

Memo

TO	Carol Ketcherside	DATE	December 30, 2008 (Version 2)
FROM	Yonel Grant	CITY	San Francisco
SUBJECT	18 Month Review – Service Efficiency and Effectiveness Study Phase II	CC	Bryan Jungwirth

This technical memorandum constitutes Booz Allen Hamilton's 18-month evaluation of the Service Efficiency and Effectiveness Study (SEES) framework implemented in early 2007.

1. INTRODUCTION

Brief Background

- Booz Allen Hamilton consultant team was hired in 2006.
- The Phase I SEES Report was finalized in March 2007.
- The SEES framework was adopted by the Valley Metro/RPTA Board in March 2007.
- SEES performance targets were adopted by the Valley Metro/RPTA Board in June 2007.
- RPTA issued the FY2006-07 Transit Performance Report in January of 2008.
- 18 month evaluation (Phase II) was scheduled for November-December 2008.

Purpose of 18 Month Review

The purpose of the 18 month review is to provide an independent evaluation of the SEES framework implementation, and associated performance measures and processes. The consultant scope is also to provide recommendations for revising or amending specific components of the route and system performance criteria.

Approach

During the course of several days in November 2008, Booz Allen interviewed three RPTA Planning staff and two staff from City of Phoenix Public Transit Department. Booz Allen also conducted telephone interviews with a half dozen RPTA member agencies to solicit feedback on their experiences with the Transit Performance Report (TPR) data reporting and process. Booz Allen also reviewed the draft TPR report and supporting data sheets, as well as early data submittals from the City of Phoenix.

2. FINDINGS

Overall, the implementation of the SEES framework is going well (B+). There have been, and continue to be, some challenges related to communications, technology, data quality, and staffing, but this is to be expected when implementing a new framework such as this for a transit system that is not truly regionalized.

A major success came early when the Valley Metro/RPTA and Valley Metro Rail Boards adopted the recommended performance framework. The two policy boards actively supported RPTA's transit performance reporting goals.

Findings and observations, which are discussed in this section, are grouped as follows:

- Framework adoption
- Target setting and adoption
- Communications with reporting agencies
- Data reporting into regional framework
- Web tool implementation
- Transit Performance Report (TPR)
- Contract negotiations regarding performance reporting
- Route maturation guidelines
- Proposition 400 routes versus other routes
- Reporting transit performance to policy bodies.

Framework Adoption

The framework was successfully adopted in March 2007 by the Valley Metro/RPTA Board and subsequently by the VMR Board (for the rail portion of the SEES).

Target Setting and Adoption

The SEES framework, route, mode and system targets were presented and discussed at TMC, VMOCC, Valley Metro/RPTA Board and VMR Board meetings. Initial Board approval of performance targets occurred in March and April 2007. Following recommendations from rail staff, the Total Rail Boardings target for the first year of operations was reduced from 10,665,000 to 7,827,000. The revised targets were approved by the RPTA and VMR Boards in June 2007.

In November-December 2007, RPTA Planning staff prepared the FY2007 Transit Performance Report using updated performance targets. Financial targets (e.g., operating cost per boarding, operating cost per revenue mile) were increased by the percentage increase in the CPI-U for transportation items. Effectiveness targets were not changed. The targeted annual increase in boardings remained unchanged at 3%. The fixed route farebox recovery ratio target was also held at 25% (the RPTA Board

adopted the 25% farebox recovery ratio target in September 2007 when the regional fare policy recommendations were approved).

RPTA staff commented to Booz Allen Hamilton that the 3% target for annual increases in paratransit ridership is problematic given the growth in operating costs. The source of ridership target was the Financial Plan assumptions that were in place in 2007. RPTA staff desires consistency with the Paratransit Study.

Staff from one of the reporting agencies commented that targets should be revised on a regular basis, to challenge the operating agencies to continuously improve.

For the November-December draft FY2008 TPR, RPTA staff have updated the targets using the same assumptions: CPI-U increases for financial targets; other targets unchanged. In December 2008, RPTA staff uploaded a series of documents to the Valley Metro website, including the draft TPR, supporting modal summaries, and a master table of targets.

Communications with Reporting Agencies

Communications to reporting agencies on TPR planning and reporting occurs mainly through the monthly VMOCC process. In addition, RPTA sent notification to member agencies by e-mail in September 2008 about the October deadline for annual transit performance reporting. The notification included a spreadsheet template for reporting agencies to populate as well as a complete list of performance indicator definitions.

