

# **Chicago Transit Authority Service Standards**



**Transit Operations Division  
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## EXECUTIVE SUMMARY

The CTA's mission is to deliver quality, affordable transit services that link people, jobs, and communities. The *Service Standards* lay out a framework for achieving our mission.

The Chicago Transit Authority's (CTA's) service area is vast – 262 square miles – and its resources are limited. The *Service Standards* document provides a framework for guiding decisions on which services will best serve our customers' varied travel needs while allowing the CTA to remain within its budgetary limits.

The service standards provide a framework for a consistent and fair evaluation of both existing and proposed services. Because markets, customer expectations and CTA's resources change over time, service standards are evolutionary by nature. CTA must be responsive to these changes in order to retain current customers and achieve and sustain ridership growth.

This document discusses the details of the standards and how they are used in decision-making at the CTA.

## THE STANDARDS

The dynamic nature of development and changing travel markets in the service area requires constant review of new service, service expansion, or service reduction options. CTA must be able to rationally evaluate service changes and make adjustments to service within the constraints of budget and equipment availability. The Service standards are guidelines for resource allocation decisions. Five key measures that have the greatest influence on service design are discussed: coverage, span of service, frequency of service, customer flow, and minimum productivity. Each standard is summarized below, and the minimum or maximum limits for each feature are cited.

CTA's *service coverage* policy determines the average customer walk to get to a CTA bus stop or rail station at certain times of the day. CTA's service coverage standard is to provide a maximum walk distance of ½ mile to the nearest route during most time periods.

*Span of service*, the hours and days a route operates, is based on a balance of market demand and service coverage. For key routes, services are offered seven days a week, generally a minimum of 16 hours. Support routes are market-driven.

*Service frequency* governs how long customers wait for service. The maximum interval between buses and trains is 30 minutes.

*Passenger flow* determines how crowded the vehicle will be when it arrives at the busiest location on a route. On the most crowded bus routes, an average of 60 customers per bus at

the busiest locations will be scheduled during peak periods. For rail services, an average of 90 customers per car will be the maximum planned load.

For bus service that runs every 30 minutes, the *minimum productivity* is 30 boarding passengers per hour. Services that do not meet the minimum become candidates for elimination.

The *Service Standards* document also contains guidelines for 1) stop spacing, 2) the distribution of facilities and customer amenities at rail stations and bus stops, 3) calculating service costs, and 4) the public participation process.

## **THE PROCESS**

In support of the annual budget process, the Annual Service Budget Proposal is developed that proposes major, moderate, and minor service changes, in accordance with CTA goals, for the next year. Service proposals can only be implemented if they comply with the budget.

*Minor* service changes are routine small changes to better align services with demand. These include adjustments to intervals between buses or trains and running time, span of service changes of ½ hour or less, and changes to bus stop locations.

*Moderate* changes are small changes to service with limited impact and modest costs. This change type includes special event services, reroutes of less than one mile, and route extensions of up to one mile.

*Major* service changes have a significant impact on customers and resources. These include route changes affecting more than 25% of a route's passengers, route miles or vehicle miles and changes requiring new facilities and/or capital expenditures of a cost level that requires board approval.

Service proposals are received, screened, and evaluated throughout the year. Minor service changes and most moderate changes are implemented throughout the year as schedules are revised. Major changes and moderate changes that require Board approval are subject to a semi-annual review where they are ranked in terms of financial performance against other proposals. These changes are presented to the Board twice per year.

## Chapter 1: Overview

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*A brief overview of the Chicago Transit Authority will illustrate the breadth of services provided and the importance of having a set of tools to guide service decisions.*

### CTA IN BRIEF

The Chicago Transit Authority (CTA) is the second largest transit system in the country, providing 450 million rides each year. The CTA service area consists of the City of Chicago and 38 surrounding suburbs, which have a total population of approximately 3.7 million persons. CTA provides approximately 1.5 million rides on an average weekday and plays an important part in keeping the regional economy running by providing about 560,000 work trips every weekday.

Because many Chicagoans live within  $\frac{1}{4}$  mile of CTA service, they have easy access to a service that provides extensive coverage to neighborhoods and many major attractions in the region. In fact, over half of all trips taken on CTA are for school, shopping, socializing or entertainment. Eighty percent of transit trips in the region are taken on CTA.

### LINK TO OUR MISSION

CTA's mission is to deliver quality, affordable transit services that link people, jobs, and communities. It reflects issues that are important to our customers, as expressed in the CTA's Customer Satisfaction Surveys. Service standards guide the planning and design of transit service in support of the CTA's mission.

Affordability, for our customers and for the CTA, is always a concern. We must provide services that are attractive enough to fill seats and meet productivity needs. At the same time, we must keep fares affordable. From a corporate standpoint, externally imposed funding constraints affect the amount of service that we provide.

### THE NEED FOR SERVICE STANDARDS

The major goal of the service standards is to provide a framework for a consistent and fair evaluation of both existing and proposed services.



- *Nearly 2,000 buses average 200,000 miles per day.*
- *139 routes cover 1,900 miles with over 12,000 bus stops.*
- *1,190 rail cars traverse 170,000 miles per day over 289 miles of track.*
- *7 rail lines include 12 branches and 142 stations.*

Because markets, customer expectations and CTA's resources change over time, service standards are evolutionary by nature. CTA must be responsive to these changes in order to retain current customers and achieve and sustain ridership growth.

The relationship between our service standards and our budget is dynamic. The level of service CTA provides to our customers has a direct effect on our operating and capital budgets. In turn, our service standards affect the amount of service that we put on the street. Furthermore, the amount of service must be provided within the bounds of limited financial resources.

Balancing customer expectations and budget constraints is a difficult challenge. CTA's existing services must be monitored and modified continually to match service levels to demand and respond to opportunities for new or improved services. Since the first *Service Standards* document was issued in 1990, it has formed the basis of the service adjustments the CTA has made in response to changing ridership trends.

The dynamic nature of development and changing travel markets in the service area requires constant review of new service, service expansion, or service reduction options. CTA must be able to rationally evaluate service changes and make adjustments to service within the constraints of budget and equipment availability.

This *Service Standards* document has been developed to provide a rational and consistent basis for the provision of CTA service by directing the technical analyses of service productivity and the evaluation of the merits of proposed services.

The remainder of the document is organized as follows:

- The goals and objectives of the *Service Standards*, in Chapter 2;
- A description of the service standards, in Chapter 3;
- The service change process, in Chapter 4;
- The methods for monitoring and reporting on service, in Chapter 5
- A description of the public participation process, in Chapter 6.

The Appendices provide more discussion on selected policies and standards presented in the body of the document.

### ***Service Standards:***

- *Offer a level of objectivity in decisions for distribution of CTA resources throughout our service area;*
- *Communicate the key attributes of CTA service policy to the public; and*
- *Describe the process for considering service changes.*

## Chapter 2: Goals and Objectives

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*The purpose of the Service Standards is to ensure that service meets customers' needs and that CTA service is provided in a cost-effective manner.*

The following fundamental goals and their objectives provide context for the service guidelines:

1. Ensure the design of effective, efficient, and equitable transit service.

### OBJECTIVES

- Design cost-effective transit service that supports both existing and emergent origin-destination patterns.
  - Enhance the key bus and rail networks to ensure critical regional mobility and to ensure that all neighborhoods have access to CTA service.
  - Apply a cost-effectiveness standard while recognizing the special needs of various customer groups.
  - Distribute services and customer amenities based on ridership, equity, and geographic balance.
2. Provide a uniform and consistent methodology for planning, designing, and evaluating transit services and proposals within applicable laws and regulations.

### OBJECTIVES

- Develop a consistent, regular process for improving service in those areas with demonstrated or potential demand.
- Address customer and community service needs and requests in a consistent, fair and thorough manner by better engaging local communities in the service planning and delivery process.
- Formulate a firm service evaluation process that addresses reviewing, proposing, receiving, screening, evaluating, recommending, and approving service changes.
- Evaluate and implement services consistent with Title VI and the Americans with Disabilities Act (ADA) requirements.

3. Provide mobility to our customers by responding to changing travel patterns and new market opportunities.

#### OBJECTIVES

- Encourage intermodal services and connections that maximize the trip-making options available to customers.
- Monitor the results of customer service and satisfaction surveys to support service changes that will improve CTA's overall performance.
- Develop sustainable service that supports the City's and region's development plans and initiatives.



## Chapter 3: Service Delivery Guidelines

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*The Service Delivery Guidelines section describes service design guidelines and procedures for service allocation, and customer amenities.*

### TYPES OF CTA SERVICE

The CTA operates an integrated transit system designed to provide both maximum access to the downtown and comprehensive local service throughout the service area.

The following types of CTA services are offered:

- Bus
- Rail (Rapid Transit)
- Paratransit Service
- Special Events Services
- Niche Market Service
- Flexible Services

#### **Bus**

The flat geography of Chicago has led to a grid arterial street pattern and bus service that follows this arterial street pattern with a network of long north-south and east-west routes. During most service periods, this grid configuration is the most efficient means of supplying convenient bus service between the diverse origins and destinations throughout our service area. It provides the maximum number of route combination choices for the customer. The network relies on being able to transfer between routes and services reliably and conveniently.

*Two-thirds of all CTA rides are taken on bus. Key bus routes carry almost half of all CTA customers and are the primary focus for service changes on the bus system.*

“Key” routes and “support” routes define the bus system. Key routes provide the backbone of CTA service. They include the most productive bus routes, plus additional routes to provide basic geographic coverage. Support routes are the remaining routes. They support the rail and key bus network by serving a variety of important specialized functions that enhance the quality of service and improve market share. Two-thirds of all CTA rides are taken on the bus system. Key bus routes provide nearly half (47%) of all CTA rides.

#### **Rail (Rapid Transit)**

Rail lines developed radially, aiming at the concentrated needs of the downtown. With its high speed, rail is the preferred mode of travel to the downtown, but also provides regional mobility.

The rail system consists of seven routes, with 12 branches, that operate over track on largely grade-separated private right-of-way. Rail offers



speedy service to persons generally needing to make longer trips in the service area. About one-third of all CTA rides are taken on rail. About 50% of rail passengers also use a bus for part of their journey.

### **Paratransit Services**

CTA's paratransit program was initiated in 1981. The CTA currently contracts with three carriers and many taxicab companies to provide door-to-door service for customers with disabilities and their companions. Special Services programs are highly regulated.

