

DRAFT TRANSIT BENCHMARKS AND MONITORING PROGRAM MEMORANDUM

Date: January 29, 2020 Project #: 23514.0
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Project: Coos County Transit Master Plan
Subject: Final Memorandum #3: Transit Benchmarks and Monitoring Program Memorandum (Subtask 2.3)

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INTRODUCTION

This memorandum reviews existing transit data and presents draft evaluation criteria as well as draft performance measures and transit benchmarks for the Coos County Area Transit (CCAT) Transit Master Plan (TMP). The draft evaluation criteria will be used to compare service alternatives as part of the TMP and are based on the goals and objectives outlined in Draft Memo #2: Transit Goals, Policies, and Practices, as well as regional, state, and federal plans. Potential evaluation criteria consider connections to land use, transit markets served, access for transportation-disadvantaged populations, fare recovery potential, and number of potential users served.

The second half of this memorandum presents the draft performance measures and transit benchmarks which could be used to monitor the CCAT's performance beyond development and implementation of the TMP. The benchmarks identified in this memo consider the goals and objectives outlined in Draft Memo #2: Transit Goals, Policies, and Practices as well as ODOT, Coos County, and national best practices. Benchmarks relate to system-wide efficiency and effectiveness, and consider existing and future data availability, as well as the recommendations and alternatives identified in future Memo #5: Future Service Opportunities.

Background information can be found in Memo #1: Existing Conditions.

This framework will be refined and supplemented towards the end of the plan development process and will inform a performance monitoring program for CCAT that will be incorporated into the TMP.

RECOMMENDED ALTERNATIVES EVALUATION CRITERIA

Table 1 describes the recommended evaluation criteria and provides notes on the development and use of the criteria. Criteria are generally categorized according to goal areas developed in *Draft Memo#2: Transit Goals, Policies, and Practices*. The evaluation criteria will be used to assess the potential costs and tradeoffs, as well as categorize, and prioritize service opportunities. For example, service alternatives that require additional buses and higher capital costs may be cost-prohibitive to implement in the short-term, while service alternatives that do not require additional buses could be implemented with no capital costs.

Note that several evaluation criteria have the potential to conflict with each other. For example, consolidating stops on a transit route may improve travel time but decrease the total population, employment, or transit-disadvantaged population served within ¼ mile of bus stops. Adding service hours could provide increased ridership but may not be at the same rides per hour efficiency.

Table 1: Proposed Evaluation Criteria

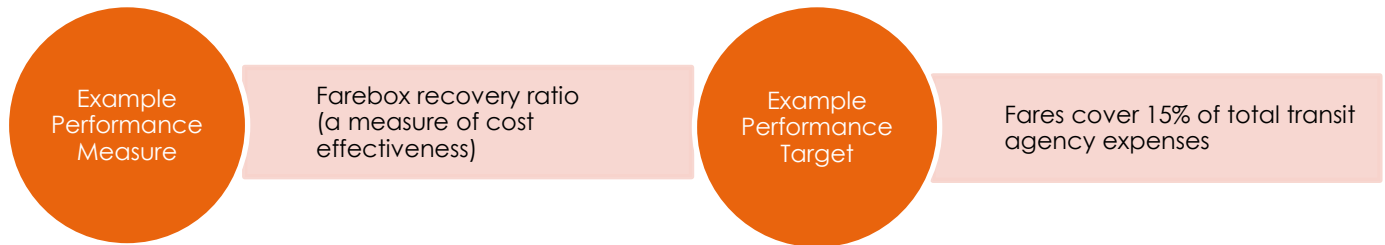
Evaluation Criteria	Notes
Goal 1: Customer-Focused Services	
Ridership Potential	Total ridership potential from Transit Cooperative Research Program (TCRP) methodologies, existing ridership compared to population/employment near stops, etc.
Service Hours	Change in number of service hours
Rides per Hour	Cost-efficiency measure comparing potential ridership to service hours provided
Service Frequency	Change in service frequency (can be further distinguished by frequency during peak periods vs. off-peak)
Service Span	Change in number of hours per weekday and weekend day service is provided
Travel Time	Evaluates travel time impacts to existing service and travel time for new services
Stakeholder Support	Considers support and priorities of riders, community members, and other stakeholders
Goal 2: Accessibility and Connectivity	
Population within ¼ Mile of Transit Route or Service	Measures accessibility to transit for the general population and serves as a proxy for ridership
Employees within ¼ Mile of Transit Route or Service	Measures transit accessibility to jobs and serves as a proxy for ridership
Transportation-Disadvantaged Populations within ¼ Mile of Transit Route or Service	Measures transit accessibility for transportation-disadvantaged populations
Goal 3: Coordination	
Connections to Other Routes/Providers	Evaluates how well an alternative is integrated with other routes and mobility services or if the alternative represents a change in connectivity to other transit options
Goal 4: Health and Sustainability	
Access to Health-Supporting Destinations	Evaluates access or change in access to grocery stores, parks, community spaces, health care, and social services
Cost per Ride	Evaluates cost-efficiency of system or alternative
Total Capital Costs	Provides capital costs needed to start service alternative
Total Annual Operating Costs	Provides change in operating costs to maintain service alternative

