

## EXHIBIT “A”

PITTSBURGH REGIONAL TRANSIT

# Transit Service Standards

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## Executive Summary

Port Authority of Allegheny County d/b/a Pittsburgh Regional Transit (PRT) exists to provide public transportation options within Allegheny County, Pennsylvania. This document serves as a framework for focusing PRT's actions to ensure that it is constantly striving to achieve its mission and continually improve its operations.

PRT serves the 775 square mile area within and immediately adjacent to Allegheny County. As of the writing of this document, PRT provides public transit services via 96 fixed bus routes, 3 light rail routes, 2 inclined planes, and demand-response paratransit. Though PRT oversees them, one of the inclined planes as well as the paratransit services are operated by other providers. Altogether, these services provide over sixty-one million rides annually in and around Allegheny County in southwestern Pennsylvania.

PRT strives to provide quality transit service in a manner that is efficient, effective and equitable. To do so, PRT must make a number of decisions based on competing priorities about where demand is greatest, which types of service would work best and be most appropriate, and where limited resources can and should be used. These decisions should aim to be as fair, consistent, and transparent as possible, as PRT is a public agency charged with using public dollars to serve a critical community need.

To do this, PRT has developed this set of service standards that will be used to:

- Set service goals.
- Design service and determine appropriate service levels.
- Establish minimum service performance.
- Evaluate service performance.
- Prioritize future service changes and plans.

These service standards apply to all general public transit services provided by PRT, with the exception of inclined plane service. These service standards will be applied in accordance with all applicable laws and regulations. They will be used to develop service change recommendations and will be used on an ongoing basis to evaluate, adjust, and improve services as demand and conditions change.

In most cases, the service standards define *minimum thresholds* that should be met, with most services exceeding these thresholds. However, the standards are also designed to - within limits - provide flexibility to respond to varied customer needs, a changing economy, and Allegheny County's often challenging geography. As such, these standards should not be considered binding rules, but rather general guides of the base level of service PRT strives to provide to aid in the decision-making process around changes to service.

These standards may change over time, as planning is, by nature, fluid. As such, these standards will be adjusted or reapproved and reissued by PRT at a minimum of every other fiscal year.

*\*Unless labeled 'Demand Response Paratransit', the following standards refer to fixed route transit services.*

## Service Goals

### Provide Efficient Transit Service

PRT should strive to provide the highest amount of value to customers by using resources optimally to meet other goals. Through increased efficiencies, services should strive to maximize passenger trips per hour of service provided.

### Provide Effective Transit Service

PRT should strive to maximize the population's access to transit in order to grow ridership and promote long term sustainability for the organization. To promote access to transit, PRT must endeavor to provide direct and varied pathways between origins and destinations within the service area. These pathways must be able to be accessed via stops and stations, be traversed in a timely and safe manner, and be easy to understand and navigate.

### Provide Equitable Transit Service

In order to foster widespread mobility, PRT shall strive to provide targeted and representative service to populations within Allegheny County with a greater need for transit so as not to allow a disproportionate burden to fall upon these populations. Operations targeting these groups should at minimum provide a proportion of services equal or greater to that which the sub-population represents as a portion of the total population. Groups which are targeted for special attention include minority populations protected under Title VI, low income populations, senior citizens, persons without access to a vehicle, and persons with disabilities.

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## Service Overview

PRT provides a family of services that are designed to provide options to address a wide array of needs. These services include light rail and busway services, Commuter bus services to downtown Pittsburgh and Oakland, and local buses. The provision of these different types of services is tailored toward serving different types of trips and needs. A list of current routes designated by type as of the writing of this document can be found in Appendix A.

### Types of Services

#### *Rapid Network*

With less frequent stops and higher capacity vehicles, rapid (or “limited”) service can provide a trunkline transit service for longer trips and busy lines, or can run along the same route as a local service. Most bus rapid transit, light rail transit, rapid streetcars, and limited-stop bus lines run on this service pattern.

Rapid Routes form the “backbone” of PRT’s overall system. Rapid services include all modes of transit which have at least 75% of route miles along a fixed guideway or in designated, transit-only lanes, and consist of:

- **Light Rail Transit (LRT, the “T”)** that operates around Downtown Pittsburgh and extends south
- **Bus Rapid Transit (BRT)** routes that provide service on the East, West and South Busways
- Any future service to be implemented considered as **LRT or BRT**, or other modes in dedicated space, such as the planned Downtown-Uptown-Oakland BRT.

#### *Commuter Network*

Commuter routes are designed primarily to serve commute trips to and from downtown Pittsburgh and Oakland, and reverse commute trips to suburban destinations such as shopping centers and Pittsburgh International Airport. These routes should be designed to provide faster service than a local service route, either by way of only serving certain bus stops or by using a fixed guideway or highway for part of its journey. Some Commuter routes may operate similarly to a local route for peak service due to lack of ridership demands outside of typically commuter hours. Most Commuter routes only operate during commute hours, but others that serve unique commute patterns, such as hospitals or the airport, may run all day.

#### *Local Network*

Local routes, whether served by bus or rail, are the basic building blocks of urban transit. Local service must balance access—usually considered in terms of stop frequency—with speed. For passengers and operators alike, reliability is often more important than running time. To be effective, local service must be as direct as possible. Deviating from a direct route to serve areas of relatively low ridership will degrade the quality of service.

