Task 5: Goals, Objectives, and Performance Measures

Guiding principles

The Portland Area Comprehensive Transit System (PACTS) established clear goals, or "guiding principles", with regards to the future of transit services in the Southern Maine Region. These guiding principles are best summed up in Destination 2040:

PACTS will plan, fund, and maintain a transportation system that will –

1. *Maintain a Regional Focus*
2. *Support Economic Development*
3. *Prioritize Mobility, Safety & Accessibility*
4. *Incorporate Energy Conservation*
5. *Integrate Land Use*
6. *Protect Environmental Quality*

It is also stated in Destination 2040 that it is PACTS' desire to "engage the public earlier in the process and in more meaningful ways". It was important for the Regional Transit Development Plan (RTDP) to involve a significant component of public engagement at the outset of the plan's development, in the form of surveying and interviewing riders on-board the vehicles and at transfer points. Doing so set the stage for translating these six guiding principles from Destination 2040 into more actionable and measurable short-term goals and objectives. This in turn sets the stage for the needs assessment and recommendations, which follow in later tasks.

Measurable goals

In developing the measurable short-term goals, it was important to recognize the importance of ensuring the goals are applicable to all transit operators, not just bus operators. This distinction is particularly important because Destination 2040 was focused more on buses, roads, and infrastructure, and using it in and of itself to build the measurable goals would be a limited approach. Rather, in the RTDP, Destination 2040 was used only for guiding principles, not the development of goals, objectives, and performance measures. Destination 2040 was simply the starting point, to ensure goal-setting is in alignment with previous regional efforts. When developing the measurable goals, all transit operators, including buses, ferries, trains, and paratransit, were considered.

Increase ridership
Community buy-in to transit improvements is best measured in the form of ridership. Put simply, if service improvements are beneficial to users, ridership will grow. And, given the number of transit users travelling to/from areas outside of Portland, the more regionally focused the service updates are, the more beneficial they will be to Southern Maine residents as a whole, and the greater the impact to ridership.

Decrease travel time
As discussed in the survey results analysis, the factors most likely to affect ridership are service frequency, and service reliability. That is, the more frequent the service, the more punctual the service, and the more convenient the stop locations, the more likely one is to choose transit for their trip, resulting in greater ridership. Travel time, therefore, is perhaps the most important transit-related community value, particularly as it relates to travel to and from work, as the survey

Revised 12-7-17 SMC

results suggest that work commutes are the most common trip purpose. Frequency, reliability and coverage are not goals themselves, rather they are means of achieving the goal of decreasing travel time.

Optimize the return on the investment in transit
The key word here is "optimize." The public makes an investment in transit and it expects less congestion, cleaner air, greater economic activity and a higher quality of life. Generally, people are willing to pay more for transit if they feel there is value in the investment. Moreover, only 14% of survey respondents indicated that they would not be supportive of a new dedicated sales tax to support increasing or improving public transit in Southern Maine.

Increase passengers per revenue mile
This is best measured in terms of passenger miles divided by total miles. It can be measured other ways instead, if passenger mile data is not tracked. Passengers per trip during peak and off-peak is another option, though this provides less insight with regard to how full the buses are. It does not always make sense to invest in projects that will boost ridership and decrease commute time if only a small number of users will benefit from the updates. No transit service can be everything to everybody. This goal goes hand in hand with optimizing costs, but is operations focused. In addition to value-for-money, there are other advantages to increasing utilization. For example, empty buses can be a haven for vagrants whereas full buses can be a good marketing piece to prospective riders that the service is effective and efficient.

Reduce emissions
This goal aligns with the Destination 2040 initiatives of incorporating energy conservation and protecting environmental quality. It may have slight ridership impacts as some people make travel choices based on environmental impact, and cleaner air will also bring larger quality of life benefits which impacts where people choose to live.

Improve safety
This goal is relatively self-explanatory, with the clarification that in addition to accident rates, safety also refers to other events that affect the traveler's experience such as near misses and mechanical breakdowns. Where transit is concerned, the safer that transit services are, the more likely riders are to use transit, and the more favorable it will be viewed within the community. This includes both actual safety and perceived safety.