The Americans with Disabilities Act defines the standards for paratransit. Service coverage is defined by the ADA as within 3/4 mile of fixed route service. Span of service is the same as fixed route. Frequency is on demand.

### **Special Events Services**

CTA provides additional bus and/or rail service on regularly scheduled routes for the City's many special events to help reduce traffic congestion. Because these services are temporary, and have atypical operating characteristics, they may not follow regular service guidelines.

### **Niche Market Services**

Niche market services are developed in response to a demonstrated need for specialized transit services. These services are open to the public and can include modifications to existing bus routes or new routes for shift changes and other work purposes. Services can also be tailored for large employment centers, universities, high schools, medical centers, sports venues, industrial parks and other large traffic generators.

In some instances, CTA will enter into a financial partnership with organizations, such as museums, not-for-profit agencies, local governments and businesses to provide these niche market services. In these agreements, the partnering organization provides subsidy that, in combination with the projected customer revenue, meets variable cost for a particular service. (See *Appendix D: Niche Market Services* for more detail.)

### **Flexible Services**

Flexible service was proposed in the 1997 study<sup>1</sup> by Booz-Allen and Hamilton, a management-consulting firm, as a means to balance customer needs with productivity goals. The routes proposed by Booz-Allen for replacement with flexible service were poor performers, and

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<sup>1</sup>*Chicago Transit Authority Service Restructuring Proposal*, Booz-Allen and Hamilton, May 1997. This proposal provided the underlying analysis for the Service Restructuring adopted by the Board in July 1997 and the underlying basis for this work was the Service Standards document of 1990.

the consultants believed the service should be eliminated. However, doing so would abandon all service in certain neighborhoods. Booz-Allen recommended a compromise to service abandonment by suggesting implementation of non-traditional, or flexible service.

Flexible services, generally provided by smaller vehicles than standard buses, would supplement the key and support bus network and rail systems. CTA and a consultant are currently studying the viability of flexible service options in four demonstration areas. If found viable, service standards and policies for flexible services will be added to the *Service Standards* after the conclusion of the study.

## **SERVICE DESIGN MEASURES**

There are five key measures that influence fixed route service design:

- Service Coverage,
- Span of Service,
- Frequency of Service,
- Passenger Flow, and
- Minimum Productivity.

These measures enable CTA to determine appropriate levels of service to meet current demand, while maximizing use of equipment and manpower. Changes to any one of the guidelines affect the size and cost of services and the attractiveness of the service to existing and potential customers. Therefore each guideline is important and all are used in conjunction to make service decisions. *Appendix A: Bus and Rail Design Guidelines* has more detail about design considerations.

## **Service Coverage**

CTA's service coverage policy is to provide a maximum walk distance of ½ mile to transit service during peak periods within the statutory service area where CTA has franchise agreements in place. In the suburban Cook County portion of the CTA's service area, Pace and Metra services overlap that of CTA. As *Table 1* illustrates, the most intense service grid, when routes are closest together, is supported during weekday peak hours. As demand declines, the density of routes thins. Walk distance increases as demand lowers along the fringes of the service area and during low demand time periods.

**Table 1.**

<b>Guideline for Bus Grid System</b>		
TIME PERIOD	DISTANCE BETWEEN ROUTES	TYPICAL WALK DISTANCES
Weekday peak		
High Density	½ mile	¼ mile
Low Density	1 mile	½ mile
Weekday Midday/Evening	1 mile	½ mile
Saturday and Sunday/Holidays	1 mile	½ mile
Owl	2 miles	1 mile

This coverage policy is tied to the key route bus network. The 46 key routes are primarily spaced 1 mile apart, which means for the minimum 16-hour period that they operate, the typical walk distance through most of the network will be ½ mile.

Due to population and employment shifts in the service area, CTA regularly makes adjustments in its service to reflect changing markets. Population and employment densities for CTA's statutory service area are shown in *Exhibit A*, while *Exhibit B* illustrates the relationship between population and employment density and peak services offered by CTA, Pace and Metra. As this map shows, during the peak, with few exceptions, the City of Chicago is very well served. As densities decline, routes are spaced farther apart.

There are certain instances when the coverage policy cannot be rigidly followed. These instances include the following:

- Topographical and street network restrictions may cause some gaps in service.

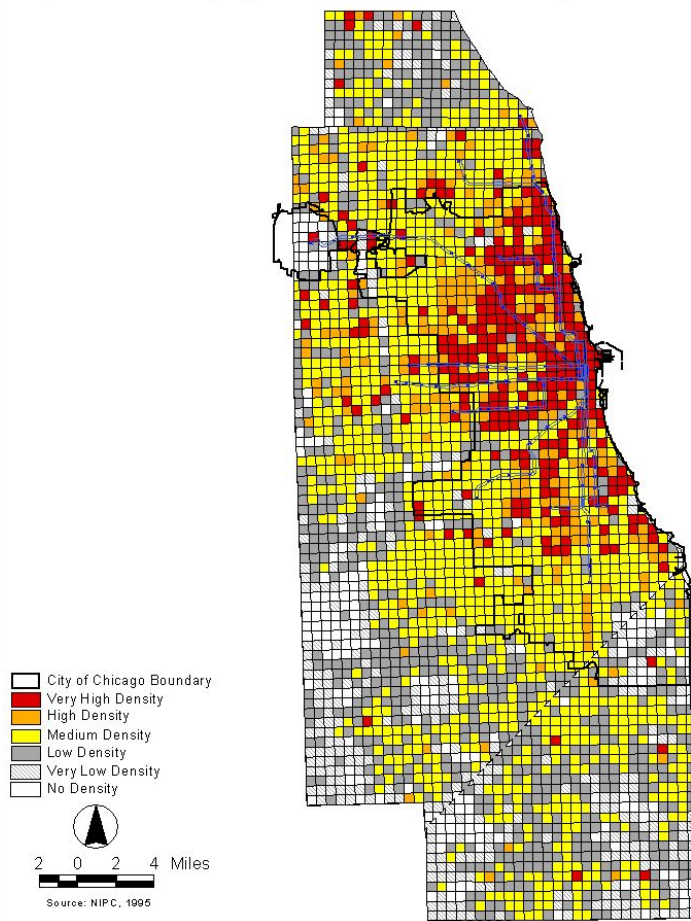
**Standard:** CTA's standard for service coverage is to provide a maximum walk of 1/2 mile during most periods.

- In suburban areas, bus coverage is shared with Pace Suburban Bus. In these areas, the combined CTA/Pace service provides coverage appropriate for the area's density and ridership demand.
- The specific alignment of routes is selected to serve *known* demand and more dense areas of the coverage area. In this case, ideal spacing can be lost.
- It may be infeasible to modify existing routes without hurting established and productive markets.

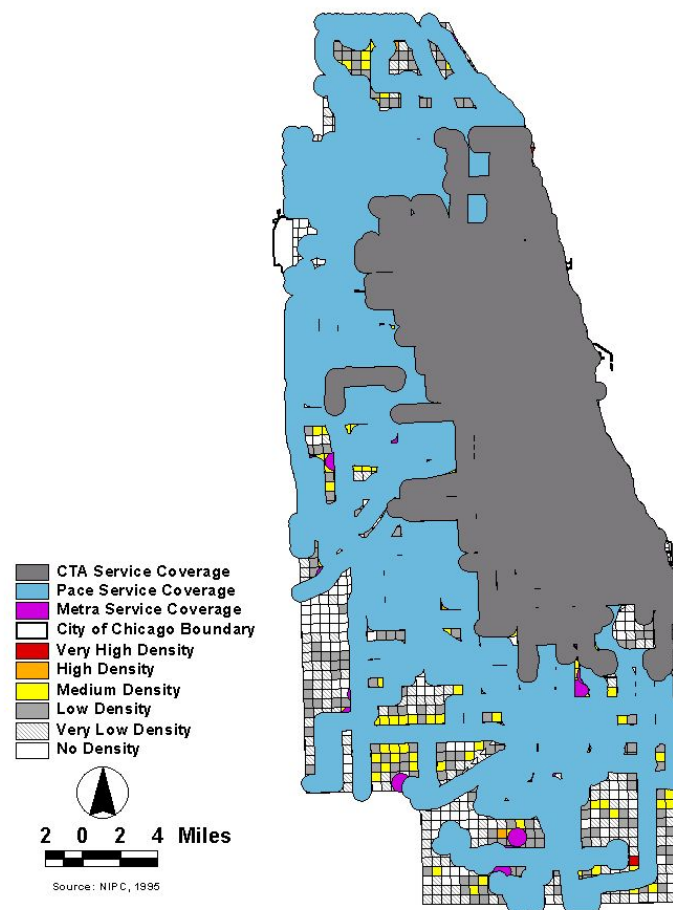
Routes are designed to operate as directly as possible. However, there are times when a route deviation is recommended to bring service closer to a major trip generator such as an employer. The decision to deviate a route must balance the effect on existing on-board customers with any potential gain in new customers. (See *Appendix A: Bus and Rail Design Guidelines*.)

Service coverage is a consideration for all customers, but especially for persons with disabilities. With both bus routes and rail stations, CTA works with the ADA Advisory Committee to determine routes and stations which will be designated accessible. All new rail stations are built as accessible stations and CTA follows all applicable requirements of the ADA and the Illinois Accessibility Code when renovating or rebuilding stations. It is CTA's policy that when a bus route is designated as accessible, all buses assigned to the route are accessible.

**Exhibit A -  
Population and Employment Densities - CTA Statutory Service Area**



**Exhibit B -  
Service Coverage - CTA Statutory Service Area**





## Span of Service

Span of service refers to the hours that service is provided and defines the minimum period of time that service will operate at any point in the system. This provides customers with the confidence that direct and connecting service will be provided during the span hours.

For the 46 key routes, services are offered every day, usually for at least 16 hours. Span of service for support routes is determined by demand. Key and support routes are illustrated in *Exhibit C* and *Exhibit D* and are listed in the *Tables 2* and *3* below.

Span of service standards govern when service will be operated by time of day and day of week based on passenger boardings for bus and passenger entries for rail stations. Data from automated fare collection (AFC) equipment is used. For existing bus routes, time periods during which the number of boardings per vehicle hour fall below an established minimum would be candidates for elimination in that period, as explained below in *Minimum productivity*.

**Standard:** For the 46 key routes, services are offered seven days a week, generally for a minimum of 16 hours. Support routes are market-driven and justified by demand.