WHAT ARE PERFORMANCE MEASURES?

Performance measures help transit providers monitor the extent to which transit services are embodying their vision and achieving their goals. It is also a valuable tool for ongoing monitoring and management of all aspects of transit service delivery.

A **performance measure** is an indicator of how a particular aspect of transit service is being provided.

A **performance target** is a numeric threshold that defines whether or not an aspect of transit service is being provided at the desired level. Targets can be established based on goals, current performance, industry standards, and/or peer data. Reliable and credible performance measures must be objective and rely on high-quality data.



Performance measures and targets used in the Coos County TMP evaluate the transit system and should be closely linked to the goals and policies identified in *Draft Memo#2: Transit Goals, Policies, and Practices* and include in the callout box below.

Where applicable, CCAT should use available data and analytical methodologies to evaluate how CCAT is doing relative to achieving those goals and, most importantly, use the data in a comprehensive way to understand where and how to improve. For example, as “improving access and connections within and between communities in the CCAT service area” is a stated objective as part of Goal 2, CCAT should work collaboratively with neighboring transit providers and monitor boarding and alighting data to determine the potential for increase collaboration and broader network connectivity for CCAT users.

Transit Cooperative Research Program (TCRP) Report 88, *A Guidebook for Developing a Transit Performance-Measurement System*, identifies ten categories of performance measures as shown in the callout box below. *TCRP Report 88* identifies and provides detailed summaries for over 400 transit performance measures within these categories. A series of question-and-answer menus helps providers quickly identify measures that relate to their goals and objectives.

The performance measures suggested in this memorandum will address multiple facets of CCAT transit service and operations, including measures that are of use in statewide assessment and monitoring, use data that transit providers already report to the NTD, and represent best practices as described in *TCRP Report 88*.

CCAT GOAL AREAS

- Goal Area 1: Customer-Focused Services**
 - Provide services that are safe, comfortable, and convenient for all riders
- Goal Area 2: Accessibility & Connectivity**
 - Improve access and connections within and between communities in the CCAT service area
- Goal Area 3: Coordination**
 - Collaborate with public and private partners to maximize services
- Goal Area 4: Health & Sustainability**
 - Foster public, environmental, and fiscal health through transit investments.

