Planning, Development & Transportation

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Service Standards and Policies

Planning, Development & Transportation (PDT) Mission Statement:

The success of PDT is built on the skills and efforts of a talented, dedicated and professional work force. We strive to be seen as creative problem solvers, who seek collaborative outcomes with stakeholders, citizens, boards and commissions.

Transfort / Dial A Ride Vision:

We are the first choice for transportation in our greater community.

Transfort / Dial A Ride Mission:

We provide exceptional, customer-focused service that meets our community's present and future transit needs.

Transfort / Dial A Ride Goals:

Provide safe, clean, reliable, cost-effective, courteous, accessible and efficient service. Develop and nurture a culture of collaboration, communication and innovation. Engage and empower our exceptional workforce. Secure and be responsible stewards of transit resources.

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1. Introduction

1.1 Overview

Transfort continually receives requests for changes to existing service and for new service in growing areas of the City. Additionally, Transfort may be operating some services that are not attracting enough riders to justify their cost. In order to be consistent in the evaluation of service proposals, and to ensure that the service being provided represents the most cost-effective use of the City's resources, a set of service standards is maintained by Transfort.

The specific procedure for applying these standards is presented in this document. Since service standards are intended to optimize usage of the City's resources, they are updated periodically to reflect changes in the City goals and resources. The procedure for updating the standards is described in Section 1.3.

1.2 Application

The standards are used to evaluate existing services and to evaluate proposals for new service. These standards are a benchmark by which service operations performance may be monitored and analyzed.

The application of standards to existing routes is a flexible process. The purpose of the standards is to help identify routes which are most in need of service changes, such as restructuring to eliminate lower-productivity segments or branches, adjusting service frequency to better reflect the demand for service, or providing additional Marketing efforts to promote less patronized routes where appropriate. Routes, which do not meet standards, are not automatically designated for elimination. Elimination of routes is only intended as a last resort, when it has been determined that no cost-effective actions are available to improve the productivity of the route.

The standards for evaluation of existing routes are not intended to preclude changes to routes that meet these minimum standards. In many cases, it may be possible to improve the productivity of routes that meet the minimum standards by making changes to headways or trip times. Since the goal of Transfort is to "provide safe, clean, reliable, courteous, cost-effective public transit " these standards should not be used to prevent changes to improve the efficiency of existing routes, as long as the changes meet the route design standards.

The evaluation of new service proposals will take place as proposals are received or needs identified. The most recent standards for existing routes will be used to evaluate the proposed new services. Decisions regarding implementation of new routes will be made through the service planning process. New routes will be expected to meet all applicable route design standards described in Chapter 2 but will not be expected to meet the productivity standards described in Chapters 2 and 3 until they have been in operation for at least 24 months.

1.3 Updating

The service standards are intended to support the goals and objectives of the City. Since these objectives and the resources available to attain them can be expected to change over time, the standards will be revised periodically to reflect those changes.

The service standards will be reviewed on a bi-annual basis. At that time, experience with the service standards over the previous time period, as well as changes in the City's goals and objectives, will be used to determine whether any standards should be added or revised.

The numerical values of productivity standards will be updated each year, using ridership, revenue and cost figures for the most recent twelve-month period for which data are available. The rankings are based only on those routes that existed for the entire year. Routes which were eliminated during the year will not be included because they cannot be identified as candidates for revisions. Routes that were introduced during the year will not be included in determining the new standards since they are not required to meet the productivity standards until they have been in operation for at least six months. However, these routes will be evaluated separately, using the service standards contained in this document.

The updating procedure will compare the values of the productivity standards with those in effect for the previous year. Operating cost data for the previous year will be revised to account for system-wide increases or decreases in operating cost.

2. Productivity Standards

2.1 Use of Standards

The productivity standards are used to identify routes and services for appropriate marketing and possible revision or elimination. Separate standards are identified for each class of service. Routes are evaluated on ridership (either boardings per in-service hour or mile, depending on the class of service).

New services should meet the applicable standards for their class of service after twenty four months of operation. All new services will be reviewed after twenty four months of operation and routes that have not shown adequate progress toward meeting the standards will be targeted for cost-effective actions to increase productivity or for elimination.

For the purpose of applying the standards, routes will be divided into five groups based on area-type and land-use designations:

Rapid Transit Route- operates in a dedicated guideway through dense employment areas, at high frequencies. These routes make limited stops offering a direct non-stop service.