**Table 2.**

CTA Key Routes			
3	King Drive	49	Western
4	Cottage Grove	49B	North Western
6	Jeffery	52A	South Kedzie
8	Halsted	53	Pulaski
9	Ashland	53A	South Pulaski
12	Roosevelt	54	Cicero
20	Madison	54B	South Cicero
21	Cermak	55	Garfield
22	Clark	60	Blue Island/26 <sup>th</sup>
28	Stony Island	62	Archer
29	State	63	63 <sup>rd</sup>
34	South Michigan	66	Chicago
35	35 <sup>th</sup>	67	67 <sup>th</sup> /69 <sup>th</sup> /71 <sup>st</sup>
36	Broadway	71	71 <sup>st</sup>
39	Pershing	72	North
47	47 <sup>th</sup>	74	Fullerton
		77	Belmont
		79	79 <sup>th</sup>
		80	Irving Park
		81	Lawrence
		82	Kimball/Homan
		84	Peterson
		85	Central
		87	87 <sup>th</sup>
		90	Harlem
		95E	93 <sup>rd</sup> /95 <sup>th</sup>
		95W	95 <sup>th</sup>
		119	119 <sup>th</sup>
		151	Sheridan
		155	Devon



**Table 3.**

<b>CTA Support Routes</b>			
1 Indiana/Hyde Park	56 Milwaukee	108 Halsted/95 <sup>th</sup>	
2 Hyde Park Express	56A North Milwaukee	111 Pullman 111 <sup>th</sup> /115	
3L King Drive Limited	57 Laramie	112 Vincennes/111 <sup>th</sup>	
N5 South Shore Night	59 59 <sup>th</sup> /61 <sup>st</sup>	120 N. Western/Wacker	
7 Harrison	62H Archer/Harlem	121 Union/Wacker	
8A South Halsted	63W West 63 <sup>rd</sup>	122 IL Center/N. Wester	
11 Lincoln	64 Foster-Canfield	123 IL Center/Union	
14 South Lake Shore	65 Grand	125 Water Tower	
17 Westchester	68 Northwest Highway	126 Jackson	
18 16 <sup>th</sup> /18 <sup>th</sup>	69 Cumberland/E. Riv	127 NW/Madison	
X21 Cermak Express	70 Division	129 W. Loop/So. Loop	
24 Wentworth	73 Armitage	135 Wilson/LaSalle	
25 West Cermak	75 74 <sup>th</sup> -75 <sup>th</sup>	136 Sheridan/LaSalle	
27 South Deering	76 Diversey	145 Wilson/Michigan	
30 South Chicago	78 Montrose	146 Marine Michigan	
33 Mag Mile Express	81W West Lawrence	147 Outer Drive	
37 Sedgwick/Ogden	85A North Central	152 Addison	
43 43 <sup>rd</sup>	86 Narragansett/Ridge	156 LaSalle	
44 Wallace-Racine	88 Higgins	157 Streeterville	
48 South Damen	90N North Harlem	165 W. 65 <sup>th</sup>	
49A South Western	91 Austin	169 69 <sup>th</sup> /UPS	
X49 Western Express	92 Foster	170 U of C Midway	
50 Damen	93 N. California	171 U of C Hyde Park	
51 51 <sup>st</sup>	94 S. California	172 U of C Kenwood	
52 Kedzie/California	96 Lunt	173 U of C Lakeview	
53AL S. Pulaski Limited	97 Skokie	201 Central/Sherman	
54A N. Cicero/Skokie	100 Jeffery Manor Exp.	202 Main/Emerson	
55A 55 <sup>th</sup> /Austin	103 West 103 <sup>rd</sup>	203 Ridge/Grant	
55N 55 <sup>th</sup> /Narragansett	106 East 103 <sup>rd</sup>	204 Dodge	
<b>Part Time / Seasonal Routes</b>			
10 Museum of Science	124 Navy Pier Exp.	130 Grant Park Treas.	
19 United Center Exp.	128 Soldier Field Exp.	154 Wrigley Field Exp.	

Span of service extensions are considered when:

- The hour immediately before the end of the current service or after the beginning of the current service shows productivity greater than the average system productivity (bus or rail) for that hour.
- New or revised employee shift changes or extension of business hours create a demand for service.

Span of service, when provided during the Owl period, is primarily market driven with consideration given to coverage and equitable service distribution. Owl service is provided to protect work trips in the strongest markets and to maintain some coverage in those markets at all times.

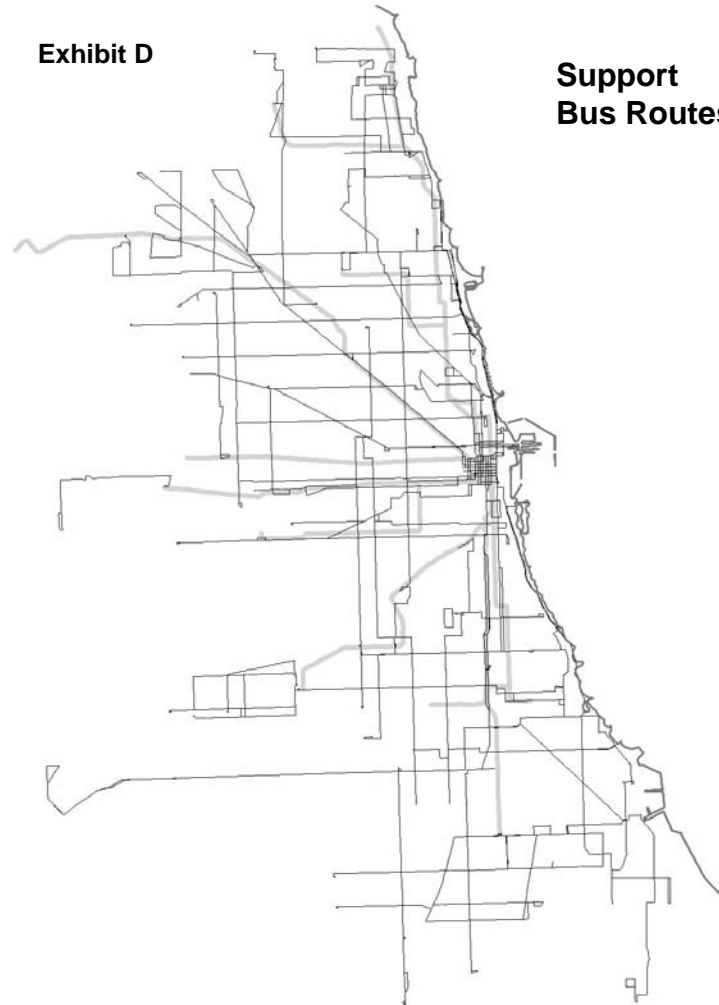
**Exhibit C**

**Key  
Bus Routes**



**Exhibit D**

**Support  
Bus Routes**



## **Frequency of Service**

Service frequency is established to provide a sufficient number of vehicles to accommodate passenger volume, at the most crowded location(s), during a given time period. On heavily traveled lines and routes, the frequency of service provided is a function of demand and peak period loading levels (described in passenger flow section).

This document establishes minimum levels of service that will dictate the frequency of service. This is intended to maintain basic mobility for the region at all times.

The longest policy interval for buses and for trains is 30 minutes. Because CTA service is interconnected, 30-minute service is considered a minimally usable level of service for bus and rail. This minimum provides service reliability for transferring passengers and is for the mainline portion of services. Where a rail line or bus route splits into branches, there is a possibility that due to low levels of demand, the branches may have service intervals of longer than 30 minutes.

**Standard:** The maximum interval for the mainline portion of bus and rail service is 30 minutes.

## **Passenger Flow**

Service frequency and passenger flow are very closely related. Above the minimum service levels, service frequency is determined by customer demand. Each bus and rail service is evaluated in terms of passenger flow, which is defined as the number of passengers on buses or rail cars, at the busiest location(s) along the route, called maximum load point(s). *Table 4* shows the relationship between passenger flow and service frequency for peak period service.

**Table 4.**

Mode	Passenger flow per ½ hr*	Interval between vehicles	Avg. # of passengers per bus/car	Train length
Bus	300-360	5 minutes	50-60	--
Rail	3840-4680	4.5 minutes	75-90	8
Rail	3510-4050	4 minutes	75-90	6

\*In one direction.

For the level of service illustrated in the table, the typical bus will have between 50 and 60 passengers on board, which includes 10 to 20 standees. On less well-utilized routes and in non-peak times, shorter intervals between buses are scheduled when justified by demand. For peak period rail services, the typical car will have between 75 and 90 persons on board or 35-50 people standing.

For articulated buses, the maximum scheduled passenger flow is 93 persons, accommodating up to 28 standees. At this level of passenger flow, service frequency for artics is about every five minutes.

Passenger flow standards will be revisited, as needed, particularly when new vehicles with different seating configurations are purchased.

Rail frequency guidelines determine appropriate service levels for a given level of demand (passengers per half-hour at the maximum load point). The level of service is expressed in terms of the number of cars per half-hour and the resultant trips per half-hour and interval for a given maximum train length. The Brown, Purple, and Green Lines operate at a maximum train length of six-cars, while the Yellow Line is a shuttle limited to two-car trains. All other routes operate eight-car trains in the peak.

The guidelines allow for a scheduled load of no more than 90 passengers per rail car.

*Table 5, Table 6 and Table 7* show service levels for bus for peak and off peak time periods.

**Standard:** A scheduled capacity of 60 passengers per bus at the busiest locations will be used for scheduling bus frequency during peak periods. For rail, a scheduled capacity of 90 passengers per car will be used.

Table 5.

Standard Buses Bus Service Levels for 60 Passenger Maximum Load (Peak Periods)		
Passenger flow per ½ hr	Service Interval (Minutes)	Passengers on Bus (Average for period)
≤ 30	30	< 30
30-60	20	20-40
60-90	15	30-45
90-125	12	35-50
125-165	10	40-55
165-240	7.5	40-60
240-300	6	45-60
300-360	5	50-60
> 360	< 5	60

Table 6.

Articulated Buses Bus Service Levels for 93 Passenger Maximum Load (Peak Periods)		
Passenger flow per ½ hr	Service Interval (Minutes)	Passengers on Bus (Average for period)
220-320	7.5	55-80
320-425	6	65-85
430-560	5	70-93
> 560	< 5	93

Table 7.