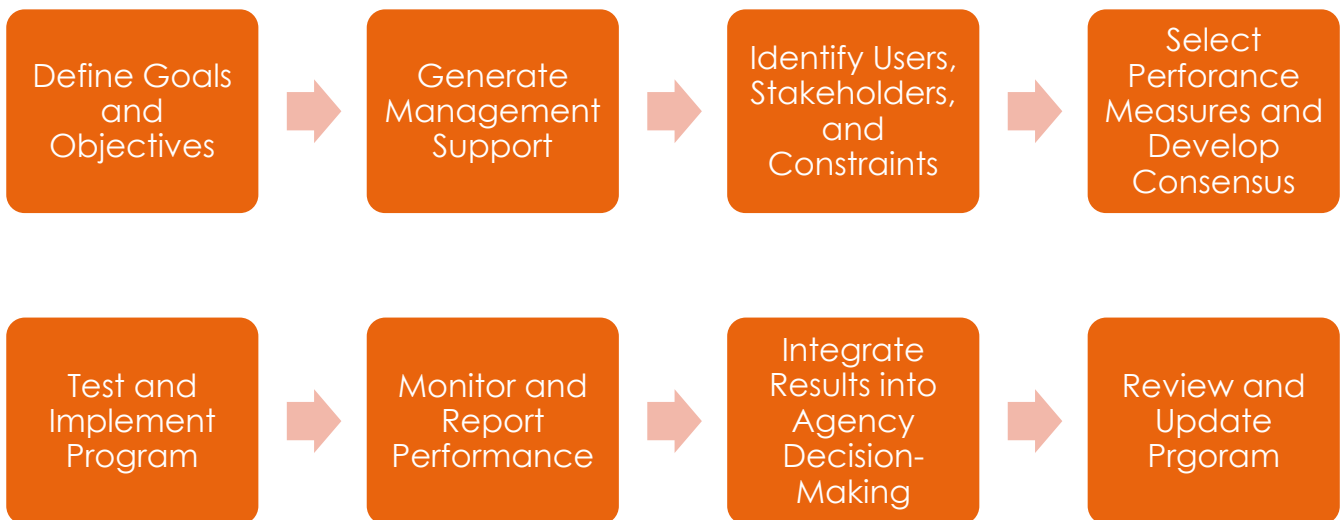
WHAT IS A PERFORMANCE MEASURE PROGRAM?

A **performance measurement program** is based on an adopted set of performance measures and targets and includes processes for selecting, calculating, evaluating, and refining those measures and targets. It also includes a process for communicating the results of performance assessments, and thereby facilitates tracking changes in performance over time.

A performance measurement program must reflect multiple aspects of transit performance, but the number of measures included should not be overwhelmingly high. *TCRP Report 88* indicates that the characteristics of an effective performance measurement system include the following:

- Stakeholder acceptance
- Linkage to agency and community goals
- Clarity
- Reliability and credibility
- Appropriate variety of measures
- Appropriate number of measures
- Appropriate level of detail
- Flexibility
- Realism of goals and targets
- Timeliness
- Integration into provider decision-making

The process for developing a performance measurement program is shown in the flowchart below:



FOCUS AREAS

The performance measures listed in Table 2 are proposed to be used to monitor system performance over time and are directly linked to the goals and policies identified in *Draft Memo#2: Transit Goals, Policies, and Practices*. Performance measures are most effective when supported by readily available data. As such, the focus areas shown in Table 2 are outcome measures which describe the performance given a set of inputs. The measures identified for each focus areas directly relate to advancing CCAT's goals and policies related to customer focused services that are safe, well-coordinated, and sustainable. Each focus area is described below as it relates to the TMP goals.

- **Safety and Security:** Measures supplement perceived service quality measures by providing insight into perceived and real safety and security of the transit service (i.e., total number of accidents).
 - **Perceived Service Quality:** Perceived service quality measures complement cost-efficiency measures by evaluating how passengers perceive the effectiveness of the transit service (i.e., number of missed timed transfers).
 - **Service Utilization:** Service utilization measures evaluate the gross outcome to the service (i.e., total annual passenger trips).
 - **Resource Utilization:** Resource utilization measures evaluate how effectively the agency's resources are being used (i.e., hours per vehicle).
- Maintenance Administration:** Maintenance administration measures focus on the agency's vehicle fleet and maintenance functions (i.e., miles between break downs).
- **Cost-Efficiency:** Cost-efficiency measures evaluate how efficiently service is provided, irrespective of whether the specific measure is meeting passenger needs (i.e., cost per mile).
 - **Cost-Effectiveness:** Cost-effective measures compare the cost to the outcomes of the transit service (i.e., cost per passenger trip).

RECOMMENDED PERFORMANCE MEASURES

The performance measures associated with each focus area in Table 2 are tailored to small transit agencies that serve a large rural area and operate within the constraints of a relatively small operating budget. The availability and reliability of data was a consideration in recommending these implementable performance measures. Each performance measure in Table 2 is either available through the National Transit Database (NTD) or is feasible for CCAT to track with internal data.