Commercial Route – providing a basic level of transit access throughout the city, and operate in all periods. These routes operate primarily in arterial corridors. Commercial routes operate at a frequency of at least 60 minutes.

University Route- these routes service high demand, densely populated areas near Colorado State University, with direct service to campus. These routes are held to high standards to justify their limited market. University routes operate at a greater frequency when school is in session.

Residential Route- these routes serve residential areas within the community

Regional Route- operates primarily outside of the City of Fort Collins with limited stops to expedite commuting between communities.

The standards for evaluating portions of routes are intended for use in identifying needed service improvements, for making modifications to specific portions of existing routes, or for identifying low productivity segments of routes.

These standards could be used in situations such as isolating low productivity portions of otherwise productive routes or measuring options for bringing unproductive routes into compliance with the overall service standards. These standards may also be used to evaluate proposals for new route extensions or deviations on existing routes.

2.2 Ridership and Economic Measures

Transfort's approach is to develop transit services suited to a variety of travel markets. All services are designed to match the level of service with demand, thus improving performance and sustainability. This results in multiple domains of acceptable performance for the various classes of service. The objective is to maximize overall ridership with the available resources.

2.2.1 Performance Measures

Performance will be monitored and measured using the following metrics:

- Passengers/hour
- Passengers/mile

Passengers per hour refer to the number of passengers per in-service (revenue) hour. Passengers per mile refer to the number of passengers per revenue mile.

2.2.2 Passengers per revenue hour and revenue mile

Transfort has employed a method to monitor service performance measures to assure optimal productivity levels for public transportation services. Measures have been established to determine if a route is operating at an "E" (Exceeds), "S" (Satisfactory), "M" (Marginal), and "U" (Unsatisfactory) level of performance. The following actions are taken based on the level of performance findings:

- E = Consider headway improvements
- S = No change
- M or U = headway reductions, operation at policy headways, marketing, redesign or elimination

Routes are evaluated based on the number of total passengers carried per revenue hour, and total passengers per revenue mile. A system wide benchmark of 20 passengers per hour was set per City Council direction. Routes are organized into four subcategories and respective performance standards are summarized in the **Figure 1** below.

Figure 1. Passenger per revenue hour and mile by service category

Transfort has employed a method to monitor service performance measures to assure optimal productivity levels for public transportation services.

Rapid Route		**Pass/Hour**	**Pass/Mile**
	Exceeds	>50	>8
	Satisfactory	41-50	6-8
	Marginal	20-40	4-5
	Unsatisfactory	<20	<4
Commercial Route		**Pass/Hour**	**Pass/Mile**
	Exceeds	>30	>3.5
	Satisfactory	20-30	2.5-3.5
	Marginal	15-20	1.5-2.5
	Unsatisfactory	<15	<1.5
University Route		**Pass/Hour**	**Pass/Mile**
	Exceeds	>60	>5
	Satisfactory	30-60	3-5
	Marginal	20-30	1.5-3
	Unsatisfactory	<20	<1.5
Residential Route		**Pass/Hour**	**Pass/Mile**

	Exceeds	>40	>2
	Satisfactory	20-40	1.5-2
	Marginal	15-20	1-1.5
	Unsatisfactory	<15	<.5
Regional Route		**Pass/Hour**	**Pass/Mile**
	Exceeds	>30	>2
	Satisfactory	20-30	1-2
	Marginal	15-20	75-1
	Unsatisfactory	<15	<.75

3. Vehicle Load

3.1 Maximum Load Standard

For local routes in the peak periods, the maximum load standard is 125% of a seated load at the maximum load point. For rapid, commercial, university, and residential routes outside of the peak periods and regional routes for all periods the maximum load is the seated capacity of the bus.

Figure 2. Maximum Load Standard

Service Type	Time	Load Standard
Rapid Transit Route	Peak*	150% Seated Capacity
	Off Peak	Seated Capacity
Commercial Route	Peak*	125% Seated Capacity
	Off Peak	Seated Capacity
University Route	Peak*	125% Seated Capacity
	Off Peak	Seated Capacity
Residential Route	Peak*	125% Seated Capacity
	Off Peak	Seated Capacity
Regional Route	Peak*	125% Seated Capacity
	Off Peak	Seated Capacity

* Peak intervals: Monday-Friday between 7:00 am and 9:00 am
Monday-Friday between 2:30 pm to 6:00 pm

4. Vehicle Headway

4.1 Minimum Service Frequency

New routes shall provide the minimum frequencies specified below. Existing services that cannot meet these minimum standards while adhering to the minimum passengers per hour or trip standards defined in Chapter 2 shall be identified as candidates for service changes or appropriate marketing promotion within available resources. These service changes may include providing service with longer headways if no other viable alternative exists. Elimination of the route may be considered if service changes and/or promotional efforts do not improve productivity.