Local routes are defined as non-fixed guideway routes or commuter routes, that serve on an average weekday 1,000 or more riders.

#### *Coverage Network*

In low-density areas, or where street networks are poorly connected, basic transit accommodation often results in indirect or infrequent service. In these areas, routes have to be circuitous to serve small pockets of ridership. This is best done by using a coverage route rather than adding a deviation to a local route. Keeping coverage routes as direct as is reasonable can be a prelude to a more productive service as density and demand increases.

Coverage routes are defined as non-fixed guideway routes or commuter routes, that serve on an average weekday less than 1,000 riders.

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### **Paratransit Network**

ACCESS is a coordinated, shared-ride paratransit system that has been providing door-to-door advanced reservation transportation to the general public but primarily for people with disabilities, seniors and clients of human service agencies in Allegheny County since February 1979.

ACCESS is open to the general public. PRT sponsors special discounts for the following groups of persons:

1. Persons with disabilities who are certified as ADA paratransit eligible. This service is sponsored by PRT
2. Persons age 65 or over who have registered for the ACCESS 65+ (PA Shared Ride) Program receive an 85% discount on fares. This subsidy is provided through the Pennsylvania Department of Transportation from State Lottery funds.
3. For non-ADA eligible persons or trips, the Connections Program provides ACCESS service at an 85% discount on fares if there is no bus option available, or provides feeder service to and from the bus if fixed route service is available on at least one end of the trip. The Pennsylvania Department of Transportation assists with subsidies for these trips from Persons with Disabilities (PwD) and Section 5310 operating funds.

Over 140 additional agencies also sponsor ACCESS service for their clients. Each agency determines which people and trips they will sponsor. Major sponsors include: Allegheny County Department of Human Services through the Medical Assistance Transportation Program, the Area Agency on Aging and the Office of Intellectual Disability; and Pennsylvania's Home and Community Based Waiver Programs.

### **Service Garages**

PRT's services are directly operated out of four bus garages and one light rail center. Each location serves a general section of PRT's overall service.

- North - Ross bus garage
- South – West Mifflin bus garage (Southeast), South Hills Village Rail Center (LRT)
- East – East Liberty bus garage
- West – Collier bus garage

### **Fixed Route Service Area**

It is important not only to define the types of services that PRT provides, but also to define who is served by these various types of transit. For the purposes of this document, PRT assumes anyone living within the following “catchment areas” has access to transit:

#### **Bus Stops**

- Within ¼ mile (on road network) of residence via walking

#### **Transit Stations (Rapid transit services)**

- Within ½ mile (on road network) of residence via walking

While biking and driving catchment areas are important considerations for network planning, the walkable catchment area will be used as the basic “service area”, since not all passengers have access to a bicycle or automobile.

### **Demand Response Paratransit Service Area**

- ACCESS provides service between any origin and destination within Allegheny County, as well as any destination up to 1.5 miles outside Allegheny County.
  - ADA eligible paratransit service is available anywhere within the defined ADA service area of 3/4 of an airline mile from PRT's non-commuter, fixed bus route or from any rail station operating on that day and at that time.
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## Service Design Standards

PRT strives to serve as many of Allegheny County's residents, workers, and visitors as it can with the resources that it has available. At the same time it needs to serve a wide variety of riders, trip types, and demands, many of which conflict with each other. For example, most riders want fast service, but many also want many bus stops in order to minimize the distances that they have to walk, which actually reduces vehicle speeds. Thus, service elements that will attract one type of rider to transit can drive other riders away, and PRT must balance these competing desires.

To serve as many riders as possible, and as described in the previous section, PRT provides different types of service. These services are intended to meet the basic needs of residents in developed areas who cannot drive and to provide a compelling alternative for those who can drive. For both types of riders—and those in between—there are certain service design principles that will improve service for nearly all riders.

Each of the following factors for service design shall be reviewed annually or as major system changes occur to ensure that all service adheres to the standards to the best of PRT's ability.

### Services Should Maximize Efficiency of Resources

#### *Fixed Route Transit*

Transit services should be designed and held to alignments which serve the greatest density of origins and destinations to as to maximize the number of potential riders while using the least amount of resources while still providing safe, effective and equitable service. Therefore the ultimate goal with designing a transit route is to choose an alignment which serves the greatest number of people in the most efficient way possible. Maximizing the number of passengers requires finding key areas in which those passengers originate and bring those passengers to their desired destinations. Origins include where passengers live, but also of key importance are origins where passengers can access transit via other transportation modes, such as through pedestrian and bike pathways, park and ride facilities, connections with regional public transit carriers, paratransit services, train stations, and airports. Destinations largely include access to the greatest number and density of jobs, as well as other types of destinations such as schools, universities, libraries, parks, art and cultural institutions, retail locations, health care facilities, entertainment and recreational areas, and community services.

Routes should operate along pathways that connect the greatest number of people to the greatest number of destinations, so as to carry out the mission of PRT with the greatest effect.

#### *Demand Response Paratransit*

ACCESS is designed to be a highly coordinated system. Coordination creates economies of scale in the shared ride system and helps maintain an expansive level of service which is far greater than any single sponsor could afford.