Improve connectivity
This goal is more abstract than the others but may still be measurable if PACTS can understand regional travel patterns. Improved connectivity may be achieved through the data capabilities that would accompany the implementation of a regional smart card for fare payment, or through conducting on-board origin-destination surveys of riders. In this case connectivity refers not only to the connectivity among routes within a single transit agency, but also to the connectivity between different transit agencies and the integration of the transit system with other aspects of the regional transportation network (roads, active transport, etc.). This may be achieved in a variety of ways such as improving scheduling or routing, or introducing new or different transfer points. This goal also relates to several of the Destination 2040 initiatives including maintain a regional focus; support economic development; prioritize mobility, safety & accessibility; and integrate land use.

These measurable goals are explored further in the funding prioritization frameworks described in Task 10. Anticipating project performance against each of these goals is the precursor to

evaluating capital projects against the prioritization criteria. Then, after project implementation, it will be prudent for PACTS to track performance to monitor how closely operational and financial performance is aligned with expectations. This will allow PACTS to evaluate success, and will provide a baseline upon which future forecasts may be calibrated to.

The seven measurable goals described above are intended to be associated with a variety of projects, including service expansion projects, operations and maintenance updates, and state-of-good-repair projects. Although goals such as "increase ridership" may be difficult to link to state-of-good-repair projects or to providers such as Casco Bay Lines and the Amtrak Downeaster, they are still applicable goals from the perspective of improving transit from a regional perspective. Transit providers are encouraged to view each project's benefits compared to the "do nothing" scenario. For example, for state-of-good-repair projects which do not result in improved performance against the goals compared to present day, there will still be improved performance relative to the prospect of letting assets fall into disrepair. Transit providers are encouraged to use this perspective, as state-of-good-repair projects should not be at a disadvantage compared to service expansion projects, when evaluating them against the goals and ultimately also the funding prioritization criteria.

It is important to also consider that the member agencies need to provide inputs to PACTS regarding their planned capital projects, such that PACTS may evaluate each project in accordance with the project prioritization framework. In that respect, these measurable goals which form the prioritization criteria must resonate with the management of each member agency, and must be measurable such that the appropriate inputs may be compiled by each agency. This is best done in the form of developing (and tracking against) objectives. That is, transit agencies track against the objectives described below, which feed into both the project prioritization framework and PACTS' measurable goals. Tracking against the objectives, therefore, serves multiple purposes on top of general internal performance management, and allows for a consistent and efficient approach to data collection and performance monitoring across the region.

Objectives

Objectives, benchmarking, and performance targets are extensions of the measurable goals described above. Whereas the goals are regionally-focused and are intended to be tracked by PACTS, objectives and benchmarks are tailored to the individual transit agencies delivering the service. Generally, they can also be monitored more frequently, in some cases daily, whereas the goals are more appropriate to evaluate over a longer time period, for instance from month to month or from year to year.

A table describing the relevant objectives is shown below. Benchmarks may be derived from the objectives shown in this table but are not included in this report as they vary from agency to agency and, in some cases, from route to route. Benchmarks refer to current performance against each objective and act as a basis upon which performance targets may be established. In a sense, benchmarks are what transit agencies can expect to achieve if current operations continue and no further actions are taken. Performance targets are usually higher-reaching compared to the benchmarks, and a sample process for setting performance targets is described in Table 1 below. Unlike benchmarks, further actions must be taken to achieve performance targets, such as a transit service expansion project or the implementation of a best practice. As an example, if a transit provider is currently achieving 90% on-time performance, its benchmark is 90% and its performance target would be higher, for instance 95%.

