

BOARD OF DIRECTORS REPORT



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To: Clarence W. Marsella, General Manager
From: Bill Van Meter, Acting Assistant General Manager, Planning *WAS for BVM*
Date: June 15, 2009
Subject: Rapid Transit Station Addition Policy

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|-----------------------------------|----------------|------|
| Date: | <i>6/15/09</i> | |
| GM: | <i>Cwm</i> | |
| Board Meeting Date: June 23, 2009 | | |
| ACTION | DISCUSSION | INFO |
| X | | |

RECOMMENDED ACTION

It is recommended by the Planning and Development Committee that the Board of Directors adopt this policy, which updates the District's current established procedures and guidelines for evaluating proposed new stations on RTD's existing and planned light rail and commuter rail lines. Since each potential station and station area is unique, no one set of guidelines should determine whether a station is appropriate for a specific site. The criteria described below are meant to serve as a policy framework for issues that should be considered when planning for and approving new stations. RTD staff will evaluate each of the criteria, and provide the results for the RTD Board's information when considering the approval of a new station. Final determination regarding whether new stations will be added to light rail and commuter rail lines, and who will provide associated funding of new stations, will be a Board decision on a case by case basis.

BACKGROUND

RTD periodically receives requests for consideration of new stations to be added to the existing and planned light rail and commuter rail systems, and staff anticipates that as new rapid transit lines open, there will continue to be requests for additional stations on these lines over time. In response to these requests, in 2003 the Board of Directors adopted the current "Rapid Transit Station Spacing and Station Naming Policy." This 2009 Policy Update is proposed as a means to add commuter rail to the existing policy, which is focused primarily on light rail, and to provide updates that reflect updated Federal Transit Administration (FTA) measures and FasTracks experience.

Definition of Rail Modes and Station Spacing Guidelines

The following discussion presents information on RTD's light rail and commuter rail modes and relates general guidance for station spacing for these modes.

Light Rail Transit

Light rail (LRT) utilizes electrically propelled cars, or trains of cars, operating either on exclusive rights-of-way or over public streets, with power supplied by overhead wires. Tracks used for light rail operations are not normally shared with freight and other railway passenger trains. Light rail systems are intended to accommodate all types and lengths of passenger trips within the most densely developed portions of metropolitan areas during weekday peak travel periods, as well as during off-peak travel periods. Typically, light rail routes range from 5 to 20 miles in length. Frequency of service on light rail systems typically ranges from five to 15 minutes during peak travel periods, and from 10 to 20 minutes during other times of the day. Normal station spacing for such systems ranges from one-quarter mile to one mile, providing good access while maintaining reasonable overall operating speeds. Table 1, below, provides guidance for LRT station spacing.

Table 1

| Light Rail Line Setting | Station Spacing |
|--------------------------------|------------------------|
| Central Business District | ¼ to ½ mile |
| Dense Urban | ½ to ¾ mile |
| Mixed Urban/Suburban | ¾ to 1 mile |
| Suburban | 1 to 1½ miles |
| Maximum | 2 miles |

Commuter Rail Transit

For purposes of this Board Report, RTD has identified 2 types of Commuter Rail, Tier One and Tier Two, based on physical and operating characteristics, as described below.

Tier One Commuter Rail

Tier One Commuter Rail (CR1) is primarily intended to service the long-distance, regional traveler market. CR1 rail normally accommodates the longest-distance trips made within metropolitan regions during weekday peak travel periods, at high overall average operating speeds, with relatively few station stops. Typical CR1 rail routes range from 20 to 50 miles in length. CR1 rail frequency of service on individual routes may be every 20 to 60 minutes during weekday peak travel periods, with less frequent off-peak service. CR1 vehicles often have relatively slow acceleration and deceleration rates, making stopping and starting more time-consuming than for LRT. The Northwest Rail Corridor meets the general definition of CR1. Table 2, below, provides guidance for station spacing to optimize CR1 rail performance (i.e., maintain a high average train speed) and maximize ridership. In the evaluation of station spacing, consideration will be given to opportunities for future transit supportive development in the determination of the category of rail setting for future stations and corresponding station spacing.