The primary challenge for communications with member agencies is the number of agencies involved in the process and the turnover (real and procedural) of member agency staff involved in this process. Two examples are provided:

- The Technical Working Group (TWG) established for the SEES was made up primarily of data practitioners from each agency, who would have the most familiarity with the data and data reporting that would ultimately be required. Not counting RPTA staff, the TWG had 12 reporting agency members. Of these 12, only one person holds the same role now (18 months later). In at least one case, the responsible staff member is no longer with the agency and it appears that the replacement staff person may not have been trained on the reporting requirements.
- Even with several of the larger reporting agencies (e.g., Phoenix, Scottsdale, Tempe), there is turnover in terms of attendance at VMOCC meetings. As a result, the same person does not attend VMOCC meetings each month. Both in-person and telephone interviews with member agencies revealed a significant information gap in the history of the SEES initiative, the rationale

for the regional reporting requirement vis a vis Proposition 400 and the upcoming audit, the need to report performance by route, and the need to flow down reporting requirements to contractors.

A secondary challenge which results from turnover in reporting agency staff is the technical ability to accurately report all of the transit data required for the TPR. For instance, during the review Booz Allen found that Boarding data initially submitted by a new transit analyst at the City of Phoenix was 17.5 percent too low. RPTA staff immediately suspected an error, based on comparisons to prior year results. The error was confirmed and subsequently corrected. In cases where there is turnover among staff responsible for collecting and reporting data, it is critical to provide for training of replacement staff – and if possible, cross-training of other agency staff.

Data Reporting into Regional Framework

Member agencies interviewed for the 18 month review reported that the transition from the old Performance Management Analysis System (PMAS) to the regional Transportation Performance Report (TPR) process was seamless. It is fairly difficult for RPTA Planning staff to spend considerable time auditing data provided by member agencies, and in most cases they do not have access to the source data to be able to audit it. RPTA Planning staff do tally the information provided and compare it to expected levels and prior year results. Questionable numbers typically are subjected to a second opinion and/or are sent back to the reporting agency for correction or explanation. In the current cycle, this occurred with Phoenix ridership data as previously described. Another agency that revised data in response to a question from RPTA Planning staff, suggested that it would be helpful to receive a copy of the revised report before it is forwarded to the VMOCC.

The agencies interviewed reported that they had not used the Operating Cost template distributed during the 2006 SEES. This template provides a method to calculate total operating costs for member agencies, including allocated administrative and overhead costs. However, on careful questioning, the agencies stressed that the reported operating costs include both direct and allocated costs, including contractor costs as well as administrative overhead for the respective cities.

RPTA Planning staff noted that some performance categories needed for the TPR are not available due to large gaps in the data available from contractors. Examples include safety/security, and the maintenance indicator. One agency reports roadcalls in a manner that is consistent with the TPR definition, but manual data manipulation is required to pull those instances from the more broadly defined maintenance service call data that the agency tracks. On-time performance data appears to be fully reported in the detailed tables, but not in the graphics section of the TPR. In at least one case, on-

time performance data is not available for neighborhood shuttles because there is no reporting system in place to capture the data.

Although several agencies said that they are reporting performance data at the route level, RPTA is experiencing some push back from some member agencies for detailed route level performance data.

Web Tool Implementation

In the SEES concept, RPTA would work with member agencies to develop a final reporting format, complete the transition from PMAS (the old performance measurement reporting system), develop a reporting platform, and work with individual members to facilitate the process. The hope was that these activities could occur between April and December of 2007.

Ultimately, this schedule proved to be unrealistic because RPTA engaged a contractor to develop the web-driven, automated data reporting tool. Development took longer than expected but now includes a detailed System Manual and User Manual. As of December 2008 the contractor, Systems Technology Group, Inc. (STG), is still working through minor bugs. Other RPTA Planning priorities also interfered with the schedule.

RPTA decided therefore to pursue two parallel tracks:

- 1) Develop the FY2008 TPR manually, sending spreadsheet templates to all reporting agencies and compiling the report based on the feedback
- 2) Continue development of the automated Performance Planning System with STG, with gradual implementation during calendar year 2009. The intent for the web-based reporting system is to begin quarterly performance reporting in addition to the annual reporting.

RPTA has formed a working group to provide feedback on the STG web tool. As soon as the beta version is ready, members will be able to comment on the input screens. Phoenix has already made a request to enter data by batch file.

Transit Performance Report

The TPR has replaced the old PMAS. The transition occurred in the fall of 2007. The Valley Metro/RPTA Board was pleased with the FY2007 report presented in January 2008.

Booz Allen reviewed the draft FY2008 Transit Performance Report (prepared in December 2008) and provided feedback to RPTA. The report has an appealing layout

and features clear performance updates for system-wide bus, paratransit and vanpool. However, Booz Allen also identified several gaps:

- The presentation of performance indicators does not include all the indicators in the SEES framework. For example, the fixed route system-wide pages lack data on safety/security performance, on-time performance, and mechanical performance.
- The draft TPR also does not contain any route-level data. The SEES framework advocated a comprehensive set of route level indicators as shown below.

