SAN DIEGO COUNTY
TAXPAYERS
ASSOCIATION

KEY PERFORMANCE INDICATORS SHEET

COMMUTER RAIL
Effective May 1st, 2019 – Refresh in 2020

Good	Excellent	Outstanding
"Good stewards of taxpayer dollars"	"Excellent stewards of taxpayer dollars"	"Outstanding stewards of taxpayer dollars"
0-6	7-12	13-18

Master Formula	$Score = X1 + X2 + X3$	
Intermediate Outcome Category	**(X1)** = Contractual or Adjusted on-time performance at all U.S. agencies for which the contractor provides or has provided operations and maintenance services in commuter rail for at least one full year over the last three years	**Requirement**: Weighted average of agency goals
	(X2) = Customer complaints, weighted against the number of revenue hours operated, at all U.S. agencies for which the contractor provides or has provides operations and maintenance services in commuter rail for at least one full year over the last three years	**Requirement**: Weighted average of agency goals
	(X3) = Safety Incidents, weighted against the number of revenue hours operated, at all U.S. agencies for which the contractor provides or has provided operations and maintenance services in commuter rail for at least one full year over the last three years	**Requirement**: Weighted average of agency goals

Data Sources	Variable	Public Source
	$X1$	Agency Performance Reports or NTD
	$X2$	Agency Performance Reports or NTD
	$X3$	Agency Performance Reports or NTD

Scoring Rules	Variable $X1$: -1 = Greater than (ten percent of difference from 100%) below category requirement in a year 0 = Less than category requirement in a year

	+1 = Meets requirement but does not exceed (ten percent of difference from 100%) above requirement in a year +2 = Greater than (ten percent of difference from 100%) above requirement in a year

	Variables $X2$ & $X3$: -1 = Greater than ten percent above category requirement in a year 0 = Greater than category requirement in a year +1 = Meets requirement but does not fall below ten percent above requirement in a year +2 = Greater than ten percent below requirement in a year
Timing Rules	1. Data collected at the end of each full year of operations 2. Metrics revised every two years to reflect local trends

SAN DIEGO COUNTY TAXPAYERS ASSOCIATION

KEY PERFORMANCE INDICATORS FOR COMMUTER RAIL
April 2019

> **Commuter Rail**: The National Transit Database defines commuter rail as "an electric or diesel propelled railway for urban passenger train service consisting of local travel which operates between a central city and outlying areas. Service must be operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas (UZAs), or between urbanized areas and outlying areas. Commuter rail is generally characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices, relatively long distance between stops, and only 1-2 stations in the central business district."

Background

SDCTA's Working Group on Metrics to Define Effective Performance in Commuter Rail

Transportation agencies in the County of San Diego spent close to $384 million dollars to provide public transportation services in FY 2016-17.[1,2] Then, the San Diego County Taxpayers Association (SDCTA) established a public working group with regional and statewide transit agencies and commuter rail service providers as well as other transportation experts to develop metrics that accurately and meaningfully assess the performance of contractors who provide services in commuter rail. The working group's goal was to develop key performance indicators that would assist transit agencies, who receive substantial taxpayer subsidies, in finding the most effective contractors, and that would highlight good performing contractors in their search for securing contracts. In March 2019, SDCTA revised its metrics to reflect local trends. A summary of those adjustments and the rationale can be found in Appendix A.

Measuring Performance for Commuter Rail

Urban Integrated National Transit Database

The National Transit Database (NTD) is the primary source for transit statistics and information in the United States, as recipients of Federal Transit Administration funds are required to report data to the NTD. Data from the NTD can help transit agencies analyze trends and performance over time with its extensive data on financials, assets, and operations of the nation's transit systems. This data includes vehicle inventories, agency funding sources, safety events, and service measurement information.

Transit districts are evaluated with different performance standards across the country. Trends emerge, however, through data reported by many major transit agencies. These agencies commonly focus on metrics that fall into a few categories described by the Florida Department of

---

[1] "Adopted Fiscal Year 2018 Budget." *Metropolitan Transit System*. May 2017.
www.sdmts.com/sites/default/files/attachments/fy18_budget_book_online.pdf.
[2] Adopted Fiscal Year 2018 Operating Budget and FY2018-FY2022 Capital Improvement Program." *North County Transit District*. June 15, 2017.
lfportal.nctd.org/WebLink/0/edoc/88598/FY2018%20Operating%20Budget%20and%20Capital%20Improvement%20Program.pdf.

Transportation, who developed a database that would provide for easy peer comparisons and trend analysis of NTD data. The Urban Integrated National Transit Database (Urban iNTD) separates data into General Performance Indicators, Effectiveness Measures, and Efficiency Measures.