Table 2

| CR1 Rail Setting | Station Spacing |
|-------------------------|------------------------|
| Urban | 2 to 3 miles |
| Suburban | 3 to 5 miles |
| Rural | 5 to 8 miles |
| Maximum | 10 miles |

Tier Two Commuter Rail

In general, Tier Two Commuter Rail (CR2) systems are those with shorter lines that provide more frequent service than CR1 systems. CR2 systems are intended to accommodate all types and lengths of passenger trips within the more densely developed portions of metropolitan areas during weekday peak travel periods, as well as during off-peak travel periods. CR2 rail routes often range from 10 to 20+ miles in length. Frequency of service on CR2 rail systems can range from 10 to 30 minutes during peak travel periods, and from 15 to 60 minutes during other times of the day. The Gold Line, East Corridor and North Metro Corridor generally meet the definition of CR2. In the evaluation of station spacing, consideration will be given to opportunities for future transit supportive development in the determination of the category of rail setting for future stations and corresponding station spacing. Table 3, below, provides guidance for CR2 station spacing.

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Table 3

| CR2 Rail Setting | Station Spacing |
|---------------------------|------------------------|
| Central Business District | ½ to 1 mile |
| Dense Urban | 1 to 2 miles |
| Mixed Urban/Suburban | 2 to 3 miles |
| Suburban | 3 to 4 miles |
| Maximum | 5 miles |

DISCUSSION

The capital and operating and maintenance (O&M) costs of adding a new station can vary greatly depending upon when a new station is added, and on its corridor-specific impacts. If the addition of a station does not require an increase in rail fleet, i.e., an additional trainset, additional costs would likely only include the cost of the station platform and its associated components, access requirements, and station O&M costs. The cost of this relatively minimal investment may be in the order of \$6-\$12 million, excluding annual costs for station O&M. However, if the addition of a new station requires the operation of an additional trainset to maintain service frequency (due to increased travel time for the train), then significant upfront capital and ongoing annual vehicle O&M costs will significantly increase the long-term cumulative cost of adding the new station. Impacts could run to \$6-\$12 million for station costs; \$8-\$16 million for an additional trainset; and \$2-\$3 million annually in additional vehicle O&M costs.

This policy presumes a "first in" methodology for adding stations. This means that if the first new station requires an additional trainset, the first requestor would be responsible for securing these funds. If the first station does not require a new trainset but the second additional station does due to increased cycle time, then the second requestor would be responsible for securing these additional funds. All requestors for new stations should be responsible for securing funding for the station platform and its associated components, access requirements, and station O&M costs.

The following bullets provide guidance for evaluating each proposed new station, none are pass/fail criteria.

1. *Station Spacing* All additional station locations should consider the spacing guidance presented in the Discussion section above for the appropriate mode. As this is only guidance, exceptions would be acceptable if other criteria support the station.
2. *Annualized Cost/Benefits* For this analysis, annualized costs are divided by the annualized benefits. To justify a new station using this measure, this ratio would need to be positive, as well as less than or equal to one.

Costs

The annualized cost includes the following items:

- Annualized capital costs (station, trackwork, number of rail vehicles, access roads, etc.), plus
- Annual O&M costs associated with the new station, including O&M costs of additional trains, if required as a result of the additional train run times resulting from the new station

Benefits

The annualized benefit (revenues) includes:

- Annualized contribution to capital and or operating costs from non-RTD sources, plus
- Projected annualized farebox revenues from new riders, plus
- Other annualized revenues (such as dollars from land development).

