70,000 to 139,000 = Fair, Less than 69,999 = Low	5,186	2,441	5,102	3,722	4,535
Future population density	Total 2035 projected population within 1/2-mile of stations / square mile (1st number is DRCOG, 2nd is jurisdictions). (FTA measurement range)	Greater than 15,000 = Good, 9,600 to 15,000 = Average, 5,760 to 9,599 = Fair, Less than 5,759 = Low	5,186/7,604	4,095/8,191	5,102/5,217	2,063/7,175	1,699/3,108
Future total employment	Total 2035 projected employment within 1/2-mile of stations or stops (1st number is DRCOG, 2nd is jurisdictions). Breakpoints consistent with FTA Ratings.	Greater than 220,000 = Good, 140,000 to 219,999 = Average, 70,000 to 139,000 = Fair, Less than 69,999 = Low	23,492/26,529	7,847/24,690	9,324	54,131/74,011	5,302
Bicycle/pedestrian environment (connection to trails, bike routes, sidewalks)	Coverage of trails, bike facilities and sidewalks within 1/4 mile of stations/stops	Direct trail and bicycle facility connections to stations = Good, some trail and bicycle facility connections with 1/4 mile of stations = Average, No trail or bicycle facilities = Low					
Proximity to other bus/rail stops	Number of existing RTD stations/stops with 1/4 mile of stations	30 or greater stops = Good, 29-20 Stops = Average, 19 - 10 Stops = Fair, Less than 10 Stops = Low					
Connectivity to service to DIA	SkyRide route within 1/4 mile of stations	Yes = Good, No = Low					

Goal 3: Provide Cost-Effective Transit Solutions

Measure	Measurement Type	Measurement Range	Northwest Rail				North Metro Rail Ext
			Westminster to 116 th St Broomfield	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont <i>Full Corridor</i>	
3.1 Minimize right-of-way impacts and property acquisitions							
Number of direct right-of-way impacts (station, PnRs and road improvements, track, etc.). Direct impacts will be identified where potential changes in use could occur, including areas of potential property acquisition and/or	Total number of direct right-of-way impacts in acres	Total number of direct right-of-way impacts in acres	18 acres 	18 acres 	16 acres 	76 acres 	89 acres
Impacts to Sensitive Land Use	Residential and civic/institutional uses which may be impacted by each alternative based in review of aerial photography, local land use plans and the DRCOG regional land use GIS dataset	Total acres of displaced sensitive land uses	0 acres 	0 acres 	2.4 acres 	3.9 	0 acres
Impacts to Parks and Open Space	Parks and open space are defined as lands that have been officially designated as such by a federal, state, or local agency	Total acres of impacted parks and open space	0.01 acres 	0.87 acres 	0.22 acres 	1.68 acres 	18 acres
Impacts to Sensitive Wildlife	Threatened, endangered, and state sensitive species	Total acres of impacted sensitive wildlife	4 acres 	3 acres 	54 acres 	90 acres 	N/A
Impacts to Water Resources (Lakes, ponds, wetlands, Streams, etc.)	Intermittent streams, as well as lakes and ponds as designated on U.S. Geological Survey (USGS) maps and National Wetlands Inventory (NWI) maps	Total acres of impacted streams, wetlands, etc.	1.2 acres 	1.2 acres 	6.3 acres 	9.11 acres 	1 acre of wetlands
Environmental Justice Impacts	DRCOG TAZs with substantial minority populations and/or low-income populations. Substantial minority populations within the affected areas were compared to the statewide average. A substantial minority population was considered present if the affected area when the percentage of minorities exceeds 50 percent, regardless if the percentage exceeds the statewide average. A substantial low-income population was considered present if the poverty rate within the area exceeds the statewide average.	Number of impacted TAZs with a substantial minority and/or low-income population	Crosses 7 TAZ with higher level of minority residents 	Crosses no TAZ with higher level of minority residents 	Crosses no TAZ with higher level of minority residents 	Crosses 12 TAZ with higher level of minority residents 	Crosses 5 TAZ with higher level of minority residents