BENCHMARK TYPE

The benchmark type associated with each performance measure is dependent on the available data through the NTD. In order to measure performance within any given focus area, CCAT should compare performance against internal and/or external targets. A trend analysis provides the agency a means to benchmark by evaluating past performance, while a peer comparison enables the agency to compare relative to similar transit agencies. Peer comparison analyses incorporate context into benchmarking and performance measures.

All performance measures can be evaluated through a trend analysis. However, performance measures associated with maintenance administration, perceived service quality, safety and security, and community support can only be evaluated through trend analysis.

Table 2: Proposed Framework for Performance Monitoring

Focus Area	Goal Area	Performance Measure	Current Performance (F17-18)	Performance Target	Benchmark Type
Perceived Service Quality	1,2,3	# of missed connections with coordinated transit systems	TBD	Reduce	Trend Analysis
Safety and Security	1,4	Total Reportable Incidents	TBD	Reduce	Trend Analysis
		Vehicle Miles between Incidents	TBD	Increase	Trend Analysis
		Total Crashes (Fatalities + Injuries)	TBD	Reduce	Trend Analysis
		Vehicle Miles between Crashes	TBD	Increase	Trend Analysis
Service Utilization	1,2,4	Total Passenger Trips	45,785	Increase	Trend Analysis and/or Peer Comparison
		Annual Vehicle Revenue Miles	216,575	Increase	Trend Analysis and/or Peer Comparison
		Annual Vehicle Revenue Hours	17,356	Increase	Trend Analysis and/or Peer Comparison
Resource Utilization	4	Vehicle Miles per Vehicle	14,438	Increase	Trend Analysis and/or Peer Comparison
		Vehicle Hours per Vehicle	1,157	Increase	Trend Analysis and/or Peer Comparison
Maintenance Administration	1	Vehicle Miles between Failures	TBD	Increase	Trend Analysis
		Maintenance cost as a percentage of operating costs	N/A	Reduce	Trend Analysis
Cost Efficiency	4	Cost per Vehicle Mile	\$3.59	Reduce	Trend Analysis and/or Peer Comparison
		Cost per Vehicle Hour	\$44.74	Reduce	Trend Analysis and/or Peer Comparison
Cost Effectiveness	4	Farebox Recovery (%)	7.8%	Increase	Trend Analysis and/or Peer Comparison
		Cost per Passenger Trip	\$16.96	Reduce	Trend Analysis and/or Peer Comparison

PEER COMPARISON

While each transit provider has unique service area and operating characteristics, comparing similar transit providers can help gauge CCAT's performance. Transit agencies that receive federal funding are required to report information about service miles, service hours, and ridership to the National Transit Database (NTD). The most recent year of available NTD data, 2017, was obtained for CCAT and other small coastal transit providers in Oregon, including Curry County Public Transit Service District, Tillamook County Transportation District, and Lincoln County Transportation Service District. Table 3, Exhibit 1, and Exhibit 2 show the comparison results. As shown, CCAT performs better than peer providers in one-way passenger trips per vehicle revenue mile and vehicle revenue hours higher than its peers provide.

Table 3: Transit Provider Comparison

Data	Coos County Area Transit	Curry County Public Transit	Tillamook County Transit District	Lincoln County Transit District
Annual Vehicle Revenue Miles	216,575	244,699	908,352	534,341
Annual Vehicle Revenue Hours	17,356	11,184	36,297	31,165
One-Way Passenger Trips	48,954	30,126	145,135	317,291