Bus Service Levels in Off-Peak Periods Standard and Articulated Buses			
	Passenger flow per hour	Service Interval (Minutes)	Passengers on Bus (Average)
Midday (9:00 a.m.- 3 p.m.), Saturday, and Sunday	≤ 40	30	< 20
	40-60	20	13-20
	60-100	15	15-25
	100-150	12	20-30
	150-210	10	25-35
	>210	< 10	30-40
Evening (Everyday between 7 p.m. and midnight)	≤ 40	30	< 20
	40-60	20	13-20
	60-100	15	15-25
	100-125	12	20-25
	>125	≤ 10	21-30
Owl (Everyday between midnight and 5 a.m.)	< 30	30	< 15
	30-60	20	10-20
	> 60	≤15	15-25

*Table 8* and *Table 9* illustrates the rail service levels for peak and off-peak time periods.

**CTA RAIL SYSTEM**  
**Table 8. Peak Period Service (Weekdays 6:00am-9:00am and 3:00pm-7:00pm)**

Every Half-Hour at Most Crowded Location			8-Car Trains		6-Car Trains		4-Car Trains		2-Car Trains	
Passengers	Cars	Avg. per Car	Trips	Interval	Trips	Interval	Trips	Interval	Trips	Interval
6,121 - 7,200	80	77 - 90	10.0	3.0						
5,401 - 6,120	68	79 - 90	8.5	3.5						
4,681 - 5,400	60	78 - 90	7.5	4.0						
4,591 - 5,400	60	77 - 90			10.0	3.0				
3,841 - 4,680	52	74 - 90	6.5	4.5						
4,051 - 4,590	51	79 - 90			8.5	3.5				
3,511 - 4,050	45	78 - 90			7.5	4.0				
3,521 - 3,840	48	73 - 80	6.0	5.0						
2,801 - 3,520	44	64 - 80	5.5	5.5						
2,881 - 3,510	39	74 - 90			6.5	4.5				
2,641 - 2,880	36	73 - 80			6.0	5.0				
2,521 - 2,800	40	63 - 70	5.0	6.0						
2,101 - 2,640	33	64 - 80			5.5	5.5				
2,381 - 2,520	36	66 - 70	4.5	6.5						
1,891 - 2,100	30	63 - 70			5.0	6.0				
1,921 - 2,380	34	57 - 70	4.3	7.0						
1,681 - 1,920	32	53 - 60	4.0	7.5			8.0	3.8		
1,751 - 1,890	27	65 - 70			4.5	6.5				
1,441 - 1,680	28	51 - 60	3.5	8.5			7.0	4.3		
1,441 - 1,750	25	58 - 70			4.2	7.0				
1,201 - 1,440	24	50 - 60	3.0	10.0						
1261 - 1440	24	52.5 - 60			4.0	7.5	6.0	5.0		
1081 - 1260	21	51.5 - 60			3.5	8.5				
961 - 1200	20	48.1 - 60					5.0	6.0		
901 - 1080	18	50.1 - 60			3.0	10.0				
841 - 960	16	52.6 - 60					4.0	7.5		
721 - 900	15	48.1 - 60			2.5	12.0				
721 - 840	14	51.5 - 60					3.5	8.6		
551 - 720	12	45.9 - 60			2.0	15.0	3.0	10.0		
441 - 550	10	44.1 - 55					2.5	12.0	5.0	6.0
331 - 440	8	41.4 - 55					2.0	15.0	4.0	7.5
276 - 330	6	46.0 - 55							3.0	10.0
201 - 275	5	40.2 - 55							2.5	12.0
151 - 200	4	37.8 - 50							2.0	15.0

Table 9.

**CTA RAIL SYSTEM**  
**Frequency of Service Guidelines**  
**Off-Peak Period Service**

Every Hour at Most Crowded Location			8-Car Trains		6-Car Trains		4-Car Trains		2-Car Trains	
<u>Passengers</u>	<u>Cars</u>	<u>Avg. per Car</u>	<u>Trips</u>	<u>Interval</u>	<u>Trips</u>	<u>Interval</u>	<u>Trips</u>	<u>Interval</u>	<u>Trips</u>	<u>Interval</u>
2,561 - 3,200	80	32 - 40	10.0	6.0						
2,401 - 2,560	64	38 - 40	8.0	7.5						
1,921 - 2,400	60	32 - 40	7.5	8.0	10.0	6.0	15.0	4.0		
1,601 - 1,920	48	33 - 40	6.0	10.0	8.0	7.5	12.0	5.0		
1,441 - 1,600	40	36 - 40	5.0	12.0			10.0	6.0		
1,281 - 1,440	36	36 - 40			6.0	10.0				
1,051 - 1,280	32	33 - 40	4.0	15.0			8.0	7.5		
841 - 1,050	30	28 - 35			5.0	12.0	7.5	8.0		
701 - 840	24	29 - 35			4.0	15.0	6.0	10.0	12.0	5.0
561 - 700	20	28 - 35					5.0	12.0	10.0	6.0
421 - 560	16	26 - 35					4.0	15.0	8.0	7.5
301 - 420	12	25 - 35							6.0	10.0
241 - 300	10	24 - 30							5.0	12.0
181 - 240	8	23 - 30							4.0	15.0
121 - 180	6	20 - 30							3.0	20.0
61 - 120	4	15 - 30							2.0	30.0
0 - 60	2	0 - 30							1.0	60.0

## **Minimum productivity**

CTA tracks and regularly reports ridership and productivity. For bus, ridership and productivity are reported by route for Weekday, Saturday and Sunday/holiday service. Bus route productivity is reported in terms of passengers boarding per bus hour. The standard is 30 boardings per bus hour when the service interval is 30 minutes. Services that do not meet the standard become candidates for elimination.

Rail station productivity is measured by line and by station. Station productivity is measured by looking at passenger entries per station and costs of operating the station. Line productivity is measured by comparing the total entries at all stations on the line and dividing by the total operating costs of the line.

In its reporting of productivity, staff will provide performance targets, such as productivity requirements for variable cost break-even, system average productivity and others based on the fare structure and cost structure. See *Appendix B: Calculating Service Costs* for more information.

Particular focus is given to the change in ridership and productivity over time for each service. Significant changes are further evaluated for each hour of service in order to identify opportunities to improve service and service productivity.

**Standard:** For bus, minimum productivity is 30 passengers boarding per bus hour, when the service interval is 30 minutes.



## **FACILITIES & CUSTOMER AMENITIES MEASURES**

### **Bus**

#### **Stop spacing**

Bus stops are normally located at major cross-street intersections and/or traffic generators. In most instances, stops will be about 1/8 mile apart (a standard Chicago block), depending on the neighborhood density. For limited-stop service, stops are made at widely spaced stops, with the local route making all stops.

#### **Amenities**

Bus customer shelters, benches, future electronic travel information signs and other features make CTA service more comfortable, safe and friendly. These amenities are distributed by factors that consider equity in distribution throughout the service area, the utility of the benefit to the user and site-related constraints. Additionally, high consideration is given to stops on key bus routes due to a generally higher level of demand.

Priority for amenities is given to stops that have:

- Large numbers of passengers who board at the location,
- Lengthy wait times between buses,
- High percentage of transfer passengers, and
- High percentage of seniors or disabled persons using it.

### **Rail**

#### **Investment considerations**

Unlike bus stops, stations are major facilities that have their own operating costs (customer assistants, security and maintenance) and are a considerable capital asset to build, maintain and, often, to rebuild.

Station changes are generally considered at the time of investment or reinvestment in the asset. In addition to the physical condition of the station, of great importance to a CTA investment decision is the future customer market for the station, relative to the size of the investment and the associated operating cost. Priority is given to stations where growth is expected to occur.

Investment decisions are based on:

- Passenger entries at that station,
- Station operating cost per passenger,
- Station spacing (described below),
- Land development around the station and
- Ridership on the line and branch that the station will serve.



### **Station spacing**

Station spacing is based on demand and also differs based on the purpose of the rail segment. Line-haul segments should have wider station spacing as competitive speeds are maintained, while collector and distributive segments may have closer station spacing to reduce walk times. Station spacing is considered both for the impact on passengers on trains that may be delayed, and on the impact of the new facility on the markets of adjacent stations.

See *Appendix A: Bus and Rail Design Guidelines* for more information.

### **Distribution of Revenue Equipment**

There are several factors to consider when distributing revenue equipment. When assigning or reallocating revenue equipment, the following criteria are used:

- **Accessibility** – Our first priority is to make all routes accessible. As older, non-accessible buses are retired and new accessible buses replace them, the fleet will eventually become 100% accessible. CTA's Planning and Development Department and ADA Compliance Officer are continuing to work with the ADA Advisory Committee to determine how to deploy new buses until the fleet is 100% accessible.
- **Air Conditioning** – The geographic allocation of air-conditioned buses is a high concern for our customers. When distributing buses, each garage should have roughly the same percentage of air-conditioned buses. Again, as older, non air-conditioned buses are replaced with new air-conditioned buses the fleet will eventually be 100% air-conditioned.
- **Average Age** – There is a wide range of older and newer buses in CTA's fleet. The average age at each garage should be roughly equal. As we acquire new buses our average fleet age will decrease.
- **Number of Bus Types at Each Garage** – In order to maximize maintenance performance and maintain adequate stockroom space for maintenance parts at each garage, the number of bus types at each garage should be kept to a maximum of four, optimally three.

## Chapter 4: Service Change Process

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*The CTA has a structured process for evaluating services and proposed changes that is tied to the annual budget, yet is responsive to small market changes throughout the year.*

As part of the on-going review of the performance of all routes and services and consideration of service change proposals, moderate and major service changes are to be brought to the Board for approval twice a year. Minor service changes are analyzed on an ongoing basis and can be implemented at each section pick (the occasion when schedules are updated and operators can pick their work).

This process includes the following features:

- Development of an Annual Service Budget Proposal,
- A transparent process for evaluating service changes,
- Accountability and flexibility in minor and major service change decisions, and
- A semi-annual comparative evaluation for major changes.



### ANNUAL SERVICE BUDGET PROPOSAL

In support of the annual budget process, Planning & Development develops an Annual Service Budget Proposal that identifies budget needs for each service change type for the next year's budget. This proposal is based on a review of the performance of all routes and the service change proposals received.

Once adopted, the Annual Service Change Budget guides the service changes that will be evaluated and implemented over the budget year. The Service Change Budget contains allotments for various classifications of service changes such as improvements, reductions and major, moderate, and minor service changes.