Revised 12-7-17 SMC

Table 1: Transit Provider Objectives

Objective	Data collection needs	How to set performance targets	How it relates to achievement of goals	Importance
Increase boardings per service hour (or service mile)	Boardings can be tracked manually, by an automated passenger counter (APC), or through fare collection. Service hours are tracked by transit operations staff.	Longer rural routes should have different performance targets from shorter urban routes as they would expectedly have lower boardings per service hour.	Related to ridership and utilization. The greater the boardings per service hour, the greater the ridership and utilization.	Greatest measure of productivity. Additionally, helps with the assessment of the appropriateness of routing, scheduling, and fleet deployment.
Decrease cost per trip	Cost refers to the agency's gross costs, fully burdened, including operating, maintenance, and administrative expenses. Trips refer to "linked trips" and correspond with fare-paying customers and are equal to boardings adjusted for the agency's transfer rate.	Different services should have different performance targets. For example, the BREEZ should have different target from other METRO routes, and summer ferry routes should have a different target from year-round ferry routes.	Related to ridership, cost optimization, and utilization. The lower the cost per trip, the greater the ridership, utilization, and cost optimization.	Provides insight into the value the public (riders and non-riding taxpayers) is deriving from the investment in transit. May help flag opportunities to cut costs or grow ridership.
Increase farebox recovery ratio	Total operating costs and farebox revenues, which are tracked.	At minimum, agencies should track this systemwide and set a systemwide performance target. For further insight, agencies may set targets at the route level, however this requires cost allocation among the routes, which can be misleading in some circumstances.	Related to utilization and cost optimization. The higher the farebox recovery ratio, the better the cost optimization.	Another measure of productivity. Is a useful measure to demonstrate the value of a transit system and system updates, and to get buy-in from elected officials. May provide insight into possible fare evasion issues.
Decrease operating cost per vehicle-hour (all vehicle hours including	Cost in this case refers to operating expenses only. Vehicle-hours are similar to revenue hours but also include	At minimum, agencies should track this systemwide and set a systemwide target. Depending on the fleet	Related to cost optimization. The lower the operating cost per vehicle-hour, the lower the	A good benchmark for forecasting incremental costs associated

Objective	Data collection needs	How to set performance targets	How it relates to achievement of goals	Importance
deadhead)	non-revenue hours – these are tracked by maintenance.	composition it may make sense to set targets for each vehicle model, particularly if there are marked differences (buses, ADA vehicles, and trolleys for example); although the majority of the cost tends to be operator wages.	overall costs.	with service expansions; helps flag cost drivers and diagnose service design and delivery inefficiencies.
Optimize total cycle time	This can be determined simply by reviewing route schedules, or more accurately by reviewing CAD/AVL system data. Alternatively, it may be calculated by taking the total revenue hours and dividing by the number of cycles over the timeframe, although it is more challenging to identify total cycle time by route this way.	Setting a performance target for total cycle time can be somewhat arbitrary. It is often most effective to set route-by-route performance targets for cycle time after comparing travel times on transit with travel times for driving, and considering transfer rates and average wait/transfer times.	Related to travel time and ridership. The lower the cycle time for a particular route, the shorter the travel time and the greater the ridership (assuming coverage and mileage is relatively constant).	Provides insight into whether a route is operating too slowly and may need to be restructured, and into the viability of transit as an alternative to driving.
Improve on-time performance	Similar to cycle time, this can be tracked manually through driver logs, or more efficiently and accurately by reviewing CAD/AVL system data.	Agencies should review their current on-time performance and set the bar progressively higher as on-time performance improves. Targets generally range between 90% and 100%. The definition of "on-time" can vary from agency to agency but generally refers to vehicles departing from a stop no more than 0 minutes ahead of schedule and no more than 3 or 5 minutes past its scheduled departure. For ferries a larger window may be appropriate (10 minutes for instance).	Related to travel time and connectivity. The higher the on-time performance, the shorter the travel time and the more likely riders are to make their transfers.	Allows agencies to assess a variety of factors including operator performance, schedule appropriateness, trip time variability, and system reliability.

Objective	Data collection needs	How to set performance targets	How it relates to achievement of goals	Importance
Increase passengers per capita	Monthly ridership tracked manually, through APC data, or through fare collection, and population data from the most recent census with a growth rate applied make the estimate current.	Performance targets may be set in terms of trailing-12-month ridership divided by total service area population. In most cases one agency-wide target is sufficient, though in services attracting a high number of tourists, some distinction of seasonality may be appropriate.	Related to ridership, emissions, and safety. The greater the passengers per capita, the greater the ridership, and the fewer people using personal vehicles for their trips which leads to fewer emissions and fewer accidents.	Provides insight into how ridership is growing relative to the total population, and into transit's modal share.
Increase miles per gallon (or gallons per hour)	Fueling history and hubodometer readings tracked by transit maintenance teams.	Performance targets should be unique to each vehicle within the transit system's fleet. They should be realistic given the parameters of current fleet vehicles and the capital plan.	Related to emissions and travel time. The greater the miles per gallon, the fewer the emissions and the shorter the travel time (due to higher average speed).	A basis for investigating possible issues which might include defective parts, vehicle idling policies, and inefficient driving or routing.
Decrease percent deadhead miles, to a minimum	Hubodometer readings tracked by transit maintenance teams, and in-service miles can be tracked manually by operators or through the CAD/AVL system.	One systemwide performance target is sufficient. The target itself is dependent on the location of the maintenance and storage facility, the size of the operation, the size of the service area, and the scheduling and hours of service.	Related to emissions and cost optimization. The lower the % deadhead miles, the fewer the emissions and the better the cost optimization.	A basis for investigating possible issues related to road calls, vehicle blocks, scheduling, route alignments.
Optimize passenger activity at transfer points	Passenger activity in the form of boardings and alightings can be tracked manually, by an automated passenger counter (APC), or through smart fare media.	It is prudent to set a unique performance target for each major transfer point. The targets themselves depend on a variety of factors such as the proximity of points of interest and other land use factors, and the number of connecting routes and transportation modes.	Related to ridership and connectivity. The higher the passenger activity at transfer points, the higher the ridership and the better the connectivity.	Provides insight into the transfer rate and into the effectiveness of each particular transfer point. The greater the number of connecting services and modes, the higher the importance of the transfer point. Is also a product of the