Shifting riders from ACCESS to fixed route service whenever possible has been a major goal since the passage of the ADA as fixed route service has a lower cost and provides riders with more flexibility and freedom. Trip by trip eligibility, personalized service planning including mapping accessible paths of travel and paratransit feeder to fixed route service, have been effective tools and have helped to manage ADA paratransit demand.

### Service Should Be Straightforward

Transit services must be intuitive, logical, and easy to understand to ensure riders can use them effectively. Therefore, service should be designed so that it is easy to understand. This makes it easier for potential riders to learn about options that are available, and helps ensure that riders get where they want to go when they want to without experiencing confusion or substantial delay.



Routes should operate along as direct path as is feasible given Allegheny County's topography. The fewer directional changes a route makes, the easier it is to understand. Conversely, circuitous alignments are disorienting and difficult to remember. Routes should not deviate from the most direct alignment unless there is a compelling reason.

### Route Deviations & Variants Should Be Minimized

As described above, service should be relatively direct, and to make service direct, the use of route deviations—the deviation of service off of the most direct route—should be minimized.

However, there are many instances when the deviation of service off of the most direct route is appropriate, for example to provide service to major shopping centers, employment sites, schools, etc. In these cases, the benefits of operating the route off of the main route must be weighed against the inconvenience caused to passengers already on board.

1. Overall route productivity (in terms of passengers per revenue vehicle hour) would be equal to or better than without the deviation.
2. The deviation would not interfere with the provision of regular service frequencies and/or the provision of coordinated service with other routes operating in the same corridor.

In most cases where route deviations are provided, they should be provided on an all-day basis to keep the route simple for riders to use. Exceptions are during times when the sites that the route deviations serve have no activity—for example route deviations to shopping centers do not need to serve those locations early in the morning before employees start commuting to work.

### Routes Should Be Symmetrical

Routes should operate along the same alignment in both directions to make it easy for riders to know how to get back to where they came from. All routes should operate along the same alignment in both directions except in cases where such operation is not possible due to one-way streets or turn restrictions, or near route termini where vehicles need to turn around. In those cases, routes should be designed so that the opposite directions parallel each other as closely as possible.

### Routes Should be Designed to Maximize the Transit Service Area

To make service easy to understand and to eliminate service duplication, service should be developed to serve clearly defined markets. Ideally, major corridors should not be served by more than one route of each route type—for example, one local route and one Commuter route, and not by multiple local routes and multiple Commuter routes. By spreading out transit services, PRT can maximize the area in which riders can access transit stops and stations. Exceptions include pathways into and out of Downtown, Oakland, and other major employment centers. Exceptions should also be made when multiple routes should logically operate through the same corridor because they serve unique destinations.

### Service Should Be Consistent

Routes should have optimal headways (times between trips) within key time periods (morning and evening rush hour, midday, early morning and evening) so as to maximize use of PRT's resources while providing easy to understand services to its passengers. For example, if a bus route takes thirty minutes to complete an inbound and outbound trip, and then requires a five minute layover at the end of its trip, then a thirty-five minute or sixty-five minute headway would be optimal.

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### Services Should Be Well Coordinated

In many areas, multiple routes operate through the same corridors but to different destinations (for example, between downtown Pittsburgh and Oakland). To avoid bunching of buses and to balance loads, major routes of the same route type (for example local or Commuter) that serve the same corridor should be scheduled to operate at the same service frequencies and should alternate trips at even intervals.

Also, most routes intersect with other routes at transfer centers, stations, and street intersections. At major transfer locations, schedules should be coordinated to the greatest extent possible to minimize connection times for the predominant transfer flows. This includes having the same time point locations (in written schedules) on routes that overlap or intersect to make it easier for riders to understand frequencies and transfers to routes within their area.

### Services Should be Designed with Adequate Running Time

#### *Fixed Route Transit*

Routes are broken into segments, and schedules are designed to give each route segment a specified running time within which the segment should be able to be traversed. Scheduled running times should be set so as to maximize the percentage of time a given route segment can be run in the allotted time while minimizing the need for additional resources. On Time Performance will be calculated based on departing the first and intermediate timepoints between one minute early and five minutes late and arriving to the last timepoint at end of one directions of a route between one minute early and five minutes late.

PRT aims for on-time performance that varies by mode. This may be increased over time as PRT continues to adopt technologies and software that better allow for adjustments based on field observations:

*For the FY2024 – 2025 fiscal years, PRT has an on-time performance goal of 75% for bus and 87% for light rail. Demand Response Paratransit*

ACCESS sets its goal for on time performance at 100%. Minimum standards are:

- 94% on-time pick ups
  - Pick ups are defined as on time between ten minutes prior to and twenty minutes past the scheduled pickup time
- 95% on-time arrivals for appointments
  - Appointment drop offs are defined as on time between 30 minutes early and zero minutes late
- ACCESS maintains a 100% guaranteed ride home policy for its customers.

Additionally, paratransit must meet requirements for appropriate travel time between points:

- For ADA eligible trips, travel time must not exceed the time it would take to make the same trip on the fixed route system, including walking to and from the stop, transferring and waiting
- For non-ADA eligible trips, the maximum travel time will be 30 minutes or up to twice the direct drive time at that time of day
- Maximum travel time must not exceed two hours
- A minimum of 95% of trips must have ride times within these standards

Finally, trips must be provided within a reasonable amount of time from when requests are made:

- 100% of ADA eligible trips must be provided within a useful hour of the request, with no trips denials

### Rapid and Commuter Routes Should Be Expeditious

Routes designed to move people quickly through the service area, either by operating along a fixed guideway or by providing limited stop service, should be at least 25% faster (with a minimum of 5 minutes faster per trip) than their local bus route counterparts.