Goal 3: Provide Cost-Effective Transit Solutions

Measure	Measurement Type	Measurement Range	Northwest Rail				North Metro Rail Ext
			Westminster to 116 th St Broomfield	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont Full Corridor	
3.2 Recommend solutions based on current funding availabilities, with prioritized list of solutions should new funding become available							
Fund availability schedule (what NWR money is available when, prior to 2044)	Fund availability schedule	Meets Project Schedule Needs (Yes/No)	TBD	TBD	TBD	TBD	TBD
Applicability of Additional Funding Sources							
FTA New/Small Starts	FTA New/Small Starts Criteria Guidance	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
TIGER Funding	Best Practices from Successful TIGER Applications	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
TIFIA Loans	FHWA Guidance on Innovative Program Delivery	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
RRIF Loans	FHWA Guidance on Innovative Program Delivery	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
P3 Opportunities and Innovative Funding	State of Colorado P3 Guidelines	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
New source of state or local funds	Potential new state enabling legislation	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
Study Recommendations should cost less than the current cost estimate	NWR (Northwest EE) and NME (North I-25 EIS)	Yes/No	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section

Goal 3: Provide Cost-Effective Transit Solutions

Measure	Measurement Type	Measurement Range	Northwest Rail				North Metro Rail Ext
			Westminster to 116 th St Broomfield (See Note below)	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont <i>Full Corridor</i>	
3.3 Recommend solutions whose costs justify the benefits							
Capital costs	Base year capital costs required to complete the corridor improvements	Total capital costs per alternative	*\$557 - \$681	*\$159 - \$194	*\$241 - \$295	*\$1,156 - \$1,413	*\$682 - \$834
Annualized Capital and O&M costs	Annualized capital costs and O&M costs based on service plan for each alternative	Total Annualized Capital and O&M costs per alternative	\$23.3	\$8.0	\$16.0	\$66.9	\$35.8
Annualized Cost per Annualized Boarding	Total annualized capital and O&M cost / total annualized boardings (FTA measurement range)	Less than \$4.00 = Good, Between \$4.00 and \$5.99, Average, Between \$6.00 and \$9.99 = Fair, More than \$15.00 = Low	\$36.19 ○	\$15.34 ○	\$26.10 ○	\$23.42 ○	\$138.82 ○
Subsidy per Boarding (compared to existing RTD Service)	Existing subsidy per Boarding for existing service and projected subsidy per boarding for each alternative based on projected revenue and total capital and O&M costs	Projected revenue - total Capital and O&M costs	TBD	TBD	TBD	TBD	TBD
Boardings per Revenue Vehicle Hour	Total projected boardings and vehicle hours per alternative	Total Boardings / Revenue Vehicle Hours. 2011 RTD Average Daily Boardings per Revenue Hour = 125.9	90.56 ○	233.06 ●	117.12 ○	108.92 ○	22.45 ○

*Costs in millions of dollars (\$ 2013) and includes Non-FasTracks stations (\$140M).

Note: The cost for this segment includes the DMU Maintenance Facility and the full NWR Corridor Operating Rights to be acquired from BNSF.

Goal 4: Respect and Support with Local and Regional Planning Efforts

Measure	Measurement Range	Northwest Rail				North Metro Rail Ext
		Westminster to 116th St Broomfield	Broomfield to Louisville	Louisville to Boulder	Westminster to Longmont <i>Full Corridor</i>	
4.1 Respect the Iterative Nature of Planning						
Local jurisdictions provide RTD and study team with guidance on interpreting their plans.	Yes = Good, No = Low	●	●	●	●	●
FTA New Starts Definition of Economic Development Potential in Corridor around Stations.	Potential FTA Economic Development Rating	◐	●	●	◐	○
4.2 Work with agencies and local communities to identify and consider appropriate local and regional plans						
DRCOG Regional Transportation Plan and State Transportation Plan – Regional Elements	Yes/No	Yes	Yes	Yes	Yes	No
FasTracks Integration	Yes/No	Yes	Yes	Yes	Yes	No
Transit Technology Options and Integration	Yes/No	Yes	Yes	Yes	Yes	Yes
4.3 Provide clarity and certainty about any commitments coming out of this projects						
Study commitments – and any financial requirements tied to them – are clearly documented in the final report	Yes/No	TBD	TBD	TBD	TBD	TBD