3. *Impact to FTA Cost Effectiveness Index (CEI)* The FTA's measure of cost-effectiveness for New Starts project funding is the CEI. For projects that are programmed to receive New Starts funding, the CEI must be below FTA's threshold to maintain federal funding eligibility. CEI thresholds are updated by FTA on an annual basis. For this measure, RTD staff will inform the Board of the estimated impact of a proposed new station (positive or negative) on the corridor's CEI, and will inform the Board whether, as a result, there is a potential impact to federal funding eligibility.
4. *Timing of Request* The timing of a third party request may have an effect on the environmental clearance/NEPA schedule as well as the engineering and construction project schedules. Several scenarios may occur including:
- Request incorporated prior to development of the draft environmental document; this may result in some delay in overall project schedule and may require a nominal cost change order to the environmental contractor.
 - Request incorporated prior to development of the final environmental document; this would require supplemental environmental clearance for the new station, which likely would delay the overall project schedule as well as require a change order with associated cost increases required for environmental clearance.
 - Request made between final environmental clearance and Record of Decision; this would cause a significant delay in gaining final environmental approval from the FTA, requiring RTD to incur potentially significant schedule delays and costs associated with reworking environmental documentation.
 - Request made after receiving environmental clearance; this would require supplemental environmental clearance and could delay the overall project schedule as well as require a change order.
 - Request made during construction; this would require supplemental environmental clearance; and would likely delay the overall project schedule as well as require a change order. Adding a station at this phase could add considerable costs to construction.
 - Request made after operations have begun; this would require supplemental environmental clearance and securing a construction contractor. It should be noted that adding stations to existing lines could be highly disruptive to operations, requiring closures for construction.
5. *Constructability*. Is the proposed site compatible with RTD design criteria for stations – i.e., grades, tangents, widths, lengths, signalization, power system requirements, etc.?
6. *Adjacent Transportation Network (for auto, bicycle and pedestrian access)*. Is the station easily accessible from existing or planned major roadways and do those roadways have sufficient capacity to handle the additional vehicular, pedestrian, and bicycle movements that a new station would generate? It is RTD's practice to identify and mitigate impacts to auto, bicycle and pedestrian access that are attributable to the transit improvement under consideration. This measure assures that these impacts continue to be addressed appropriately.

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7. *Local Bus Network.* Does the local bus network serve the station? Can the bus network be easily modified to serve this new station?
8. *Community Support.* Is the community in favor of a potential station? Would the community, especially if it is a residential neighborhood, prefer not to have a station? Is this new station supported by the affected municipality and/or the development community? Does the potential station have transit supportive land uses planned in the immediate vicinity? Affected communities will be allowed to suggest modifications if they believe better TOD opportunities exist on/at a nearby site.
9. *Equity.* Is there a transit dependant population nearby that could benefit from, or be negatively impacted by, proximity to the station? Does this addition adversely affect the condition of "hold harmless" as stated in the FasTracks Program?

These criteria are meant to serve as a framework for issues that should be considered by RTD when considering stations. As noted, since each potential station and station area is unique, no one set of guidelines should determine whether a station is appropriate for a specific site.

FINANCIAL IMPACT

Preparation of the Rapid Transit Station Addition criteria for Board consideration will require staff time and potentially some additional costs for consultant services. As documented above, significant costs could be incurred by the District if new stations are approved. These costs would include additional environmental clearance costs, costs to construct, operate and maintain the new stations, and costs for additional vehicles, if needed to maintain service frequencies. The Board will need to consider these costs on a case by case basis and determine funding responsibility as appropriate.

ALTERNATIVES

1. Accept the recommended action. It is recommended by the Planning and Development Committee that the Board of Directors adopt this policy, which updates the District's current established procedures and guidelines for evaluating proposed new stations on RTD's existing and planned light rail and commuter rail lines. Since each potential station and station area is unique, no one set of guidelines should determine whether a station is appropriate for a specific site. The criteria described below are meant to serve as a policy framework for issues that should be considered when planning for and approving new stations. These results shall be developed by RTD staff for the RTD Board's information when considering the approval of a new station. Final determination regarding whether new stations will be added to light rail and commuter rail lines, and associated funding of new stations, will be a Board decision on a case by case basis.
2. Modify this policy to append or reduce the number of criteria suggested in this document.
3. Do not adopt this policy; instead leave the 2003 version in place. The 2003 version does not specifically address Commuter Rail corridors, nor does it include an analysis of the impact to the Federal Transit Administration's Cost Effectiveness Index. This option is not recommended. The recommended alternative, to update the 2003 policy, will provide the RTD Board with a broader range of information to be used when considering whether to add additional stations.