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**Stop and Station Placement**

**Fixed Route Transit**

Transit stops are the access and egress points for transit services and should be conveniently located. However, too many transit stops make travel slow, which not only has an effect on ridership, but also affects the operating costs of transit and the ability to maximize services within the system. Most riders want service that balances convenience and speed and the number and location of stops is a key component of achieving that balance. Services that emphasize speed (for example, Rapid and Commuter routes) should have fewer stops, while local services that emphasize access should have more frequent stops. Geographical barriers, such as steep grades, sidewalk widths, intersections, rail lines, and highways shall be taken into consideration when determining stop placement.

The following table exhibits PRT’s determination of appropriate standards for the average spacing between transit stops. Spacing standards are differentiated for the different types of service PRT provides and at different levels of population density. Areas of higher population density (defined as greater than 5,000 persons and jobs per square mile) should generally have more frequent stops, whereas areas with lower population density (defined as less than 5,000 persons and jobs per square mile) should have fewer stops. Exceptions to these standards should only be made in cases where accessibility is particularly problematic or dangerous, or where there are significant topographical challenges.

**Table 1: Stop Spacing (in feet)**

	High Population Density		Low Population Density
	Minimum Spacing	Spacing Guideline	Spacing Guideline
<b>Rapid Routes</b>	1,000	2,600   ½ mile	2,600   ½ mile
<b>Commuter Routes</b>	650	1,300   ¼ mile	1,300   ¼ mile
<b>Local and Coverage Routes</b>	650	900   1/6 mile	1,300   ¼ mile

*Note: For purposes of these standards, high density is considered greater than or equal to 5,000 persons (jobs + residents) per square mile, and low density is considered less than 5,000 persons per square mile.*

**Demand Response Paratransit**

All ACCESS customers receive door to door assistance from drivers, including assistance up or down as many as four steps and into the lobby of public buildings, as long as the vehicle can access the curb in proximity to the location. This policy meets the origin to destination requirements of the Americans with Disabilities Act.

For individuals whose disability requires that they not be left alone, ACCESS offers hand to hand service. Drivers ensure that customers designated with this service level are handed off to responsible staff or family members at both the origin and destination, and ACCESS maintains an individual “safety-net” plan for each eligible customer in the event there is no one available to receive the individual.

## Service Design Should Maximize In-Service Time

### *In-Service Time*

Service design can significantly impact schedule efficiency. Service should be designed to maximize in-service time and minimize out-of-service time. As such, the following standards will be used to ensure that schedules are efficiently designed based on route length, trip characteristics, and layover locations.

Table 2: Revenue Vehicle Hours as Percentage of Total Vehicle Hours

Service Type	Percentage In-Service Time
<b>Rapid Routes</b>	
LRT	80%
BRT	80%
<b>Commuter Routes</b>	50%
<b>Local and Coverage Routes</b>	70%

*Note: Commuter routes use peak direction in service time only.*

### Service Levels should be Set Based on Service Standards.

Service standards help ensure that the appropriate amount of service is provide on each route. For example, service standards should be set to determine minimum levels of service in terms of the number of trips, service frequencies, and/or passenger loadings. Service level standards are presented in the next section.

## Service Level Standards

Service level standards define when service should be provided and how often it should be provided, subject to budgetary constraints. Four standards are used:

1. Out of Service
2. Minimum Span of Service
3. Minimum Service Frequencies
4. Minimum Service Days
5. Maximum Loading
6. Minimum Productivity

These standards are used together to determine appropriate service levels for each route. At a minimum, service should be provided based on the minimum span of service and minimum service frequency standards. Beyond that, additional service should be added to meet passenger loading standards and in the morning and at night when minimum productivity standards can be met.

On an ongoing basis, service should be added when ridership increases to levels that exceed maximum loading standards. Conversely, service should also be reduced when loads fall below the passenger loading standards for a period of time. The process for ensuring this occurs will be outlined in the following section.

### Services Should be set to Maximize Ability to Service all Runs (Out of Service)

Schedules should be set so as to maximize PRT's ability to provide service to all regularly scheduled service using equipment and workforce availability. This means setting service runs per day of week based on the availability of Bus and Light Rail Operator counts, including an extraboard to cover planned and unplanned employee absences or other issues.

This standard was added in the 2023 update to this document, as a result of the COVID-19 pandemic starting in 2020, which had a significant impact on Operator availability and had lasting effects on PRT’s ability to maintain 100% of its service. Prior to the pandemic, system-wide out of service levels were below 1%.

The system-wide goal for maintaining service is to stay below an out of service percentage of 1.5%.

**Minimum Span of Service**

**Fixed Route Service**

The minimum span of service standards define the minimum period of time that different types of service should operate, in terms of the latest that service should begin and the earliest that it should end. The “end” time for services in the following table indicates the time of the beginning of the final trip (as opposed to the end of the last trip). Based on demand, service may start earlier and end later; it is subject to the minimum performance standards presented in the next section. Higher ridership services will have long spans of service, while lower ridership services will have shorter spans of service. Minimum span of service standards are presented in Table 3.