These are “policy” service levels and represent a compromise between economic efficiency and the functionality of the system. To be sustained at these levels, a route must meet the minimum ridership performance standards discussed in Section 2.2.1. Routes providing frequencies higher than the policy minimum must be justified by ridership demand.

The following table indicates the minimum frequency standard for types of service and time of day.

Figure 3. Minimum Service Frequency

Service Type	Time Frame	Minimum Frequency
Rapid Route	Peak*	15 min
	Off Peak	30 min
Commercial Route	Peak*	60 min
	Off Peak	60 min
University	Peak*	30 min
	Off Peak	60 min
Residential	Peak*	30 min
	Off Peak	60 min
Regional	2 peak trips, Monday – Friday trips should target: 7:00 AM- 9:00 AM work shift start times 4:00 PM- 6:00 PM work shift end times	

4.2 Demand Based Service Frequency

For routes meeting the above frequency, ridership, and load standards, frequency better than every 30 minutes may be provided when and where justified by ridership. This standard applies equally to all service categories. In order to be sustainable, higher frequency service must meet the following criteria:

• Incremental frequency necessary to maintain the appropriate load standard during any 30 minute time period.

• When a service exceeds the maximum load standard, higher frequency may be justified during that time period and/or route segment.

Service frequency in the Transfort network is based on 'clock pattern' schedules. This pattern provides consistent and easy to understand schedules for our customers, and makes possible the provision of timed transfer connection hubs, whereby multiple routes are scheduled to meet at one location to facilitate connections. In general, routes are scheduled to operate in even increments of 30 minutes, or every 60, 30, 20, or 15. However, other frequencies may be provided depending upon passenger demand, or operational and scheduling needs.

5. Service Availability

5.1 Design Standards

A transit operator inevitably receives many requests for service from citizens who are not within walking distance of any route, or who desire that buses operating in their neighborhoods serve different destinations. Since transit resources are limited, it is unlikely that everyone will be accommodated to a satisfactory degree. Therefore, it is necessary to determine how to allocate the available resources to provide the best possible service. In designing service the following variables will be considered:

- Population density (current and projected)
- Employment density (current and projected)
- Service area characteristics (age, income, auto's per household)
- Enhancement of timed transfers
- Destinations:
    - **Employers:** Employers with 300 or more employees are large enough to warrant consideration for service. This standard applies to both individual employers and groups of employers in a concentrated area
    - **Hospitals/Nursing Homes:** These do not attract a large number of trips. These facilities do, however, often serve those who depend on transit.
    - **Colleges/Schools:** Students comprise a major segment of Transfort's ridership. For this reason, colleges and high schools have been included in the availability standard. Those institutions with an enrollment of at least 1,000 students warrant consideration of service.
    - **Shopping Centers:** Shopping trips constitute a major reason for transit travel. Shopping centers with more than 100,000 square feet of leased retail space are large enough to warrant consideration for Transfort service. Mixed-use retail and office complexes can also be included within this category.
    - **Social Service/ Governmental Centers**: Public agencies, government centers and community facilities attract some volume of traffic. While the nature and size of these facilities varies greatly, it can be generally stated that those serving at least 100 clients daily warrant public transit service.

5.1.1 Directness of Route

This standard addresses the need for system coordination, coherence and accessibility. Complicated circuitous routes and inordinate trip travel times discourage transit use.

- Routes shall be designed to be as direct as possible and to provide maximum accessibility to transit.

- Deviations from a direct path from end-to-end of the route shall account for no more than one-quarter of the end-to-end travel time of the route.

- For a specific deviation, the total additional travel time for all through passengers should not exceed three minutes for each rider boarding or alighting along the deviation.

In mathematical terms, this means that the quantity

$$\frac{P_T \times VTT}{P_D} < 3 \text{ minutes}$$

where:
P_T = through passengers
VTT = additional vehicle one-way travel time
P_D = passengers served by deviation

6. Vehicle Assignment Targets

Equipment shall be assigned to specific routes and trips according to the following guidelines. These guidelines may be modified if operational and scheduling needs require:

- Small 25'- 39' Bus: Appropriate for lower volume Residential routes where ridership does not require a standard bus, or for routes where specific operating concerns preclude use of standard buses.