Arterial BRT Evaluation Matrix

Goal 2: Provide a High-Quality, Reliable and Cost-Effective Transit System

Measure	Measurement Type	Measurement Range	Potential Arterial BRT Corridors					
			S Boulder Road	120th Avenue	Arapahoe/ SH7	SH 42	US 287	SH 119
2.1 Provide better connections to the regional and local transit and transportation system								
Street Connectivity (Connections to interstates, highways, and major roads)	Number of accessible Interstates, US Highways (1st number) and State Highway and Major Roads (2nd number) within 1/4-mile of stations	2/4 = Good, 1/3 = Average, 1/2 = Fair, less than 1/2 = Low	3/12 ●	2/6 ●	3/13 ●	2/6 ●	2/11 ●	2/9 ●
Change in Regional roadway vehicle miles travelled (VMT)	Projected 2035 percentage change in VMT over No Build	Total VMT for Metro Area is 101,696,927	negligible	negligible	negligible	negligible	negligible	negligible
2.2 Support the overall growth of transit ridership								
2010-2013 Observed Boardings	Number of Boardings		2,939	767	2,477	n/a	1,328	1,894
DRCOG 2035 RTP	Number of Boardings		2,300	1,300	2,200	n/a	1,200	2,900
NAMS 2035 increased freq/no lanes	Number of Boardings		1,813	4,144	2,380	n/a	3,304	1,023
NAMS 2035 travel time improvements	Number of Boardings		3,300	5,000	4,600	900	9,000	5,000
2.3 Meet the level-of-service and quality-of-service needs of local communities								
Number of transfers required between major trips origins and destinations	Number of transfers required for each alternative between major origin and destination pairs (population centers and major activity centers)	1-2 = Good, More than 2 = Low	1-2 ●	1-2 ●	1-2 ●	1-2 ●	1-2 ●	1-2 ●
2.4 Provide a “backbone” transit network and level of service that can expand to support future transit expansion								
Operational schedule comparison to existing RTD Bus service	Comparison of schedules for each alternative with applicable RTD services and national best practices	Better than RTD average (15 minute peak, 30 minute off-peak) = Good, Comparable to RTD average = Average, Less than RTD average = Low	15/30 BTC 15/30 BTV 15/30 Local Dash ●	15/30 express 30/30 local ●	15/30 express 30/30 local ●	15/30 ◐	15/30 express 30/30 local ●	15/30 BTV 15/30 BTC 15/30 Bolt + J ●

Goal 2: Provide a High-Quality, Reliable and Cost-Effective Transit System

Measure	Measurement Type	Measurement Range	Potential Arterial BRT Corridors					
			S Boulder Road	120th Avenue	Arapahoe /SH7	SH 42	US 287	SH 119
2.5 Consistent and Reliable Travel Times								
Comparison of travel time of modes between major origin and destination pairs								
Existing Local Background Bus Service	AM Peak Period Travel Time (in minutes)	Lower travel time compared to other modes = Good, Comparable travel time compared to other modes = Average, Higher travel time compared to other modes = Low	28-min <small>Lafayette pnR-Table Mesa</small>	60-min <small>ADCOGC to Broomfield pnR</small>	44-min <small>Lafayette pnR- BTC</small>	n/a	56-min <small>21st pnR- Broomfield pnR</small>	44-min <small>21st pnR-BTC</small>
Arterial BRT	AM Peak Period Travel Time (in minutes)		21-min <small>Lafayette pnR-Table Mesa</small> 	41-min <small>ADCOGC to Broomfield pnR</small> 	34-min <small>Lafayette pnR- BTC</small> 	38-min <small>287/Arapahoe to Broomfield pnR</small> 	39-min <small>21st pnR- Broomfield pnR</small> 	36-min <small>21st pnR-BTC</small> 
Auto (GP Lanes)	AM Peak Period Travel Time (in minutes)		18-min <small>Lafayette pnR-Table Mesa</small>	39-min <small>ADCOGC to Broomfield pnR</small>	28-min <small>Lafayette pnR- BTC</small>	37-min <small>287/Arapahoe to Broomfield pnR</small>	44-min <small>21st pnR- Broomfield pnR</small>	37-min <small>21st pnR-BTC</small>