General Performance Indicators describe system information including the area and population served, service provided, number of employees, revenues, expenses, and taxpayer contributions. Effectiveness Measures evaluate service supply, service consumption, quality of service, and availability. Finally, Efficiency Measures evaluate cost efficiency, operating ratios, vehicle utilization, labor productivity, energy utilization, and customer fares.

Benchmarking Transit Agency Performance Metrics

In July 2014, the Florida Department of Transportation (FDOT) conducted a literature review and compiled a report titled *Best Practices in Evaluating Transit Performance*. As part of this report, the FDOT suggested possible benchmarks against which to evaluate performance standards. They include the following:

- "Comparison to the annual average: average value for each measure is determined annually, and the routes that fall into the lowest groups for each measure are identified for further action
- Comparison to a baseline: value for each measure is compared to the average value for the measure in the first year that the performance-measurement system was implemented
- Trend analysis: set the standard based on the previous year's performance measure value
    - Self-identified standards: transit agency management in consultation with the agency's governing body, sets targets based on a combination of current agency performance, professional judgment, and agency goals
    - Comparison to typical industry standards: standards are pulled out from other agencies
- Comparison to peer systems: agency identifies other agencies with similar conditions and determines how well those agencies are performing in the measurement categories."[3]

---

[3] *Best Practices in Evaluating Transit Performance.* Florida Department of Transportation, 2014. P. 50. www.fdot.gov/transit/Pages/BestPracticesinEvaluatingTransitPerformanceFinalReport.pdf.

San Diego County Taxpayers Association Key Performance Indicators

When developing performance metrics for commuter rail, SDCTA focused on those metrics that are, for the most part, influenced by the actions of the private contractor. Additionally, these metrics highlight issues important to taxpayers, who both subsidize transit agencies and purchase transit services. Based on the working group's recommendation, SDCTA's Key Performance Indicators for Commuter Rail are as follows:

1. **Contractual or Adjusted On-Time Performance** over the last three years at all agencies for which commuter rail service is provided: This metric captures the ability of a commuter rail service to adhere to its adopted schedule—a measure of the effectiveness of the system. On-time performance can be affected by factors that are at least in part under the contractor's control over operations and maintenance, such as mechanical or other infrastructure failures. Delays in service can have a significant impact on cost to the transit agency. If an agency has lower on-time performance over several years, this could indicate a variety of issues with the contractor's operations and maintenance of the trains. Ideally, agencies would track and provide their adjusted on-time performance, which excludes incidents out of the contractor's control when measuring on-time performance, and provides a better estimate of the contractor's capacity.

2. **Customer Complaints** weighted against the number of revenue hours operated, over the last three years at all agencies for which commuter rail service is provided: This metric captures customer satisfaction with the rail service. A consistently high number of complaints could indicate needed improvement in effectiveness and efficiency of the service.

3. **Safety Incidents** weighted against the number of revenue hours operated, over the last three years at all agencies for which commuter rail service is provided: This metric captures incidents of collision, derailment, employee or passenger injuries, or other accidents reported by a rail agency each month. Contractors whose operations result in a trend of safety incidents may have room for improvement.

Data for the key performance indicators are collected from all agencies for which the contractor provided service in commuter rail over the last three years in order to capture performance as a whole. In the case that SDCTA is unable to collect that data, it will use data extracted from the National Transit Database whenever available. If the data is unavailable through that source, the agency will be excluded from the calculation. Each of these variables is benchmarked against the agency's contractual goal for that variable. If the agency is unable to report document, nonzero goals for Customer Complaints and/or Safety Incident, the agency will be excluded from the calculation. For each year that a contractor meets the agency goal, a point is earned. An extra point is earned if the contractor performed better the agency's goal by greater than ten percent that year, and one point is deducted if the contractor performed greater than ten percent below the agency goal that year.

Example Agency Performance Evaluation

For example, suppose Rail Contractor provides commuter rail operations and maintenance services for Agency A and Agency B throughout the United States. Rail Contractor's performance over the last three years at these two agencies is summarized in Tables 1-3 below.

Table 1: Rail Contractor's Agency Performance in 2016

	Agency A	Agency B	Weighted Average
Contractual On-Time Performance	99.3%	97.89%	98.8%
Customer Complaints per 100,000 revenue hours	74	92.2	80.1
Safety Incidents per 100,000 revenue hours	2.8	2.21	2.6
2016 Revenue Hours	67,400	34,680	

Table 2: Rail Contractor's Agency Performance in 2017

	Agency A	Agency B	Weighted Average
Contractual On-Time Performance	97.85%	99%	99.24%
Customer Complaints per 100,000 revenue hours	73.3	49	65
Safety Incidents per 100,000 revenue hours	9.4	17	12
2017 Revenue Hours	67,400	34,680	

Table 3: Rail Contractor's Agency Performance in 2018

	Agency A	Agency B	Weighted Average
Contractual On-Time Performance	97.36%	96.75%	97.15%
Customer Complaints per 100,000 revenue hours	38.52	43	40
Safety Incidents per 100,000 revenue hours	3.1	0.8	2.3
2018 Revenue Hours	67,400	34,680	

Agency A has the following stated annual goals: contractual on-time performance of 95%, 8 customer complaints per 100,000 revenue hours, and 1 safety incident per 100,000 revenue hours. Agency B has the following stated annual goals: contractual on-time performance of 90%, 5

customer complaints per 100,000 revenue hours, and 0.8 safety incidents per 100,000 revenue hours.