### SERVICE CHANGE PROCESS OVERVIEW

Requests for service changes and new services can be proposed by anyone – private citizens, elected officials, CTA employees, employers, etc. They can also be the result of ongoing monitoring and data collection.

The Bus and Rail Service Committees have an advisory role for service changes. These are internal committees that meet monthly, or as needed, to:

- Identify issues, opportunities and concerns,
- Ensure that proposed service changes can be operated reliably and safely, and
- Identify the actions that may be needed to implement changes.

All proposals must be reviewed and analyzed by Planning and Development staff. In order to efficiently screen, analyze, and evaluate the merits of service change proposals, the Service Change Committee was established within Planning and Development.

The process for evaluating and implementing service change proposals is dependent upon the magnitude of the change. *Table 10* defines the different types of service change. *Table 11* provides the timeline for the service change process.

**Table 10.**

Service Change Types		
TYPE	DEFINITION	EXAMPLES
<b>Minor</b>	Routine small changes to better align services with demand	<ul style="list-style-type: none"> <li>▪ Running time adjustments</li> <li>▪ Departure time adjustments</li> <li>▪ Span of service changes of ½ hour or less</li> <li>▪ Bus reroutes due to street or bridge detours</li> <li>▪ Service interval changes to match service levels with ridership</li> <li>▪ Train length changes to match service levels with ridership</li> <li>▪ Changes to bus stop locations</li> </ul>
<b>Moderate</b>	Small changes to routes or service configurations with limited impact & modest costs	<ul style="list-style-type: none"> <li>▪ Bus reroutes of less than 1 mile</li> <li>▪ Route extensions of 1 mile or less</li> <li>▪ Service changes to reflect changes in street patterns</li> </ul>
<b>Major</b>	Changes that will have significant impacts on customers and resources.	<ul style="list-style-type: none"> <li>▪ Route changes that affect more than 25% of a route's passenger route miles or vehicle miles</li> <li>▪ Changes requiring new facilities and/or capital expenditures at a cost level that requires Board approval</li> </ul>

Table 11.

<b>SERVICE CHANGE PROCESS</b>																		
Process Element	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>BUDGET PHASE (prior year)</b>																		
Proposal Intake & Screening																		
Service Change Proposal Submit																		
Budget/Exec Review & Modification																		
President's Approval																		
Board Approval																		
<b>MID-YEAR CHANGE PROGRAM</b>																		
Proposal Screening																		
Proposal Evaluation																		
Executive Review																		
Board Approval																		
Implementation																		
<b>YEAR-END CHANGE PROGRAM</b>																		
Proposal Screening																		
Proposal Evaluation																		
Executive Review																		
Board Approval																		
Implementation																		
<b>MINOR/MODERATE CHANGE PROGRAM</b>																		
Implementation																		

Proposal intake and service monitoring/ data collection are continuous throughout the year.

Minor and moderate changes are evaluated within Planning and Development through the Service Change Committee and can be implemented throughout the year, in accordance with section picks, except when Board approval is required. These are generally changes that have little or no impact on the budget or vehicle allocation.

Major service changes must undergo a Semi-annual Review and may be implemented only twice a year. These changes do impact the budget and vehicle requirements. Further, they require Board approval before they can be implemented.

## SCREENING

Once the Service Change Committee receives a proposal, it is screened to see if it warrants further study or rejection. This screening requires a brief analysis that includes the criteria listed in *Table 12*.

**Table 12.**

SCREENING CRITERIA
<ul style="list-style-type: none"> <li>• Urgency</li> <li>• Ease of implementation</li> <li>• Readiness for implementation</li> <li>• Level of interest (internal &amp; external)</li> <li>• Feasibility</li> <li>• Capital and/or land acquisition required</li> <li>• Costs involved (preliminary estimate)</li> </ul>

After the committee has determined if the proposal should proceed to the next level of analysis or be declined, the sponsor of the proposal is notified of the decision. This notification may come after approval to do full analysis for those projects that move forward.

## EVALUATION PROCESS

Approval for full analysis is required from senior management before proposals can proceed. Depending on the level of complexity, this higher level analysis generally takes up to two months to complete, but may extend to as much as 12 months for some improvements.

At this time, the committee also determines what type of service change the proposal is. If it is a minor or moderate change, the full

*For service improvements, the economic factor is cost per new passenger. For service reductions, it is savings per passenger lost.*

analysis and implementation can take place any time the resources permit. If it is a major change, it must be deferred until time for the Semi-annual Review (described below). Minor service changes, in effect, tweak the system and require a less rigorous analysis than moderate or major service changes.

Service analyses will be conducted using a consistent set of evaluation criteria (listed in *Table 13*), based on whether the change is a service improvement or service reduction. The economic factor for service improvements is cost per new passenger. For service reductions, it is savings relative to passengers lost.

**Table 13.**

<b>Evaluation Criteria</b>	
<i>Service Improvement</i>	<i>Service Reduction</i>
<b><u>Primary</u></b> <ul style="list-style-type: none"> <li>▪ Net cost per new passenger</li> <li>▪ Available budget</li> <li>▪ The rationale for the change</li> <li>▪ Existing and projected ridership</li> <li>▪ The number of new passengers</li> <li>▪ Existing and projected operating costs</li> <li>▪ Existing and projected fare revenue</li> <li>▪ Implications to service coverage</li> </ul>	<b><u>Primary</u></b> <ul style="list-style-type: none"> <li>▪ Net savings per passenger lost</li> <li>▪ The rationale for the change</li> <li>▪ Existing and projected ridership</li> <li>▪ Existing operating costs</li> <li>▪ Existing fare revenue</li> <li>▪ Implications to service coverage</li> </ul>
<b><u>Secondary</u></b> <ul style="list-style-type: none"> <li>▪ Market change, past, present and projected</li> <li>▪ The change in travel time for existing passengers</li> <li>▪ Key characteristics and demographics of the market</li> <li>▪ Contribution to the achievement of policy objectives</li> <li>▪ Other factors, as appropriate</li> </ul>	<b><u>Secondary</u></b> <ul style="list-style-type: none"> <li>▪ Market change, past, present and projected</li> <li>▪ The change in travel time for existing passengers</li> <li>▪ Key characteristics and demographics of the market</li> <li>▪ Contribution to the achievement of policy objectives</li> <li>▪ Impact on accessibility</li> <li>▪ Other factors, as appropriate</li> </ul>

Primary evaluation criteria are used to determine the economic viability and sustainability of service changes. The secondary criteria are included to provide a complete picture of the impacts of the change and to determine whether there are special circumstances related to the change. Staff evaluates each project using the worksheets in *Appendix C: Service Proposal Evaluation Worksheets*.

## SEMI-ANNUAL REVIEW

Major service changes are evaluated twice a year and may only be implemented two times each year, as the budget allows. For this type of change, the Semi-annual Review is required to determine how best to allocate CTA's limited resources for services.

The Semi-annual Review ranks major qualified service changes accumulated during a six to twelve month period. This ranking determines CTA's best investment, and is used as a starting point in decision-making for the following year's budget preparation.

Once approval of the full analysis is granted, Service Change Committee members divide the work according to their sections' responsibilities within the organization. The committee evaluates the proposal again at the conclusion of the analysis. Proposals are ranked against other proposals and compared to the productivity levels of existing services to determine which proposals should be implemented.

The Board will be provided with the recommended service changes and a ranked list of all other proposals evaluated with their relative rankings. These will be compared to the system average performance. Additionally, the Board will receive a description of the change, its justification, and cost and ridership implications.

### **Experimental Services**

Some service changes may be implemented as experimental services. Experimental services have a six-month evaluation period. During that time the CTA Board may cancel or adjust the service if it becomes apparent that the service is not meeting expectations. If the service is approved by the Board as a permanent route, it will be folded into CTA's regular budget. Status reports will be provided regularly to the CTA Board during the experimental period.



## **Chapter 5: Service Monitoring & Reporting**

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*Service monitoring and data collection are key elements of the service evaluation process. All services and routes are routinely reviewed to assess their performance and effectiveness.*

### **MONITORING & DATA COLLECTION**

The two broad categories of service monitoring activities are ridership monitoring and route/branch performance monitoring.

Ridership monitoring ensures that service frequency is appropriate to passenger demand. Data collection and analysis activities for this type of monitoring include point checks, ride checks, and analysis of AFC data to determine passengers boardings on bus and passenger entries at rail stations. Ridership monitoring permits quick response to demand changes.

Route/branch performance monitoring ensures the effectiveness of existing services with respect to their variable operating costs and usage. Data collection and analysis activities for performance monitoring include running time checks, point checks, bus productivity analysis, and analysis of AFC data.

### **REPORTING**

Planning and Development reports bus ridership and passenger entries at rail stations monthly. Bus routes are ranked using passengers per vehicle hour to highlight productivity. Passenger entries are used to rank performance of rail stations and branches. This ranking gauges the performance of individual routes, stations, and branches and the system as a whole and serves as an initial screening process for investigating service improvements and their costs.

These rankings will be reported to the Board quarterly. The report will include recommended strategies for meeting performance objectives and a summary of the results of service proposal evaluations conducted during the previous quarter.

## **Chapter 6: Public Participation Process**

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*The focus of the public participation process is an on-going, regular dialogue with communities, citizens and their elected officials regarding service needs. It is also intended to familiarize stakeholders with the CTA service planning process, and to engage them in the process of allocating finite resources in an equitable fashion.*

The public participation process is comprised of three integrated steps:

- Outreach to customers
- Outreach to the public, communities and elected officials
- Public meetings and hearings on major changes

### **OUTREACH TO CUSTOMERS**

Direct feedback from customers is an important part of the public participation process. Regular customer surveys measure levels of satisfaction on a variety of attributes, such as service reliability and cleanliness. Specific market and route-based surveys may also be conducted for a route or service undergoing a major change. Additionally, CTA will sometimes solicit “public comment”, involving phone calls and letters, as input for the evaluation process. Customer evaluations received by the CTA are valuable input to the route evaluation process.

The 1995, 1997, and 1999 Customer Satisfaction Surveys are examples of CTA’s commitment to learning more about our customers’ needs and concerns. These surveys provided invaluable information on perceptions of CTA, gave us some indication of customer loyalty, and told us where improvements were needed. The results of the Customer Satisfaction Surveys feed into decisions made about service changes and other resource allocations.