Goal 2: Provide a High-Quality, Reliable and Cost-Effective Transit System

Measure	Measurement Type	Measurement Range	Potential Arterial BRT Corridors					
			S Boulder Road	120th Avenue	Arapahoe/ SH7	SH 42	US 287	SH 119
2.6 Support station siting that that encourages multi-modal access and easy transfers								
Existing Population density	Total existing population density within 1/2-mile of stations / square mile. Breakpoints consistent with FTA Ratings.	Greater than 15,000 = Good, 9,600 - 15,000 = Average, 5,760 to 9,599 = Fair, Less than 5,759 = Low	4,931	2,736	2,598	972	2,399	3,552
Existing Total employment	Total existing employment within 1/2-mile of stations or stops. Breakpoints consistent with FTA Ratings.	Greater than 220,000 = Good, 140,000 - 219,999 = Average, 70,000 to 139,000 = Fair, Less than 69,999 = Low	54,592	10,527	39,608	21,927	19,832	58,034
Future Population density	Total 2035 projected population density within 1/2-mile of stations / square mile (1st number is DRCOG, 2nd is jurisdictions). Breakpoints consistent with FTA Ratings.	Greater than 15,000 = Good, 9,600 - 15,000 = Average, 5,760 to 9,599 = Fair, Less than 5,759 = Low	5,844/5,545	3,664	3,713/3,635	1,804/2,033	2,676	4,311/4,332
Future Total employment	Total 2035 projected employment within 1/2-mile of stations or stops (1st number is DRCOG, 2nd is jurisdictions). Breakpoints consistent with FTA Ratings.	Greater than 220,000 = Good, 140,000 - 219,999 = Average, 70,000 to 139,000 = Fair, Less than 69,999 = Low	54,986/56,343	14,588	51,609/52,776	37,534/39,233	20,410	56,942/61,307
Bicycle/pedestrian environment (connection to trails, bike routes, sidewalks)	Coverage of trails, bike facilities and sidewalks within 1/4 mile of stations/stops	Direct trail and bicycle facility connections to stations = Good, some trail and bicycle facility connections with 1/4 mile of stations = Average, No trail or bicycle facilities = Low	●	●	●	●	●	●
Proximity to other bus/rail stops	Number of existing RTD stations/stops with 1/4 mile of stations	30 or greater stops = Good, 29-20 Stops = Average, 19 - 10 Stops = Fair, Less than 10 Stops = Low	335 ●	67 ●	214 ●	78 ●	156 ●	328 ●
Connectivity to service to DIA	SkyRide route within 1/4 mile of stations	Yes = Good, No = Low	Yes ●	Yes ●	Yes ●	Yes ●	Yes ●	Yes ●

Goal 3: Provide Cost-Effective Transit Solutions

Measure	Measurement Type	Measurement Range	Potential Arterial BRT Corridors					
			S Boulder Road	120th Avenue	Arapahoe/SH7	SH 42	US 287	SH 119
3.1 Minimize right-of-way impacts and property acquisitions (Future work is need to review assessor’s data, inventory properties, and coordinate with the State Preservation Officer in order to determine eligibility for listing on the National Register of Historic Places)								
Historical/Cultural	Quantitative	Total number of potential historic impacts	97 	13 	121 	24 	40 	43
Water Resources	Quantitative	Potential water resource historic impacts	0 	0 	1 	1 	1 	0
Sensitive Land Use (Trails, Parks/Open Space, Structures in close proximity)	Quantitative	Potential sensitive land use impacts	15 	7 	5 	3 	9 	15
3.2 Recommend solutions based on current funding availabilities, with prioritized list of solutions should new funding become available								
Applicability of Additional Funding Sources								
FTA New/Small Starts	FTA New/Small Starts Criteria Guidance	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
TIGER Funding	Best Practices from Successful TIGER Applications	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
TIFIA Loans	FHWA Guidance on Innovative Program Delivery	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
RRIF Loans	FHWA Guidance on Innovative Program Delivery	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
P3 Opportunities and Innovative Funding	State of Colorado P3 Guidelines	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section
New source of state or local funds	Potential new state enabling legislation	by eligibility	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section	See Financial Section