Table 3: Minimum Span of Service Standards

	Rapid Routes	Commuter Routes		Local and Coverage Routes
		AM Peak	PM Peak	
<b>Weekdays</b>				
Begin	6:00am	6:30am	4:15pm	6:00am
End	11:30pm	7:30am	5:15pm	6:00pm
<b>Saturdays</b>				
Begin	6:30am	None	None	9:00am*
End	11:00pm			8:00pm*
<b>Sundays</b>				
Begin	7:00am	None	None	10:00am*
End	11:00pm			6:00pm*

Note: The beginning span of service refers to the beginning of the first inbound trip, and the ending span of service refers to the end of the last outbound trip.

\*If the route has service on this day.

Based on demand, service can start earlier and end later than these standards stipulate. However, service that starts earlier or ends later is subject to minimum performance levels.

**Demand Response Paratransit**

ACCESS provides service from 6:00a.m. - 12:00a.m.

ADA eligible paratransit service is additionally available prior to 6:00a.m. and after 12:00a.m. if both the trip origin and destination are within the ADA service area and the fixed transit route offers service before 6:00a.m. or after 12:00a.m.

**Minimum Service Frequencies**

The minimum service frequency standards define the minimum service frequencies at which each type of service should operate. Based on demand, many services would operate more frequently, and in these cases, the service frequencies would be based on ridership and loading levels (as described in the next section). Minimum service frequency standards are presented in Table 4. Note also that many corridors would be served by multiple routes, and in these cases, effective service frequencies would be more frequent

than for individual routes. There are many cases where service frequencies may differ slightly from these standards due to total trip times and maintaining optimal spacing between trips. For example, it may be optimal for vehicle and operator resources to have 32 minutes between trips than 30 minutes due to the route's characteristics. Situations like this where service frequencies are not exactly met for optimal scheduling purposes will be noted in the Annual Service Report.

Table 4: Minimum Service Frequency Standards (Minutes)

	Rapid Routes	Commuter Routes	Local Routes	Coverage Routes
<b>Weekdays</b>				
Early Morning	30	--	60	75
AM Peak	15	3 trips	30	60
Midday	20	--	60	75
PM Peak	15	3 trips	30	60
Evening/Night	30	--	60	75
Saturdays	30	--	60*	90*
Sundays	30	--	60*	90*

\*If the route has service at this time of day/day of week.

### Minimum Service Days

PRT recognizes the importance and benefits of communities to have daily access to transit service to connect people to life. The following minimums will be used to prioritize the service days by route types:

- Daily (7 days a week) service: Rapid, Local, and Coverage routes
- Weekday only service: Commuter routes

Route design, designations and variants for weekend service may differ from weekday service due to community needs and ridership demand in an efficient, effective, and equitable manner.

### Maximum Loading (Overcrowding)

PRT will strive to provide sufficient levels of service to accommodate all passengers on a given route. During peak periods, some passengers are expected to stand, but the number of standing passengers should be kept to reasonable levels whenever possible. Also, services will be designed so that when passengers do have to stand, they will not have to stand for long periods of time. On routes that operate for long distances on highways, and on all off-peak services, service will be scheduled to accommodate most passengers with a seat.

Two different techniques are used to keep passenger loads within acceptable levels. The first is to match vehicle types with ridership levels, and to use sixty foot articulated vehicles on higher ridership routes. The second method is to provide more frequent service, with service frequencies set to keep passenger loads within the limits presented in Table 5. These standards are presented in terms of maximum passenger loads as a percentage of seated capacity of the vehicle used to provide service (see Table 6). Where average maximum passenger loads on a given trip exceed these levels over a period of time, PRT will deploy larger vehicles and/or increase service frequencies whenever possible within available budget.

Data will be analyzed to determine specific trips where average maximum loads exceed capacity. If multiple trips are often overcrowded for significant distances on a given route, resources shall be used if available to place additional trips on a route during periods of overcrowding.

Table 5: Maximum Passenger Loading (as a Percentage of Seating Capacity)

	Rapid Routes		Commuter Routes	Local and Coverage Routes
	LRT	BRT		
<b>Weekdays</b>				
Peak Hour	200%	120%	120%	120%
Off-Peak	100%	100%	100%	100%
<b>Saturdays</b>			-	
All Day	100%	100%		100%
<b>Sundays</b>				
All Day	100%	100%		100%

Table 6: Maximum Passenger Loads by Vehicle Type

Maximum Loads by Vehicle Type	Seats (Typical)	100% Capacity	120% Capacity	200% Capacity
Light Rail Car	62	-	-	124
60' Articulated Transit Bus	60	60	72	-
40' Transit Bus	40	40	48	-
35' Transit Bus	35	35	42	-

## Minimum Productivity

### Fixed Route Transit

In order for PRT to use its resources effectively, all routes should achieve a minimum level of productivity. These standards use “Passengers per Revenue Vehicle Hour” which is a measure of the average number of passengers each bus deployed on a given route carries for each hour that it is in-service, to measure productivity.

With limited exceptions, all routes should attract a minimum number of passengers for each hour that buses are in-service (revenue vehicle hours). These minimum productivity levels are presented in Table 7.