Exhibit 1: One-Way Passenger Trips per Vehicle Revenue Mile

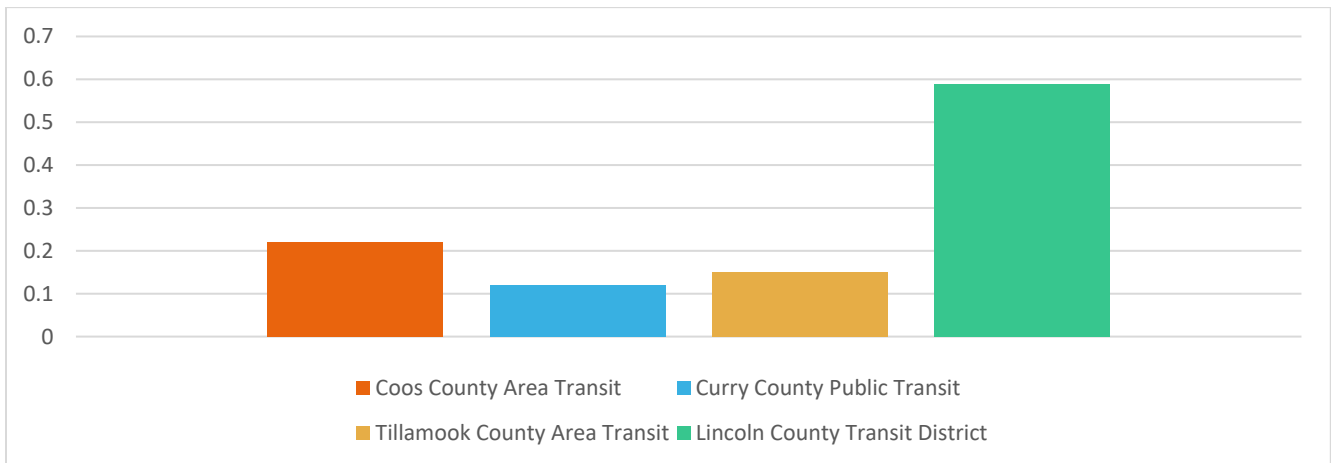
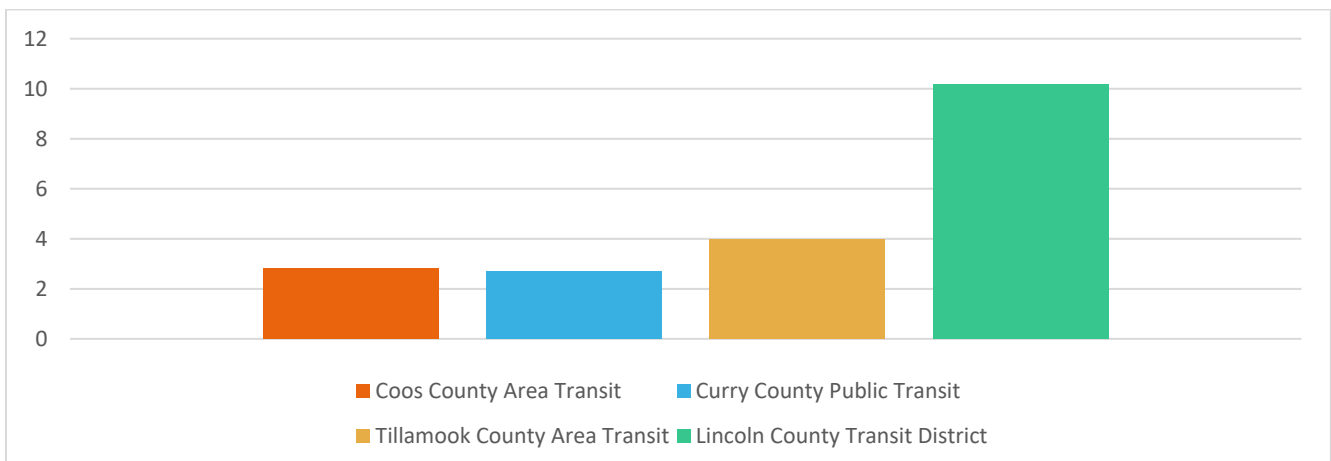


Exhibit 2: One-Way Passenger Trips per Vehicle Revenue Hour



NEXT STEPS

The Project Management Team (PMT) and Advisory Committee (AC) will review the evaluation criteria and provide comments and revisions. Alternatives developed as part of this planning project and identified in *Memorandum #5: Future Service Opportunities* will be evaluated based on the revised evaluation criteria to determine prioritization of service improvements. The proposed performance monitoring framework will be refined and supplemented towards the end of the plan development and result in a performance monitoring program for CCAT that will be incorporated into the TMP