Exhibit ES-2
Fixed Route, Route Level Measures

Cost Efficiency/Effectiveness
Farebox Recovery Ratio
Operating Cost per Boarding
Subsidy (Net Opg Cost) per Boarding
Cost per Revenue Mile
Service Effectiveness
Total Boardings
Boardings Avg. Weekday, Sat., Sun.
Boardings per Revenue Mile
Boardings per Revenue Hours (Express Bus)
On-time Performance
Miles between Mechanical Failures

Source: SEES Report, March 2007

It would be cumbersome to provide this much information in the TPR for all routes. However, a summary of the best performing and worst performing routes (e.g., the highest and lowest quartile boardings per revenue mile and subsidy per boarding), and a link to the complete route level data should be additions to the TPR.

Contract Negotiations Regarding Performance Reporting

Since the SEES adoption, there do not appear to have been any changes in contractual requirements for reporting route level data and operating costs by the three primary fixed route bus contractors in the Valley (Veolia, First Transit, MV). In most cases, the contractors derive route level performance from larger samples of data.

As one example, representatives of the City of Phoenix said they were not made aware that their contractors had to report cost per boarding or miles between mechanical failures on a route by route basis. Now that they understood the rationale for the regional reporting requirement, they could begin collecting this data for July 2008 (i.e.,

first quarter of FY2009) so that the FY2009 TPR could include route level performance results.

Route Maturation Guidelines

By December 2008, route maturation guidelines have not specifically been discussed in TMC or VMOCC meetings since the SEES. These are expected to be included in the Short Range Transit Program (SRTP). Generally, the current understanding is that there is a two- year maturation period. However, since neither the TPR nor other processes currently lend themselves to a quarterly comparison of route level performance data, discussion of this topic at the regional level is difficult.

Another agency noted that the TPR does not make it clear whether data for “immature” routes (i.e., those that have been operating for less than two years) are excluded from the performance indicators. That agency went on to make the case that data from immature routes should be excluded from the systemwide data because it is likely to have a negative impact on systemwide performance. Performance of these routes should be reported only at the route level.

The Transit Life Cycle Program (TLCP) provides guidance for Proposition 400 Route implementation and funding, above the original legislation. Given the state of the Arizona and national economies, regional discussions are under way to consider phased route implementations (i.e., SRTP).

Proposition 400 Routes Versus Other Routes

For the 18-month review, the consultant team reviewed annual transit performance data files and confirmed that the transit performance data is available at the route level, including all of the Proposition 400 routes. Each route receiving Proposition 400 funding was identified, however it was not immediately possible for the consultant to know what percentage of the route was funded through Proposition 400 funding.

Reporting Transit Performance to Policy Bodies

The annual TPR is proceeding on schedule, with presentations to the TMC and Board planned for January 2009.

Currently, there is no quarterly regional transit performance reporting. It is expected that regional reporting can begin in the third or fourth quarter of FY09 (i.e., by June 2009), as the web-based data implementation tool is rolled out.

3. RECOMMENDATIONS

Recommendations for the SEES implementation are provided below and organized by the following topics:

- Target setting and adoption
- Communications with reporting agencies
- Web tool implementation
- Transit Performance Report
- Contract negotiations regarding performance reporting
- Proposition 400 routes versus other routes
- Reporting to policy bodies.

Target Setting and Adoption

First, Valley Metro/RPTA is to be commended on the establishment and adoption of performance targets. As the reporting process matures, so too will the process for updating the targets.

The appropriate Board(s) should always be involved in changes to performance targets.

Performance targets can be divided into four groups with respect to how and when they should be updated (from less frequent to most frequent)

Group	Example Measure	Source of Performance Target	Rationale for Update	Update Frequency
1	Farebox Recovery Ratio	Regional fare policy recommendation	Regional policy; Regional fare policy recommendation	Regular pulse check, but unlikely to change unless regional policy changes.
2	<u>Service effectiveness measures</u> Miles between Mechanical Failures Security Incidents per X Boardings On Time Performance Customer Satisfaction Etc.	Actual performance	Regional policy	Regular pulse check, but unlikely to change unless regional policy changes.
3	<u>Demand measures</u> Annual Increase in Total Boardings Annual Increase in Saturday/Sunday Boardings	Financial Plan assumptions	Should be consistent with assumptions in RPTA financial plan	Yearly pulse check; change according to Financial Plan assumptions
4	<u>Standard cost efficiency measures:</u> Operating Cost per Boarding Subsidy per Boarding Operating Cost per Revenue Mile Etc.	Actual baseline data from FY05-06	For the FY07 and FY08 TPRs, the target was escalated based on national CPI-U for transportation items Future targets should be based on budgeted costs and service levels	Need to update every year.