Table 7: Minimum Productivity Levels (Passengers per Revenue Vehicle Hour)

	Rapid Routes	Commuter Routes	Local Routes	Coverage Routes
<b>Weekdays</b>	40	20	25	15
<b>Saturdays</b>	30	-	15	15
<b>Sundays</b>	25	-	15	15

#### Notes:

- Productivity levels apply only to days of week which routes operate.
- LRT routes are at this point to be considered as one route with one overall performance of passengers per revenue vehicle hour calculated (due to limits on passenger counting by station, separating routes is infeasible as of the writing of this document). All other modes can easily be separated by route.

### Demand Response Paratransit

ACCESS productivity is defined as the number of revenue passenger trips provided in a billable hour. ACCESS service providers are paid by the hour. To ensure the efficient use of resources, minimum productivity requirements are established. PRT sets productivity standards annually for the system, and the broker, in turn, sets minimum productivity standards for each of its service providers based on performance standards and trip characteristics including average trip length, percentage of trips taken by people who use wheelchairs, percentage of no shows and cancellations, and percentage of pre-grouped service.

## Monitoring and Evaluating Service

### Annual Service Report

All monitoring and evaluation of service will be summarized in an Annual Service Report, to be developed by the Planning and Development Division at the end of each fiscal year to summarize the prior years' service. The report shall include the following sections outlined below.

### Overall Service Performance and System Equity

Service design and service level metrics will be quantified to give an understanding of how well PRT is doing with adhering to its goals of efficiency, effectiveness, and equity. Key Performance Indicators will be compared against peer transit agencies where possible to determine priority areas for improvements in the upcoming service year. An overview of system service performance will include the following metrics:

Category	Attribute
General	Ridership
	Service Hours
Efficiency	Passengers per revenue vehicle hour
	Cost per passenger served
	Percent of time spent in revenue service
Effective	Walkable service area
	On-time performance
	Overcrowding
	Stop spacing
Equity	Persons with disabilities
	Senior citizens / persons over age 65
	Low income persons and low wage jobs
	Persons of color / persons of a minority race or ethnicity
	Persons without access to a vehicle
	Persons with limited English proficiency
	Persons under age 18
Single mothers	

### Title VI Evaluations

Each year, the Annual Service Report (ASR) summarizes findings for Title VI of the Civil Rights Act of 1964. Specifically, the ASR reviews the following service metrics for low income/non-low income, and minority/non-minority comparisons between route groupings:

- On-time performance;
- Out of service percentage;
- Crowding;
- Service span by day of week; and
- Trips per service hour by day of week.

### Route Service Performance

Routes not meeting any of the standards will be identified in the Annual Service Report, with explanation regarding future changes to improve adherence or justification for not meeting service levels given if such changes would be in some manner prohibitive.

In cases where routes do not meet minimum productivity standards, changes should be made to improve route productivity. These changes could include any of a variety of measures, including but not necessarily limited to;



- Reconfiguring the route alignment to attract more passengers;
- Eliminating particularly unproductive segments;
- Reducing or increasing service frequency;
- Reducing or increasing span of service;
- Changing the route from an all-day route to one which only runs during peak hours;
- Targeted marketing to attract new riders;
- Public outreach;
- Conducting a ridership survey to better understand the needs of the community around the route; and/or
- Working with community groups to better understand how the route can meet the community's needs.

If no changes can be identified that can improve productivity without undue burden or hardship to PRT, then the route could be a candidate for elimination. If the situation leading to reduced productivity is assumed to be changing in the near future, written documentation detailing why the route should not yet be adjusted will be provided in the Annual Service Report. After 2 fiscal years of not meeting productivity standards of a route, action is required to alter service on that particular route to ensure that PRT uses its resources efficiently. Under no circumstances is a route to continue unaltered after 24 months of failing to meet minimum productivity standards.

#### *Implementation Updates*

All major service changes that have been implemented will receive an implementation update in the two subsequent Annual Service Reports after the changes are made. Implementation updates will summarize how the change has affected route performance (efficiency), as well as how many riders have been gained/lost (effectiveness) and how these changes are effecting subpopulations (equity) if data is available.

#### *Major Service Changes for Upcoming Service Year*

Based on evaluation of services from the previous sections, a list of proposals being considered for service changes for the following year will be included.

#### *Budget for the following Fiscal Year*

The Annual Service Report shall also include a projection of changes to the operating budget for the year following the upcoming service year, so that PRT and the public have an indication of future adjustments to service (for example, whether additional funding is available for increasing service, budget is remaining stable for no major changes to service, or whether budget is expected to decrease and reductions in service may be necessary).

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## Service Change Process for Fixed Route Service

### Overview

PRT has a structured process for evaluating proposed changes to its existing system, both from within PRT and from the Public.

Small changes are made throughout the year as issues arise such as traffic detours, but larger, service-enhancing or efficiency-seeking changes are done annually. As of this current document, major service changes are made in the October schedule changes. This process is comprised of the following key stages and with key frequencies:

Every 3-5 years, a service study or comprehensive operational analysis is completed. This study will include:

1. Collection of proposed service changes (both internal and external)
2. Evaluation of proposals for effectiveness, equity, and efficiency measures
3. Public engagement on proposed service changes (depending on the scale of the study)
4. Prioritization of proposals and preliminary timelines for rollout in a final report of the study.