- Standard 40' Transit Bus: The standard equipment for Residential, Commercial, and University. May also be used on Regional and Rapid services when necessary.

- Articulated 60' Bus: Appropriate for higher volume Rapid services.

Prior to each sign up, a vehicle assignment guide is prepared for the upcoming period. Lower mileage vehicles are normally assigned to higher mileage blocks to equalize the mileage on vehicles of the same age. Also, prior to each sign up, the average vehicle age is calculated for all routes and the trips they operated. The average vehicle age for the minority routes is compared to the overall system to determine if a disparate impact exists.

7. On Time Performance

Published schedules must provide the Transfort's customers with a reasonable guarantee that the scheduled service will operate, and will operate on time. The dependability of Transfort is important to people who typically plan trips around the availability of bus service. Moreover, riders associate a time penalty with unreliable bus service that reduces the attractiveness of public transportation.

There are several ways to measure Transfort's dependability. The first is whether service operates at all. Measures of actual versus scheduled service are expressed as the percentage of scheduled trips and percentage of pullouts that are actually made. For Transfort the missed trip standard is 98 percent. Therefore, only two trips in 100 can be missed to still meet the standard. Since it is easier to recover from a service disruption at the garage than it is out in the field, an even more stringent standard of 99 percent is appropriate for missed pullouts. This permits one missed trip out of 100.

On-time performance is also examined in terms of schedule adherence, which means the difference between scheduled time and the time the bus actually passes a particular location. The schedule adherence standard consists of two parts: 1) the definition of on time, and 2) the proportion of buses that operate within the on-time range. For purposes of establishing Transfort's on-time performance, "on-time" is established at zero minutes early to 5 minutes late. This allows the bus reasonable latitude for encountering general delays, without unduly inconveniencing the waiting patron. For most persons, a wait of up to five additional minutes would not be regarded as excessive. Buses should never be

early, for this would cause patrons to miss the bus entirely and subject many riders to an even longer wait for the next scheduled bus.

The standard for Transfort schedule adherence is established at 90% during peak service periods, and 95% during off-peak hours.

8. Distribution of Transit Amenities

Transfort maintains service standards for the distribution of various transit amenities, including: bus shelters, benches, bus schedules, route maps, trash receptacles and bike racks. The long-term objective is to provide a shelter at as many bus stops as possible. Priorities in the short and medium term should be given in proportion to the volume of usage by boarding passengers, especially schoolchildren, the elderly, passengers with disabilities and the degree of exposure to wind and driving rain.

Each of these amenities is described below. Stop level ridership analysis will be determined using a 100% survey of boardings and alightings. Ride check data can be used between surveys to determine if a stop needs to be upgraded to a shelter.

8.1 Bus Shelters

- The placement of shelters and the development of a priority location program will be based on the number of boarding and/or transferring passengers at a specific stop.
- Shelters shall be provided at all stops which serve 50 or more boarding and/or transferring passengers each day or which serve concentrations of elderly or persons that have a disability.
- Service information including route numbers and schedules that serve the stop should be displayed
- A bench will be provided with each shelter
- Shelters will have bike parking where historically more than 20 passengers have been left behind due to limited bike capacity on the bus, in one year's time.

8.2 Benches

- Benches will be provided at all stops that serve 25 or more boarding and/or transferring passengers each day
- A pad will be provided where right of way is available

8.3 Bus Schedules and Route Maps

- Bus Schedules will be provided at all transit center facilities in the Transfort system
- Bus Schedules will be available on each transit vehicle
- Route Maps are displayed at all transit shelters

8.4 Trash Receptacles

- Trash & Recycling receptacles will be placed at each transit center facility
- Trash receptacles will be placed at all bus shelters
- Trash receptacles can also be placed at locations where issues with litter have been identified.

9. Transit Security

Transfort will provide transit security measures to protect employees and the public against any act or threat of violence or personal harm.

- Participation in the Transit Watch public awareness outreach campaign
- Each transit vehicle will be equipped with on-board surveillance cameras
- All Transit Center facilities will be equipped with surveillance cameras
- Each transit vehicle will be equipped with an discreet emergency notification button
- Transit Centers shall merit additional security personnel if the crime statistics indicate there is a higher level of criminal activity in the transit centers reporting district. (To view updated criminal activity information on this topic visit: http://www.fcgov.com/police/crime-map.php)
- Policies regarding review of surveillance video ensure that surveillance is conducted without regard to race, color, or national origin