Goal 3: Provide Cost-Effective Transit Solutions

Measure	Measurement Type	Measurement Range	Potential Arterial BRT Corridors					
			S Boulder Road	120th Avenue	Arapahoe/ SH7	SH 42	US 287	SH 119
3.3 Recommend solutions whose costs justify the benefits								
Capital costs	Base year capital costs required to complete the corridor improvements	Total capital costs per alternative	\$36.43 M	\$32.13 M	\$45.39 M	\$27.36 M	\$56.41 M	\$56.92 M
Annualized Capital and O&M costs	Annualized capital costs and O&M costs based on service plan for each alternative	Total Annualized Capital and O&M costs per alternative	\$9.9 M	5.96 M	5.97 M	3 M	10.3 M	\$9.4 M
Annualized Cost per Rider	Total annualized capital and O&M cost / total annualized boardings	Less than \$4.00 = Good, Between \$4.00 and \$5.99, Average, Between \$6.00 and \$9.99 = Fair, More than \$10.00 = Low	\$10.01	\$3.97	\$4.33	\$11.14	\$3.82	\$6.27
Subsidy per Boarding (compared to existing RTD Service)	Existing subsidy per Boarding for existing service and projected subsidy per boarding for each alternative based on projected revenue and total capital and O&M costs	Average RTD subsidy per boarding for: Urban local service = \$3.45, Suburban local = \$7.12 Express service = \$3.31	\$6.53	\$1.35	\$1.25	\$4.54	\$1.19	\$2.80
Boardings per Revenue Vehicle Hour	Total projected boardings and vehicle hours per alternative	Average RTD boardings per revenue hour for: Urban local service = 28.6 Suburban local = 16.4 Express service = 43.1	12.2	27.5	30.7	16.4	60.1	28

Goal 4: Respect and Support with Local and Regional Planning Efforts

Measure	Measurement Range	Potential Arterial BRT Corridors					
		S Boulder Road	120th Avenue	Arapahoe/ SH7	SH 42	US 287	SH 119
4.1 Respect the Iterative Nature of Planning							
Local jurisdictions provide RTD and study team with guidance on interpreting their plans.	Yes = Good, No = Low	●	●	●	●	●	●
FTA New Starts Definition of Economic Development Potential in Corridor around Stations.	Potential FTA Economic Development Rating	*	*	*	*	*	*
4.2 Work with agencies and local communities to identify and consider appropriate local and regional plans							
DRCOG Regional Transportation Plan and State Transportation Plan – Regional Elements	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes
FasTracks Integration	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes
Transit Technology Options and Integration	Yes/No	Yes	Yes	Yes	Yes	Yes	Yes
4.3 Provide clarity and certainty about any commitments coming out of this projects							
Study commitments – and any financial requirements tied to them – are clearly documented in the final report	Yes/No	TBD	TBD	TBD	TBD	TBD	TBD

* Would require more detailed station area planning to be competitive for potential FTA Small Starts



Financial Section and Evaluation Matrix



Applicability of Funding Sources for NAMS Projects and Funding Evaluation

NAMS Financial Planning Activities

- Identify and Understand Range of Funding Sources – Nov 2013
 - Federal, State, DRCOG, District-based, Private, Philanthropic
- **Evaluate Applicability of Funding Sources – Jan 2014:**
- **Estimate Likelihood and Magnitude of Potential Funding – TAC Jan 9th Jan 2014**
- **Project Phasing, Prioritization and Funding Plan to be Discussed with PAC on Jan 30th –Jan 2014**

Projects Under Consideration for Funding

- NAMS Rail Corridors
 - Northwest Rail – (From Westminster to Longmont)
- Potential Arterial BRT Corridors
 - SH 119
 - Arapahoe/SH 7
 - SH 287
 - South Boulder Road including Broadway/28th Street:
(Also, connecting US 36 to Boulder Junction and 14th and Walnut)
 - 120th Avenue
 - SH 42