Every year:

1. Development of the Annual Service Change Plan within the Annual Service Report
2. Public engagement, including Title VI and legal proceedings for major service changes in the Plan
3. Development of the preliminary operationing budget for service changes (including staffing trends)
4. Finalization of proposed changes and presentation to the Board
5. Major service changes to occur when feasible and logical with the Annual System Pick (each October as of the Collective Bargaining Agreement at the time of the writing of this document).\*

Additions to service through major service changes are to be considered only when existing services are adequately meeting the aforementioned service standards. For example, a new route should not be added to a garage's work during peak hours if an existing route from that garage is experiencing significant overcrowding during those same hours; resources would first need to be used to address overcrowding to bring vehicle loadings into an acceptable range.

*\*Per the collective bargaining agreement with ATU Local 85, elimination of a route, addition of a route, or movement of a route from one Operating Division to another must occur during the System Pick.*

### Annual Service Budget

The annual service budget shall be determined by the Finance Department annually and released internally as a proposed budget in the spring of each year so that major service changes can be appropriately ranked and prioritized given resource constraints in the coming year.

### Categorization of Service Changes

Service changes shall be categorized so as to better understand which types of changes need to be evaluated internally. Changes are either considered to be minor or major, and are defined as:

### *Minor Service Changes*

#### Running Time Adjustments

- Route segments which are consistently early or late
- Route segments which are consistently taking more or less running time than is scheduled

#### Out of Service Time

- Appropriate layover length given reliability of travel time on a given route
- Appropriate running time to and from the bus garage from the start or end of a route
- Appropriate cross country travel times between two route end points

#### Bus Stop Placement

- Using appropriate spacing standards as outlined in this framework

#### Detours

- Minor changes to bus routes due to street closures (less than 6 months)

#### Holiday or Special Event Service Adjustments

- Added service frequencies on holidays or special events days (such as sporting events)

#### Trips

- Adding or removing trips to maximize efficiency and minimize overcrowding

### *Major Service Changes*

- Addition or removal of a route
- Addition or removal of a service day for a route
- Permanent changes that constitute an addition or reduction of more than 30% of the weekly trips, service hours, or service miles on a given route
  - Or adding or removing more than 2,500 annual hours of service on longer/more frequent routes

### **Process Timeline**

This timeline is based on the current tri-annual service changes (beginning with calendar year 2023; prior to that, service changes were made quarterly). The “Service Year” aligns with the fiscal year between the months of July to June.

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Annual Service Changes - Timeline		FISCAL YEAR												FISCAL YEAR					
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
<b>Comprehensive Operational Analysis (COA) or Service/Network Study (every -5 years)</b>																			
<b>Annual Service Report (ASR)</b>	Route data and evaluation, system data		X														X		
	Report development			X	X												X	X	
	NTD Peer data release of prior FY data					X												X	
	Public presentation and release						X												
	Annual Service Change Plan (ASCP, part of the ASR)						X												
<b>Minor Service Changes</b>				X				X					X				X		
<b>Major Service Changes Identified in the ASCP</b>	Annual Service Change Plan as part of the ASR						X												
	Title VI draft report							X											
	Public comment period, engagement, and hearings for service changes								X	X	X								
	Summary of engagement and final Title VI report with proposal to PRT's Board												X						
	Board adoption of service change plan and Title VI analyses												X						
	Budget adoption												X						
	New fiscal year starts													X					
	Major service changes implemented																X		

**Collection of Proposed Service Changes**

Proposals for service changes are collected through the following means and summarized each time a service/network study or COA is completed:

1. Internal Requests
  - a. Amalgamated Transit Union (ATU) Leadership
  - b. Schedule Committees of the ATU (per Operating Division)
  - c. Service Development
  - d. Transit Scheduling.
2. Exernal Requests
  - a. Customer Service
  - b. Public Relations
  - c. Government Relations
  - d. PRT's WebsitePublic meetings or other community engagements.

### Evaluation of Proposals for Major Service Changes in Comprehensive Operational Analyses or Service/Network Studies

Proposals will be evaluated in the three main categories with which PRT uses as its goals for service; the efficiency of a proposal based on resources needed to carry it out, its effectiveness at increasing access to transit or transit use within the service area, and whether it changes the equity with which services are provided to those who have higher need. Proposals which do not meet service standards do not need to be evaluated and will be noted as such by staff.

Once proposals have been aggregated and determined to meet basic service standards as set forth in this document, they will be evaluated and ranked based on the following criteria:

**Efficiency** of a service proposal will be evaluated using assumed costs/savings of the proposal against projected ridership growth/reduction and assumed fare revenue changes. The overall measure of efficiency will be the projected net cost / savings per passenger gained / lost.

**Effectiveness** of a service proposal will be evaluated quantitatively using a range of factors, including changes to straightforwardness, symmetry, coordination, walkable service area, span of service, frequency of service, travel time, or on time performance of a route.

**Equity** of a service proposal will be evaluated based on the demographics of the population which the service serves (as defined by the walkshed surrounding stops / stations). Services are categorized as more equitable if they provide access to a population which has a higher percentage of a targeted subpopulation than the proportion of the total population that that subpopulation comprises within the overall service area. Targeted subpopulations include low income and minority populations protected under Title VI of the Civil Rights Act of 1964, senior citizens, persons without access to a vehicle, and riders with disabilities.