To arrive at yearly data, contractual on-time performance & on-time performance goals are averaged, and safety incidents & safety incidents goals and customer complaints & customer complaints goals were added. This produces an on-time performance monthly average to be used for the year of interest and total sum counts for safety incidents and customer complaints data for the year of interest. All metrics were weighted by revenue hours to attain the weighted average for each. This average incorporates all agencies with complete, documented data.

As such, SDCTA's performance requirements would be as follows:

Contractual On-Time Performance
Calculated as: = 10%*(100% - Weighted Average of Agencies with Adjusted OTP Only)
Agency A total revenue hours over one-year period: 67,400
Agency B total revenue hours over one-year period: 34,680
Weighted average goal of **97% contractual on-time performance**
10%*(100% - 97%) = 0.30%

Customer Complaints
Calculated as:
Weighted average goal of **75 per 100,000 revenue hours**
10% of 75.0 = 7.5 complaints per 100,000 revenue hours

Safety Incidents
Weighted average goal of **8.0 safety incidents per 100,000 revenue hours**
10% of 8.0 = 0.4 safety incidents per 100,000 revenue hours

Rail Contractor's performance is then evaluated against SDCTA's key performance indictor requirements as follows.

Table 4: Rail Contractor's KPI Performance 2016

	2016	Requirement	Requirement Satisfied?	Points Earned
Contractual On-Time Performance	98.8%	97%	Yes, by greater than 10%	+2
Customer Complaints	80.1	75.0	Yes	-1
Safety Incidents	2.6	8.0	Yes	+1

Table 5: Rail Contractor's KPI Performance 2017

	2017	Requirement	Requirement Satisfied?	Points Earned
Contractual On-Time Performance	99.24%	97%	Yes, by greater than 10%	+2
Customer Complaints	65	75.0	Yes	+1
Safety Incidents	12	8.0	Yes, by greater than 10%	-2

Table 6: Rail Contractor's KPI Performance 2018

	2018	Requirement	Requirement Satisfied?	Points Earned
Contractual On-Time Performance	97.15%	97%	Yes	+1
Customer Complaints	40	75.0	Yes, by greater than 10%	+2
Safety Incidents	2.3	8.0	Yes	+1

Rail Contractor's performance earned 7 total points, as it met category requirements in almost every category every year, and at times exceeded category requirements. This would earn Rail Contractor recognition by the Association as an Excellent Steward of Taxpayer Dollars.

APPENDIX A

<u>Considerations for 2019 Metrics Update</u>

- At the beginning of the certification process, the contracted agency being studied must provide a comprehensive list of all agencies for which it provides operations and maintenance services, as well as the correct point of contact to communicate with during the process.
- Scoring margin percentages and scoring thresholds were revised and adjusted in 2019 to account for local trends, size of local agencies, and ambiguous metrics.
- Agencies may report goals for Customer Complaints and/or Safety Incidents to be zero customer complaints per month and zero safety incidents per month respectively. Only agencies with documented, nonzero goals will be calculated. For goals to be classified as documented, they must be received from the agency itself or extracted from the agency's public available documents on its website. This controls for agencies that set goals that are not supported by research and experience and that therefore severely underestimate their actuals.
- Staff may use inverse-variance weighting or other statistical methods to minimize the potential high variance of the Customer Complaints, Safety Incidents, Revenue Hours, Monthly Ridership, and Average Weekday Riders variables.
- Staff may use statistical methods such as a sensitivity analysis or a two-sample tests to verify and revise the validity of the model and calculations.
- Staff will keep records of the information procurement progress and of all methods used at any point during the certification process.
- Information extracted from the contracted agency being evaluated will only be considered for the purpose of verifying and cross-referencing the information provided by its agencies during this process only. This information will not compromise the integrity of the study, but point at knowledge gaps to promote data collection improvements.
- For optimal accuracy, agencies will have a designated period of time of at least one week before the end of the certification process in which they have the opportunity to verify the pertinent data provided and obtained. The contracted agency acknowledges the risk of an agency being unable to verify the data provided.
- At the end of the certification process, Staff will provide an executive summary that indicated the methodology and agencies used as well as data deficiencies that the contracted agency should flag for performance improvement.