### **OUTREACH TO THE PUBLIC, COMMUNITIES AND ELECTED OFFICIALS**

Outreach efforts are intended to provide individuals and groups the opportunity to formally submit service requests to CTA for consideration. CTA is developing a series of documents to describe to the public the service planning process and elicit their proposals. These documents, as well as route performance reports, will be made available on the CTA website, [www.transitchicago.com](http://www.transitchicago.com).

## **PUBLIC MEETINGS AND HEARINGS**

Staff attends public meetings on request. These meetings are generally in conjunction with community groups, CAPS (Community Area Policing Strategy) units, or elected officials. Through these meetings, staff learns valuable information regarding changes in the community, customer suggestions, and customer needs. Feedback from these meetings is entered into the minutes of the next Service Change Committee meeting.

Public hearings are an important part of the planning process for major service changes. Improvements to service do not require public hearings. However, route changes that reduce more than 25% of a route's route miles, vehicle miles or ridership require a formal public hearing prior to final Board action. The Board considers the public comments prior to making a final determination on the proposed service reduction. Public hearing requirements are set by ordinance, which may be amended from time to time.

As a public service, customer input and feedback are vital to ensuring that CTA meets the needs of our customers.

## Appendix A: Bus and Rail Design Guidelines

The Authority has developed a set of design guidelines that are to be used for both ongoing evaluation and modification of existing bus and rail service, and in preliminary evaluation and design of proposed new services.

### **BUS SERVICE**

In designing routes and making changes to existing routes, a balance is attempted between ease of access and minimizing travel time. A goal is to control and minimize door-to-door travel time for all potential customers as much as possible. Transit travel time components for an individual trip consist of four components:

- 1) Walk access - time from leaving origin to boarding point. This is a function of distance from route, presence of obstacles, and stop spacing.
- 2) Wait for service - time at boarding point, ready to board, until bus departs with customer on board.
- 3) On-board - time traveling on bus, including delays. This is a function of distance, directness of service (lack of deviation), attainable speeds, presence or lack of congestion, number of intervening stops, and number of other passengers boarding/alighting.
- 4) Walk distribution - time from departing transit at alighting point to destination. This is a function of distance from route, presence of obstacles, and stop spacing.

For transfers, steps one through three are repeated. Research has shown that customers are most sensitive to waits for service and delays, followed by time walking to/from service and least sensitive to time on bus or train while moving. Demand for a service can be determined by using these factors plus fares along with coefficients. Most travel time reductions involve tradeoffs. Transit demand gains and losses from changes in travel time can be estimated using pivot-point forecasting methodologies.

### **Relationship Between Bus and Rail**

When planning new bus routes or restructuring existing bus routes, emphasis should be given to feeding rail stations as much as possible. In some cases, there may be apparent geographic overlap of service because a bus route provides local service, while rail service makes widely spaced stops. Additionally, density of demand may be high enough to warrant express bus service in the same corridor as rail. These express bus routes increase market penetration and help reduce overloading on the rail lines.

### **Duplication of Service**

It is the Authority's policy to operate only one local bus route on a major arterial street. However, it may be necessary to duplicate service in certain cases; 1) where routes merge to feed a rail station or a major traffic generator such as downtown, 2) when branches of routes share a common headway on the mainline portion of the route, and 3) when a route provides local service in the same corridor as rail service.

### **Walking Distance to Service**

As was mentioned under *Service Coverage*, it is the Authority's policy to have service available to almost all residents in CTA's service area within a ½ mile walking distance during the weekday peak period, ¼ mile in high density areas. These walking distances expand during the midday, evenings, weekends, and owl periods due to a reduction in the level of passenger demand at these times. Demand generators, such as residential concentrations, shopping centers, factories, and schools that are not within a ½ mile walking distance to a bus route and have streets capable of supporting bus service, will be considered for service if there is potential ridership.

### **Stop Spacing -- Local Service**

When locations of stops are being considered for a route, it is necessary to strike a balance among customer convenience, effect on average bus speed, and safety. A stop normally will be located at major cross-street intersections and/or major traffic generators. Other stops are spaced no more than 1,320 feet apart, except where pedestrian access is not provided such as on or under a viaduct. In most instances, stops will be about ⅛ mile apart (a standard Chicago block), depending on the neighborhood density. Because Chicago's bus stop system predominantly uses nearside stops, additional stops also should be nearside for consistency, unless a farside stop is more feasible due to the geometry of the intersection, improvement of traffic flow, or convenience to passengers. Spacing between adjacent stops and implications for service should be considered in requests to move bus stops.

### **Travel Time**

Routes should be designed to minimize on board time, while taking into account customers' overall travel time. Short routes maximize operating efficiency, by allowing a better match of service levels to demand along particular zones of a street, but may result in additional transfers. Long routes, where one-way running time exceeds 75 minutes, are subject to schedule adherence problems, but will reduce the need for customers to transfer.

### **Route Branch**

A branch is a new route that departs from the main route to serve a different market. It shares a common trunk segment; it may or may not have the same route name and number. To keep service intervals even, trunk line buses are generally alternated between branches. This results in the branch interval being twice that of the trunk. When a new branch is created by widening service intervals on a portion of the original route, costs are imposed on passengers on that portion due to a longer wait time for service. The costs to those passengers must be weighed against the gains for the passengers on the new branch in regard to improved access and on-board time.

### **Bus Route Deviation**

Routes will be designed to operate as directly as possible, using major arterial streets. A route deviation brings service closer to a trip generator, reducing walk access travel time for customers to/from the generator, and thus making the route desirable to new customers. The deviation, however, imposes a burden on customers on-board who are not boarding or alighting to/from the generator. Demand gains (new customers) must be weighed against the losses to the existing, through customers in considering a route deviation.

The total additional travel time for all through customers should not exceed five minutes for each rider boarding or alighting along the deviation. This criterion is expressed in the following formula (an example is included):

Benefit Gained			Must be Greater Than	Costs Imposed		
Existing and New Passengers Boarding/ Alighting on Deviation	X	Walk Time Saved	>	Passengers on Board Bus	X	Added Time on Bus Due to Deviation
10	X	5	>	20	X	2
50 passenger minutes			>	40 passenger minutes		

### **Express Services**

#### **Limited-stop**

A limited-stop service is service that stops only at widely spaced stops. It typically operates on the same street with local service, with the local route making all stops. The street must be wide enough to allow buses to pass each other; typically this is, at minimum, a four-lane street. The current service interval is usually shared between the two services. With limited-stop service, longer distance passengers gain with less on-board travel time but have longer service intervals (increased wait for service). Shorter distance customers do not have the same gain with reduction in on-board travel time and also suffer a loss due to longer service intervals. Some passengers may lose additional travel time by having to transfer between limited and local service. The benefits to longer distance customers must be weighed against the losses to shorter distance customers in determining whether or not to implement limited-stop service on a route. Such service generally works best on long crosstown routes that do not have a rail line in close proximity, and thus should generate the most increase in net customers.

#### **Zone Express**

Express service is considered where there is a substantial market between segments that are widely separated and travel time savings could be obtained by instituting an express portion to a route. Average vehicle loads should already be high at the beginning of the express portion. When an express service is created from portions of existing service, the express service will draw customers from the local portion and service intervals will be widened. The reduction in on-board travel time for the longer distance customers must be weighed against the increased wait for service for the local customers whose service intervals have been increased.

### **Facilities Characteristics - Bus**

Any roadway segment intended for operations with standard or articulated buses must meet minimum design standards for safe operations:

- minimum turning radius of 50 feet;
- street composition must adequately support a bus' weight;
- minimum lane width of 12 feet;
- no speed bumps; and,
- overhead clearance of 11 feet.

Use of local streets should be avoided, except as part of a terminal routing. Turnarounds and off-street stands should include a range of amenities such as operator washrooms, shelters, seating, landscaping and service information appropriate to customer and operational needs. Partnerships with the primary beneficiary of the service are encouraged for the supply and maintenance of these facilities. Refer to the *CTA Guidelines for Transit-Supportive Development* for facility requirements and characteristics.

## **RAIL STATIONS**

Stations are entry/exit points of the rail system. They also represent, unlike bus stops, a substantial capital investment in items such as station buildings, stairwells and elevators, platforms, fare equipment and other facilities. There are also operational costs involved including maintenance, and Customer Assistant and security guard coverage. Thus, it is important that careful consideration be given stations when balancing the needs for convenient access to and from the rail system with costs of operation, maintenance and construction of stations.

Operating costs for existing stations are largely independent of station passenger entries. All stations on a given route are typically open all hours that there is train service on that route. For these stations to be properly evaluated, passenger entries, data that is readily available through the Automated Fare Collection (AFC) system, will be employed. Stations are ranked by passenger entries by service day (weekday, Saturday or Sunday) and by service period (peak, base, evening, etc). Further, station use will also be tracked through time to reveal trends. In all these measures, stations will be compared to other stations on a system-wide basis and also compared to other stations on the same branch.

Stations in the top 10% of passenger entries or those experiencing significant increases in passenger entries will be examined to see if they have the capacity to handle current and future flows and, if needed, possible solutions to any identified problems will be proposed. Stations in the lowest 10% of passenger entries or those experiencing significant decreases in passenger entries will also be examined to see if any possible actions can be taken to increase entries and exits, or reverse the decline. When several stations on the same branch are in the same group (e.g. top or bottom 10%), solutions will be investigated on a branch or route basis.

### **Capital Investment**

Any existing station or secondary station entrance in need of capital investment, any proposed station, or any closed station proposed to be re-opened, must be evaluated to determine if the capital investment required to build or open it will provide commensurate benefits.

The types of stations and station entrances range as follows:

- Opening/closing part-time stations or station entrances that are closed/opened when train service is operating at the station. Cost/savings are typically very modest. The most common changes are changes in Customer Assistant or guard coverage or addition of high barrier entrance turnstile.
- Reopening of closed stations or station entrances where facility is largely in place. Typically these require clean-up, some physical improvement, and installation of fare equipment. For a re-opened station, Customer Assistant and guard coverage may be required. Secondary station entrances can often share coverage with primary entrance.
- Constructing a new or rebuilt station on an existing line. Typical construction needs are to the extent that elevators or ramps are required. Capital costs can range to \$10 million or more. Capital decisions apply to new or previous stations and to existing open stations in need of reconstruction.