Potential Funding/Financing Sources

State and Federal

	Capital Expenses	Operating Costs
Federal		
Section 5307 – Urbanized Area Formula Grants	◆	
Section 5309 – New Starts / Small Starts	◆	
Section 5339 – Bus and Bus Facilities	◆	
TIGER	◆	
DRCOG TIP – STP and CMAQ Funds	◆	
State		
Funding Advancement for Surface Transportation & Economic Recovery (FASTER)	◆	◆
MPACT64	◆	◆

Financial plan typically comprises a package of multiple funding sources

Potential Funding/Financing Sources

Local

	Capital Expenses	Operating Costs
Local / Regional Taxes and Assessments		
TIF	◆	◆
Special District	◆	◆
RTD Dedicated Funding Sources	◆	◆
System Generated		
Fare Revenue		◆
Real Estate	◆	◆
Private		
Public-Private Partnership	◆	◆
Philanthropy	◆	◆

Financial plan typically comprises a package of multiple funding sources

Local/Regional Funding Sources

Type of Funding	Definition	Applicability	Magnitude	Probability
Tax Increment Financing (TIF)	Borrow against future growth in tax assessments to finance infrastructure improvements	Downtown/ redevelopment areas Blighted areas Station area development	Depends upon size and scope of development	Agencies with TIF authority already established in Denver and Boulder – Could be used in certain cases
Special Assessment Districts	Special tax assessed on those that directly benefit from the improvement(s) funded by the tax	Station area development Circulator/streetcar projects	Typically limited to a small contiguous area	Created by vote of those within proposed district, must also be approved by municipality/county
Private Funding	e.g.: <ul style="list-style-type: none"> • P3 • Philanthropy • Corporate naming rights 	Station area development Development of a new line	Typically under \$10M Up to \$100M (Detroit) Denver’s CPV Light Rail received \$2.55M in private funding.	TBD – Would need solicitation of interest from private sources

Subregional RTA

Applicability:

- Collect revenue in the NAMS region
- Bond against that revenue and lend the money to RTD
- Assume the debt with a negotiated RTD payback

Availability:

- Enabling legislation passed in 2005
- Would require voter referendum within proposed area

Magnitude – Conceptual Analysis

- Potential bonding capacity assuming 20-year repayment, 3% real interest rate (above inflation). The following projections would need to factor in payment schedules, bond issuance costs, debt service coverage costs and other items.
 - at \$10M/year: \$150M
 - at \$25M/year: \$370M
 - at \$75M/year: \$1.12Bn

Summary Matrix

Source	Northwest Rail			Arterial BRT (various Corridors)		
	Applicability	Magnitude	Probability of Funding	Applicability	Magnitude	Probability of Funding
Federal						
New Starts	●	● \$75M +	○ Full project unlikely to qualify for funding	◐ Fixed guideway required	● \$75M +	◐ Depends on project ratings
Small Starts	● Project Cost >\$250M, Federal share < \$75M	◐ Up to \$75M	◐ Requires a phased approach to manage costs	● "Corridor-based BRT" <\$75M federal share	◐ Up to \$75M	◐ Depends on project ratings
TIGER Funding	◐ Station area and ROW upgrades	◐ Up to \$20M	◐ Highly competitive	● US 36 BRT upgrades received \$4.8M	◐ Up to \$20M	◐ Highly competitive
DRCOG TIP (STP and CMAQ)	● Need to be included in 2040 RTP	○	○	● Need to be included in 2040 RTP	◐ Systemwide total ~\$52M	◐ DRCOG Process Depends on corridor
State						
MPACT64	● Transit set-aside	● \$100M - \$120M/yr	? New Initiative	● Transit set-aside	● \$100M - \$120M/yr	? New Initiative
FASTER	◐ Ancillary improvements?	○ Insufficient for substantial project	◐ Dozens of statewide grantees	● Bus purchases and station improvements	◐ Up to \$3M	◐ Dozens of statewide grantees
Local/Regional						
Innovative Funding / Value Capture	● Applicable to small area projects	○ Depends on project scale	○	●	◐ Depends on project scale	◐
Subregional RTA	●	◐	? Would require voter referendum	●	●	? Would require voter referendum
RTD Local Sales Tax Funds (FasTracks NWR/ Base System Arterial BRT)	●	●	● NWR Remains in Plan	●	◐	◐