### Ongoing Evaluation of Implemented Service Changes

After a major service change is implemented as part of the Service Request Evaluation process, changes should be monitored annually to ensure the changes are successful.

In general, a route with changes is expected to be operating within the efficiency standards set forth in this document within 24 months or the release of the third Annual Service Report after the change is made. If at this time the route is not meeting efficiency levels for that route type and day of week, changes should be made in accordance with these standards to better utilize resources effectively.

An exception to this would be if the extension creates a situation whereby the route as a whole is no longer meeting efficiency standards, in which case it should follow strategies set forth in this document to better utilize resources effectively.

### Evaluation of Proposals to Alter Paratransit Service

As part of its ADA Paratransit Plan, PRT worked closely with the community to identify areas in which its ADA eligible complementary paratransit ACCESS service exceeded the minimum requirements of the ADA. Should the cost of ACCESS service which exceeds the ADA minimums become greater than the available financial resources, the plan calls for implementation of the Contingency Plan developed by the community. The Contingency Plan calls for service reductions and fare increases to be implemented in the following order:

- Increase ACCESS fares
  - Proportional increases in mid-range fares
  - Increase the minimum ACCESS fare to two times the base fixed route fare
  - Premium fares outside the service area
- Eliminate the convenience fare and mandate use of fixed route when available and conditions permit
- Variations of reduced service area outside of the ADA service area should be implemented in the following order:

- Weekdays after 8 PM
- Saturdays all day
- Sundays and holidays all day

As each action is taken, the cost savings will be evaluated prior to implementing the next scheduled service reduction. Likewise, requests for service enhancements will be evaluated for feasibility of implementation.

With the change in funding and the implementation of the ADA minimum service area in 2012, there are new considerations for service reductions. In addition to using the three main categories for evaluation, PRT will use the ADA Contingency plan as its starting point in evaluating ACCESS service reductions or enhancements.

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## Appendix A: Proposed Route Designations beginning with Fiscal Year 2024

Route Type	Routes
Rapid	G2, P1/P2*, RED, BLUE, SLVR
Commuter	7, 18, 65, 19L, 51L, 52L, G3, G31, 01, 05, 012, P3, P10, P12, P13, P16, P17, P67, P69, P7, P71/71*, P76, Y45
Coverage	2, 4, 11, 15, 20, 22, 26, 27, 29, 36, 40, 43, 44, 55, 58, 60, 74, 79, 89
Local	1, 6, 8, 12, 13, 14, 16, 17, 21, 24, 28X, 31, 38, 39, 41, 48, 51, 53/53L*, 54, 56, 57, 59, 61A, 61B, 61C, 61D, 64, 67, P68, 69, 71/P71, 71A, 71B, 71C, 71D, 75, 77, 81, 82, 83, 86, 87, 88, 91, 93, P78, Y1/Y46*, Y47, Y49

\*These routes are planned to merge into one route within 12 months of publishing this document.

### Changes to Route Designations

Due to pandemic ridership declines or other changes, several routes no longer fit their route designation. The following changes to route designations are being made at the time of this writing:

- 28X and P78 will be converted from Commuter to Local routes
- 2, 15, 27, 44, 55, and 58 will be converted from Local to Coverage routes

The following routes will be merged into one route. This change is expected to occur within 12 months of publishing this document, and the purpose of these mergers is to simplify data and reporting methods for these route pairs which act as variants of one route already but have been designated as separate routes in the schedule software at PRT:

- 53/53L (Local)
- 71/P71 (Commuter)
- P1/P2 (Rapid)
- Y1/Y46 (Local)

## Appendix B: Data Sources and Explanations

### Automatic Passenger Counters

In order to analyze adherence to service levels and service design, PRT has several sets of data that it uses. The most intricate of these data sources are automatic passenger counters (APCs) that PRT has installed on the doors of all of its buses. These APCs count the number of passengers boarding (getting on) and alighting (getting off) each bus at every stop along the route, and then use that data to calculate the load (number of people) on the bus at any given time. These counts are time stamped, so data can be viewed by day of week, trip time, and direction of the vehicle. PRT has measured the effectiveness of these passenger counters to be around 98.5% accurate when compared with actual observations.

Rail vehicles do not yet have the ability to count passenger loads and stop/station boardings and alightings, and as such, farebox payment data is used as a substitute for overall route ridership. Farebox data is not as accurate as APCs, and is only able to be viewed by trip (not by stop), so it is somewhat limited.

### Modeling and Projecting Ridership Changes

#### Service Improvements

When possible, previous similar situations will be used as base cases to look at percentage of population using transit as compared to percentage of population working in the destination area from Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES) data from the U.S. Census Bureau. This data provides representative samples of origins and destinations of the residents and workforce within a given geographic area. While this does not account for non-work trips, it gives a good baseline to extract data out from to project ridership changes in the near future.

***Service Reductions***

Service reduction effects will be determined by aggregating the stop boardings at stops which are to be eliminated *and* fall outside of the walkshed of  $\frac{1}{4}$  mile along a street network from another stop. If several stops being considered for elimination are within  $\frac{1}{4}$  mile of another route/group of stops (or  $\frac{1}{2}$  mile of a rapid route station/stop), then reasonable assumptions about which of these passengers will now have to walk farther than the walkshed are to be made, and these passengers are considered to be outside of the remaining walkshed and will be assumed to no longer use the transit service.

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