Objective	Data collection needs	How to set performance targets	How it relates to achievement of goals	Importance
				efficiency of transfer in terms of average passenger wait time.
Optimize spare ratio	The number of vehicles in operation at peak service can be provided by scheduling or the CAD/AVL system, and management or maintenance have a list of the total number of vehicles in the fleet.	One systemwide spare ratio target is sufficient. The spare ratio is usually tracked over a longer period of time (year-to-year for instance) and is often inversely proportional to the size of the fleet. That is, the larger the fleet the smaller the spare ratio target should be, and vice versa.	Related to utilization, cost optimization, and safety. The spare ratio should not be too high or too low, such that costs are optimized and road calls and deadhead time may be minimized, and to ensure vehicles are safe for deployment.	An indicator of the efficiency of maintenance practices, and of the ability for the transit agency to respond to out-of-the-ordinary circumstances (road calls, etc.).
Decrease incident rate	An incident may be defined as an out-of-the-ordinary unwanted event such as an accident, near miss, mechanical breakdown, or passenger emergency. These are tracked manually by operations or maintenance, depending on the incident.	One systemwide performance target may be set, which is ideally further broken down into measures such as accident rates and mean distance between failure. Targets are often expressed in terms of incidents per 100,000 miles.	Related to safety and cost optimization. The lower the accident rate, the safer the operations, and the fewer expenses are needed to rectify incidents.	High incident rates may be an indicator of unsafe driver behavior, impractical routing, and/or ineffective maintenance practices. If any of these issues are present, they should be corrected as soon as possible.

The list above is not exhaustive but it is a good summary of the key objectives spanning the seven measurable goals described above. For additional clarity, the relationship between the goals and objectives is summarized in the following table –

Table 2: PACTS goals and the related agency objectives

PACTS Goals	Related Agency Objectives
Increase ridership	- Increase boardings per service hour - Decrease cost per trip - Optimize total cycle time - Increase passengers per capita - Optimize passenger activity at transfer points
Decrease travel time	- Optimize total cycle time - Improve on-time performance

	-	Increase miles per gallon (or gallons per hour)
Optimize costs	- - - - - - -	Decrease cost per revenue hour/revenue mile Increase farebox recovery ratio Decrease operating cost per vehicle-hour Decrease percent deadhead miles Minimize spare ratio Decrease chargeable accidents rate Minimize onboard incidents
Increase utilization	- - -	Increase boardings per service hour/mile Increase farebox recovery ratio Optimize spare ratio
Reduce emissions	- - -	Increase passengers per capita Increase miles per gallon (or gallons per hour) Decrease percent deadhead miles
Improve safety	- - -	Increase passengers per capita Optimize spare ratio Decrease incident rate
Improve connectivity	- -	Improve on-time performance Optimize passenger activity at transfer points

As desired, and as data capabilities permit, transit agencies may choose to track additional performance measures. Another common performance measure is the average fare per passenger, which provides insight into the utilization of different types of fare media. Average speed is another performance measure, which acts as an indicator of travel or trip time with the added benefit that it can be used to determine more easily if a route is getting slower over the years.