CTA strives to find a balance for the following criteria used to consider station and station entrance openings, re-openings and closings:

- Ridership - Potential passenger use is still, of course, one of the primary concerns. In the case of an existing station, actual passenger entries will be used along with trends. With reopening closed stations, previous passenger entries at that station along with trends for the relevant route or branch will be employed. New stations will use potential passenger entries and trends for the branch the station will be located on.
- Physical Conditions - If the station is an existing or closed station, are there any physical conditions that limit the usefulness of the station and can they be remedied, such as curves that limit the line of sight of operators?
- Station Spacing - Ideally, most rail stations are located about one-half mile apart. Stations may be further apart or closer together based on demand, density, and connections to the bus system. Any capital investment station must be evaluated as to how it fits in to the surrounding stations, answering the question, is the station spacing appropriate for the demand?
- Alternative Service - When considering capital investment in an existing or potential station, a prudent question to ask is if there are other CTA services, most likely bus routes, available. Do these services provide a reasonable alternative to a station? Or do they provide an important connection for the rail system? Will customers be diverted from existing CTA services by a new station at this location?
- Community Role - Every station performs some sort of community role and any potential station can also play a role in the community. The question for each capital investment station is to what degree does a station play in its community? It might be one of the few links to the wider system for a community. It also might play a role as a focus of a community, or it might be isolated from the surrounding area, in which case it plays a very minor role.



### **Span of Service Adjustments**

To analyze reopening an entire rail line or branch at times during which there is no service, ridership analyses similar to those above would be completed. Passenger entry trends for the time period most similar to that being considered for service would be analyzed. For example, for expanded Saturday service, weekday off-peak entries may be analyzed, and for Sundays, Saturday entries may be analyzed. These would be considered in relation to the rest of the system to allow a forecast to be made of the revenue that would be generated by the additional span of service. Analysis of bus boardings within the corridor may also be considered. These would cover the time period during which increased rail service was being analyzed. These analyses would be used to determine a revenue forecast for the expanded service. This figure would be compared against the variable operating costs of such service.

Additional analysis would be made of other issues, including community needs and support for the rail service. Operational considerations such as maintenance work that is being completed during periods when the line is closed would be taken in account.

### **Customer Assistant Coverage**

Customer Assistant (CA) coverage is independent of station evaluation. The purpose of Customer Assistants is to assist passengers in using the CTA system, most often with the fare collection equipment. For instance, to allow reduced fare passengers through turnstiles, a Customer Assistant must insert a card in the turnstile, so it will accept a reduced fare.

At other times, stations are staffed with security guards, whose primary purpose is to protect passengers and fare equipment.

To provide coverage fairly and equitably, CA coverage must be based on a number of factors, including customer entering volumes and characteristics, geographic distribution and any operational considerations. Thus, most outlying stations would need Customer Assistant coverage during the morning rush when the rate of passenger entries is the greatest. O'Hare and Midway stations might need longer coverage due to many first-time or infrequent passengers. A station near a school would need coverage when many students (with reduced fares) enter the station.

## Appendix B: Calculating Service Costs

An important component of service planning is factoring in the financial impacts of particular service proposals. An important question to answer will always be "how much will it cost?"

In determining the costs for most service proposals, Planning will calculate the estimated direct operational costs, sometimes called variable costs. For bus this includes operator pay, fuel and light maintenance supplies, which includes wear-and-tear on the tires and fluid replacement. For rail, this includes operator pay, power, light maintenance, and supplies.

If a service proposal is so large that it may impact other company functions, for example, the maintenance and administration of a bus garage, or the closing of a whole rail branch, then clearly a variable cost model does not suffice. Proposals such as those need to be considered in a different context than the typical Planning cost analysis. This section's purpose is to discuss how Planning will analyze most typical service proposals, not proposals that impact garage or terminal operations.

### VARIABLE COST ESTIMATES

For both bus and rail, a simple variable cost model is used to estimate the overall operational cost impacts of a service proposal. A cost model is an estimating technique that uses past expenditures for particular functions and divides them based on cost drivers, for example pay hours, platform hours or vehicle mileage.

In most cases, the labor rate will be applied to the labor pay hours for a proposed service change. If pay hours are not available, platform hours (also called bus or train hours) can be used as a surrogate. The fuel, power and maintenance supply costs are all applied to the vehicle miles of the service proposal, since those costs are more likely to be impacted by distance traveled and not time traveled.

### OPERATIONAL COSTS

In analyzing a service proposal, all aspects of the proposal will be studied to insure that there are no other costs that should be included in addition to the variable costs. For example, will a new bus service require an additional supervisor, or will a particular rail proposal require changes to the staffing of the Customer Assistants? Other administrative costs, for instance marketing, signage and community outreach, need to be itemized for the proposal, too. These additional costs need to be added to the variable cost estimate to produce the overall operational cost estimate of the service proposal.

Special consideration is given to the costs associated with operating rail stations. Customer Assistants and janitorial services are direct operational costs, although they are only indirectly related to the train services being operated. For service changes that require alterations to station staffing, both CA and janitorial pay rates can be applied to the proposal. For estimates of the cost of stations, CA and station maintenance budgets can be calculated by the "station days" to provide an estimate as to the daily cost of a station entrance.

Once the operational costs for a service proposal are estimated, Planning can include potential revenue impacts and can assess whether the proposal fits particular budgetary, service or

corporate goals. This process is typically what Planning will use in preparing its recommendations to the Board, and variable costs will primarily be those presented in all Board reports and other supporting materials.

### **FULL COST MODELING**

At times, Planning will be asked to perform some form of estimation of the full costs. Typically, full cost accounting may be needed to get an idea of what the budgetary impacts of a large service proposal will be before a more thorough analysis is performed. Occasionally, the estimation is needed to perform more "academic" research, like peer comparative analysis or full cost recovery or subsidy analysis.

Full costs include the variable costs, plus fixed costs like the less-direct operational costs, for example supervision, heavy maintenance, legal claims and the wages for other operational staff, like, rail switchmen or garage maintenance laborers. Full costs also include administrative overhead. None of those resources are devoted to any one route or service. In calculating the full costs of a service, fixed costs are prorated across the system.

For example, assume that the previous year's budget had Bus Heavy Maintenance costing \$35 million. Since maintenance costs are more likely to be related to the mileage traveled by each bus versus the time, vehicle mileage is used as the cost driver. Continuing the example, suppose that in that year there were 70 million bus miles traveled by the entire bus fleet. Therefore, each vehicle mile costs ( $\$35\text{m}/\$70\text{m}$ ) \$0.50 in heavy maintenance costs. Therefore, if a particular service requires 500,000 annual vehicle miles, its total annual cost for heavy maintenance would be \$250,000. This process can be calculated for other budget items, like supervision or administration.

It is important to note that this is an estimation technique. In the above example, while heavy maintenance costs are related to the vehicle mileage, in reality they do not drive the overall maintenance cost structure for the bus system. Adding a new service of 500,000 vehicle miles will not increase the Bus Heavy Maintenance budget by exactly \$250,000, if anything at all. To answer that question, a more thorough analysis of the possible impacts is needed, for example, how much equipment is required and what are the staffing implications.

To reiterate, the full cost model will only be used for general statements or analyses about the costs of a service. They will not be used to make accurate predictions about the cost savings or additions resulting from a service change. Full cost estimates will not be used in most Board reports and Board recommendations for service proposals.

## Appendix C: Service Proposal Evaluation Worksheets

Following this page are two evaluation worksheets. One is for service improvements and the second is for service reductions. These worksheets are intended to assist Planning and Development staff in evaluating service proposals that merit detailed evaluation and assist in preparation of a recommendation report.

Two types of information are sought:

1. Evaluation Information - is that which directly affects the recommended decision. This includes expected customer and fare revenue gains or losses, capital/operating cost increases or savings, gains or losses in benefit (e.g. travel time) to customers, and other factors.
2. Supporting Information - is that which helps in understanding the data developed for evaluation.

The evaluation worksheets are designed to assist in presenting the needed data for larger scaled proposals, those that affect many customers, or have substantial cost implications. For smaller proposals, the evaluation will be scaled back to those items that are appropriate for the decision.

Service <i>Improvement</i> Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
RIDERSHIP			
Existing Ridership	Ridership trends.		
Projected Ridership	Projected ridership in the market of the proposed improvement with and without improvement.		
Projected New Ridership	Projected ridership due to improvement new to CTA after accounting for trips shifted from other services.		
Supporting Factors	Macro-scaled: <ul style="list-style-type: none"><li>▪ Growth in population and employment in market to be served.</li><li>▪ Indicators of recent change (e.g. New or rehabilitated housing units, new/more active retail, new employment)</li></ul>		
	Micro-scaled: <ul style="list-style-type: none"><li>▪ Participation in ridership improvement programs</li><li>▪ Improvement in travel time</li><li>▪ Improvement in convenience</li><li>▪ Improvement in reliability</li></ul>		
REVENUES			
Existing Fare Revenue	Existing revenue.		
Projected Fare Revenues	<ul style="list-style-type: none"><li>▪ Projected New Ridership times average revenue per unlinked trip. (Normal use.)</li><li>▪ Projected New Ridership times other fare estimate. (Exception)</li></ul>		

Service Improvement Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
Operating Subsidy (if any)	As negotiated.		
<b>OPERATING COSTS</b>			
Variable Operating Costs	Existing costs.		
Projected Variable Operating Costs	<ul style="list-style-type: none"> <li>Costs Associated with Improvement</li> </ul>		
Supporting Factors	<ul style="list-style-type: none"> <li>Buses or trains required</li> <li>Bus or train hours of service added</li> <li>Bus or car miles of service</li> <li>Direct station costs</li> <li>Length of added service</li> <li>Other cost components</li> <li>Variable Cost Rates for each element</li> </ul>		
<b>CAPITAL COSTS</b>			
Associated Capital Cost	<ul style="list-style-type: none"> <li>Physical improvements directly associated with service change (e.g. New station)</li> <li>Amortized over useful life</li> <li>Deductions for 3rd party contributions</li> <li>Net of contributed capital from non-transit source</li> </ul>		
<b>TOTAL COST</b>	Operating plus Annual Capital		
<b>CUSTOMER IMPACT</b>			