Measurable goals and objectives across the services

The PACTS member transit agencies must appreciate when setting its objectives and performance targets that certain objectives are complementary while others are contradictory. Operating cost per vehicle hour and cost per trip are complementary, in that by cutting costs, improvement can be made with respect to both of these objectives. Boardings per service hour and total cycle time can be contradictory, in that by improving routing and marketing, boardings per service hour increases but so does dwell time and, in turn, total cycle time increases. It is important that future transit projects best balance achievement across all goals and objectives. If certain service updates are detrimental to certain objectives, as would be the case for example when expanded service in rural areas results in a lower average boardings per service hour, measures must be taken to compensate in other ways. Bearing this in mind, it is generally preferable for agencies to fold in multiple initiatives within a single larger project. Not only does this help ensure improvements can be made against all goals and objectives, but it simplifies the marketing and communication needs and allows each agency to more effectively communicate how the project contributes to the local and regional vision. These ideas are explored further in the implementation plan in a later task.

The relative importance of one objective to another can vary from agency to agency depending on a variety of factors such as service area population, land use, service characteristics, and current performance against each objective. They can also vary

Revised 12-7-17 SMC

depending on how each agency, and PACTS, aligns the objectives with the Federal Transit Administration's performance-based planning and programming goals, and asset management responsibilities. Moreover, the relative importance of each objective can vary within each agency depending on the type of service. It can also change over time. An overview of some of these variances is as follows –

- Greater Portland METRO: performance targets may be set and tracked differently between the BREEZ express service, routes that leave the peninsula (for example, route 7), and routes that remain within the peninsula (for example, route 1).

- South Portland Bus Service: the routes are similar enough that performance targets may be set and tracked similarly for each route.

- Biddeford-Saco-Old Orchard Beach Transit: performance targets may be set and tracked differently for the local bus, the express routes, the Portland Intercity route, and the trolley.

- Casco Bay Island Transit District: performance targets may be set and tracked differently for the commuter service to Peaks Island, the commuter service to other islands, and the scenic cruises.

- The Amtrak Downeaster: The Downeaster travels between , Brunswick, Maine to Boston, Massachusetts. NNEPRA has developed many performance targets by train, by route, by station, etc. unique to the passenger rail service provided..

- Regional Transportation Program: performance targets may be set and tracked differently for ADA paratransit, on-demand services, and the Lakes Region Explorer.

- York County Community Action Corporation: performance targets may be set and tracked differently for ADA paratransit, on-demand services, and the intercommunity routes (Wave, Orange Line, etc.).

To summarize, it is recommended that each transit agency set its own objectives and performance measures keeping these considerations in mind. One final consideration is the project prioritization criteria described in Task 10. The PACTS member agencies should consider how each of these goals and objectives relates to the prioritization criteria, and it would be in their best interest to emphasize performance targets related to the measures with the biggest impact in the prioritization framework. Doing so would give each agency the best chance of having their projects score well in the framework, thereby increasing the likelihood that their projects will receive high priority for funding.

Moving forward

The needs assessment and recommendations of the RTDP will consider the high-level goals from Destination 2040 and the other planning studies previously summarized in Task 4, as well as the seven measurable goals discussed above:

- Increase ridership
- Decrease travel time

Revised 12-7-17 SMC

- Optimize costs
- Increase utilization
- Reduce emissions
- Improve safety
- Improve connectivity

As these goals are specific, practical, and operational, and are inherently related to the high-level goals previously developed in other studies, meeting these seven goals will be the focus for building out the needs assessment and recommendations. Each goal represents a change which can reasonably be achieved in the six-year time horizon of the RTDP. These goals are also relevant over the long term, although for a long-range transit development plan it would be prudent for PACTS to expand this list and include additional goals related to land use and economic development, which are feasible in the long-term but difficult to measure progress against in the short-term.

It is recommended that each PACTS member agency engrain the transit agency objectives discussed above into its DNA. Before setting performance targets and prior to the implementation of the full prioritization framework, it is important to understand current performance against each of these objectives and appreciate the relevance of each with respect to improving transit in Southern Maine. Then, each transit agency will have a vision for how to fulfill its objectives and meet its targets, and will have a good understanding of the steps to take to best improve its service. It is the intention that the first two years of the RTDP will be a "feeling out" process whereby the transit agencies become familiar with the objectives and comfortable with the prioritization framework, and they set their initial performance targets. Then, throughout the remaining four years of the RTDP as new (and state-of-good-repair) transit projects are implemented, agencies should be able to observe improvements against each objective, and adjust performance targets and priorities as required to ensure that future projects bring the greatest transit benefits throughout Southern Maine.