Service Improvement Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
Existing Customers	Number of rides impacted (improved and worsened) factors: - walk time - wait time - riding time - transfers - other		
New Customers	<ul style="list-style-type: none"> <li>Number of new rides</li> <li>Same factors</li> </ul>		
Weighted Gain or Loss	$\text{Gain (Loss)} = [(\text{number of rides improved}) \times (\text{value of improved factors})] - [(\text{number of rides worsened}) \times (\text{value of factors})]$		
<b>OTHER FACTORS</b>			
Rational for Change	<ul style="list-style-type: none"> <li>Compatibility with CTA objectives</li> <li>Compatibility with Municipal Objectives</li> </ul>		
Equity	<ul style="list-style-type: none"> <li>Enhances ADA goals</li> <li>Enhances Title VI goals</li> </ul>		
Customer Expectations	Enhances goals for On-Time, Clean, Safe and Friendly		
Customer Flow Standard	Meets standard for service level for day/period		
Productivity	<ul style="list-style-type: none"> <li>Will meet minimum productivity standard.</li> <li>Meets average productivity for day type.</li> </ul>		
Budget Available			

<b>Service Improvement Evaluation Worksheet</b>			
<b>Factor</b>	<b>Discussion</b>	<b>Supportive Value</b>	<b>Evaluation Value</b>
<b>SUMMARY</b>			
<b>Total Cost</b>	Operating plus Annual Capital		
<b>Projected New Fare Revenues</b>	From above		
<b>Subsidy</b>	Total Cost less Projected New Revenues		
<b>New Ridership</b>	From above		
<b>Cost Per New Ride</b>	Total cost divided by new ridership		
<b>Subsidy Per New Ride</b>	Subsidy divided by New Ridership		
<b>Number of Customers Required to Recover Costs</b>	Added Total Cost divided by Average Fare		



Service Reduction Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
<b>RIDERSHIP</b>			
Existing Ridership	Existing ridership on services considered for reduction.		
Projected Lost Ridership	Projected ridership loss to CTA due to reduction after accounting for trips shifted to other services.		
Supporting Factors	<ul style="list-style-type: none"> <li>▪ Increase in travel time</li> <li>▪ Worsening of convenience</li> <li>▪ Worsening in reliability</li> <li>▪ Ridership Trends</li> <li>▪ Future projections</li> </ul>		
<b>REVENUES</b>			
Fare Revenue Losses	Projected Lost Ridership times average revenue per unlinked trip. (Normal use.) Projected Lost Ridership times other fare estimate. (Exception)		
<b>OPERATING COSTS</b>			
Variable Operating Costs Saved	Costs Savings Associated with Reduction		
Supporting Factors	<ul style="list-style-type: none"> <li>▪ Buses or trains saved</li> <li>▪ Bus or train hours of service reduced</li> <li>▪ Bus or car miles of service reduced</li> <li>▪ Direct station costs saved</li> <li>▪ Length of reduced service</li> <li>▪ Other cost components</li> <li>▪ Variable Cost Rates for each element</li> </ul>		

Service Reduction Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
<b>CAPITAL COST</b>			
Associated Capital Cost Savings	Avoided physical improvements directly associated with service change		
Annual Capital Savings	Amortized over useful life		
<b>TOTAL COST</b>	Operating plus Annual Capital		
<b>CUSTOMER IMPACT</b>			
Existing Customers	Number of rides impacted (improved and worsened) Factors: - walk time - wait time - riding time - transfers - other		
Weighted Gain or Loss	$\text{Gain (Loss)} = [(\text{number of rides improved}) \times (\text{value of improved factors})] - [(\text{number of rides worsened}) \times (\text{value of factors})]$		
<b>OTHER FACTORS</b>			
Rational for Change	<ul style="list-style-type: none"> <li>Compatibility with CTA objectives</li> <li>Compatibility with Municipal Objectives</li> </ul>		
Equity	<ul style="list-style-type: none"> <li>Minimizes impact on ADA goals</li> <li>Minimizes impact Title VI goals</li> </ul>		
Customer Expectations	Minimizes impact goals for: On-Time, Clean, Safe and Friendly		

Service Reduction Evaluation Worksheet			
Factor	Discussion	Supportive Value	Evaluation Value
Ridership Trend	Negative ridership trend for day-type		
Passenger Flow	Below minimum passenger flow for service level for day & period		
Productivity	Below average productivity for day-type		
SUMMARY			
<b>Savings Goal</b>			
<b>Net Savings</b>	Total Cost less Revenues		
<b>Lost Ridership</b>			
<b>Net Savings per Rider Lost</b>	Net Cost divided by New Ridership		

## Appendix D: Niche Market Services

### INTRODUCTION

CTA sees a number of benefits in operating more niche market services. These services are a way of entering new markets and strengthening CTA's ties to the business, residential, and institutional communities. Niche market service also helps CTA strengthen its existing bus route network. It thus helps CTA fulfill its larger mission by providing greater mobility and better access to schools, work places, residential neighborhoods, and other major travel demand generators, including tourist attractions. This service would improve the quality of transit in CTA's service area.

### DESCRIPTION

A niche market service is service that is open to the public but, targeted to a specific group with common characteristics; such as an employer, residential area, institution or other identifiable travel demand generator. The service is designed with a guaranteed operating cost recovery that is generally negotiated with a sponsor. Certain incentives such as the Transit Benefit Program, U-Pass, subscription services and direct subsidy can be coordinated to support and sustain the niche service.

### PROGRAM MISSION

- Serve new markets and increase ridership base.
- Promote CTA as the primary transportation option in the region.
- Establish business relationships with private and not-for-profit businesses and institutions.

### NICHE SERVICE GOALS

#### 1. Expand markets and ridership

- Seek services that have growth potential, especially with new customers.
- Seek services that support mainline transit services.
- Seek services in markets not already served or only indirectly served by transit.

#### 2. Seek a positive financial position.

- Cover direct operating costs via a combination of farebox revenues or non-RTA subsidy.

- Ensure cost recovery is compatible with CTA's system wide average variable cost recovery.
- Encourage employers to join the RTA/CTA Transit Benefit Program and universities and colleges to join the U-Pass program.

### 3. Ensure that the service is justifiable as a publicly operated service.

- Recover a higher percentage of variable operating costs on services designed as "premium" services for corporations.
- Ensure that the anticipated ridership from the niche service change should be worth the public involvement, for instance, the Federal capital expenditures for buses.
- Ensure that existing services are not negatively impacted by new niche service.

## TYPES

There are several types of niche market services that CTA is proposing to operate.

- **Employer services:** new routes or modifications to existing routes for an employer's shift changes and other work purposes.
- **Employment Center Services** - Special adjustments to current bus service or additional service for a group of employers' shift changes outside the downtown area. A particular priority is targeted for low income workers and services tailored for large employment centers, such as industrial parks and medical centers.
- **Downtown Services** - Special additional service to existing routes or new routes implemented from Metra and CTA commuter rail stations to employer sites in the downtown area. Downtown shuttles could be offered with lower fares under subsidy arrangements.
- **Institutional Services** - New routes or modifications to existing routes or new routes for students and employees of institutions including universities and medical centers. Institutional services include special campus and/or shuttle services planned around institutional campuses.
- **Premium Services** - Premium bus service with higher fare charged. Compared to regular, fixed-route service; premium services would be more direct, personalized, faster, with limited stops, guaranteed seating, and possibly coach-type buses. Premium service would generally operate only in the peak periods. This service is attractive

because of its “point to point” service, its single seat rides and its higher comfort buses.

- **Subscription Services** - Bus service provided on a regularly scheduled basis with revenues guaranteed by subscribers. The employer who benefits from the route may sponsor the service.

## **PROCESS OF RECEIVING AND CHOOSING REQUESTS FOR NICHE SERVICES**

1. *Receive requests* from employers, employment centers, agencies, or institutions through direct phone calls, letters, or contacts from the Transit Benefit Program.
2. *Rank requests* based on ease of implementation, urgency, readiness for implementation, level of interest (internal and external), feasibility, capital and/or land acquisition requirements, predicted productivity compared with other CTA routes, and estimated costs involved (see Service Policy and Standards for details).
3. *Choose requests for implementation* based on predicted productivity, compliance with CTA goals, and whether the change is a time-sensitive opportunity.

## **EXAMPLES**

CTA would operate niche services for several types of institutions and employers. The examples below describe how CTA would operate different examples of niche services.

### *Example 1: University Campus Service*

- Provide mobility within campus and major destinations; including CTA bus and rail services in order to provide seamless service.
- Increase CTA ridership base in the market.
- Ask the universities to join the U-Pass program if they are not already members. If a university requests a service improvement, U-Pass could be used to subsidize the request.

### *Example 2: Major Employers*

- Serve employees, including persons transitioning from welfare, more conveniently at times when CTA service is inadequate, inconvenient, and/or too distant, such as in the late evenings.

- Have employer join Transit Benefit Program to guarantee larger ridership base. The program could also be used to subsidize the request for the service improvement.
- Perform social good by providing better access to employees' jobs and increase ridership base in the market.

#### *Example 3: Premium Service*

- Serve residents with faster, more direct, and more personalized service typically in the peak periods with higher fares. The service would offer single seat rides.
- Attract new passengers who are sensitive to time, convenience, and comfort.

### **PRICING SUBSIDIZED BUS SERVICES**

When trying to establish a particular niche service, CTA seeks to at least cover direct operating costs via a combination of farebox revenues or non-RTA subsidy. Often CTA will enter into contractual agreement with third parties, such as museums, non-profit institutions, local governments, and businesses. In these agreements, the third party will provide full or partial revenue guarantee to a particular bus service. These services will be open to the public.

In a subsidized service, so long as the service remains open to the general public, CTA is not required to charge the charter rate. In that case, CTA can design its contracts to achieve performance goals based on market development, social equity and revenue-enhancement goals of the CTA.

#### **In pricing these services:**

1. Staff will calculate the operational costs of the service, based on the service design and the variable cost model that includes operator pay, fuel, light maintenance parts, and ongoing costs directly related to the service such as supervision or marketing.
2. Customer revenues plus subsidy should cover the routes' variable costs as determined above. The average bus variable cost recovery is calculated for the entire bus system and is used as a benchmark for niche services.
3. All niche services will be experimental initially to ensure that they meet CTA goals. Services will be analyzed consistent with fixed-route service standards.

## **IMPLEMENTATION ISSUES**

Niche services may be implemented as six-month experiments. The new service will be monitored and evaluated after implementation in order to determine if the service meets ridership and productivity expectations. Special vehicles or special paint or design on vehicles for service may require an additional charge to the person requesting the service. An agreement between CTA and the requesting entity outlines the necessary operating and subsidy arrangements. New niche service proposals and contractual agreements must be reviewed and approved by the CTA Transit Board.



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