RPTA staff requested advice on the rationale for updating cost efficiency measures such as operating cost per boarding. Simply inflating historical operating cost data using national inflation trends can result in increasing the divergence between a theoretical

goal and what is observed (or attainable) locally. A better approach would be to develop the target annually as a part of the budgeting process rather than externally through the CPI-U. The Finance Department would take the lead in updating the targets based on current financial projections, ridership projections and interest rates.

Annual transit budgets are developed to provide specific service levels, with costs built up at the line item level to reflect the direct (e.g., labor, benefits, fuels, parts) and indirect (or overhead) costs of providing a given level of service. Therefore, the budget effectively establishes the target for annual efficiency measures such as operating cost per boarding or operating cost per revenue mile. Transit budgets also identify revenues by source, and may therefore also be used to define targets for revenue measures, such as subsidy per boarding. It is therefore recommended that RPTA use budgeted costs and revenues per unit of service delivered or consumed to calculate the annual targets for those indicators. For instance, the paratransit ridership target of 3% annual increase could be dropped given the disproportionate cost of paratransit trips.

In addition to being relatively simple to calculate, an advantage of this approach is that it makes it easy to explain variances in terms of budget line item costs. It is also likely to be more relevant to local experience than the rate of change in a national index that may or may not reflect local conditions.

RPTA should also periodically evaluate effectiveness performance targets (i.e., not dependent on cost). For instance, the 3% target for annual increases in paratransit ridership, although a baseline assumption in the Financial Plan, should be dropped as it given the disproportionate costs involved.

It is recommended that RPTA take advantage of the regular TMC and VMOCC meetings during the October cycle to discuss potential updates to the SEES targets (by exception only), with the objective of presenting recommended updates for Board consideration during the January cycle.

Communications With Reporting Agencies

The main strategy to address the turnover among member agency staff involved in reporting transit performance data is regular communication and solid documentation.

RPTA already has a working group of data practitioners responsible for TPR updates and Proposition 400 reporting. The working group listing needs to be kept current and should include back-ups (alternates) for participation when the primary member is not present. RPTA should also keep a running tally of participation.

RPTA staff should develop a standard package of documentation to share with current and future working group members. This documentation could include:

- Working group list (primary member and alternate)
- Proposition 400 legislation/summary
- SEES Report
- Operating cost template
- Performance measure definitions (longer version)
- Latest TPR report
- Data implementation tool User Manual.

Web Tool Implementation

RPTA should more proactively advertise the data tool implementation with its working group. Early participation by the data input staff will contribute to tool acceptance, and will likely prevent costly fixes to the software ahead of the beta version release. The City of Phoenix request for batch data entry is a good example of both the former and the latter.

Another advantage of more proactive participation in the data tool implementation project is increased member agency awareness of upcoming quarterly reporting, and the ability to sort performance by route including by Proposition 400 routes.

To facilitate understanding and implementation of the tool, it is recommended that RPTA offer several training sessions for the working group members (ideally both primary and secondary members should be trained). RPTA could use this opportunity to reiterate the importance of total operating cost reporting, and to provide additional training on the operating cost template.

Transit Performance Report

Booz Allen has worked with RPTA staff to make improvements to the draft FY2008 TPR report. As indicated in the Findings section above, two major opportunities for improvement include the inclusion of the missing performance indicators (e.g., on-time, maintenance, safety and security) as well as the route analysis summary.

Individual route performance is currently not available in the TPR, but definitely should be included in the future. The following table illustrates three approaches RPTA peer agencies use to evaluate and present individual route performance.

System	Evaluation Measure	Evaluation Approach
Houston METRO	► Subsidy per Boarding	Routes ranked from best to worst Routes sorted by quartile Focus on 4th quartile for improvement Routes in lower 4th quartile subject to elimination

Denver RTD	▶ Subsidy per Boarding ▶ Boarding per Revenue Hour	Routes ranked from best to worst Focus on least 10% for either measure Focus on least 25% for both measures Routes subject to modification or elimination
Dallas DART	▶ Subsidy per Boarding ▶ Passengers per Trip ▶ Passengers per Revenue Mile	Routes ranked from best to worst Routes with Route Performance Index (RPI) less than 0.6 require corrective action; with 0.6-0.9 examined for corrective action

Source: Booz Allen Hamilton, Technical Advisory Committee Presentation #7, SEES, November 2006

The complete listing of the route level performance indicators is included in the SEES report and listed above (Exhibit ES-2). Booz Allen does not recommend that all measures be included in the TPR report, but they should all be available upon request. It is expected that this data will be readily available once the data implementation tool is operational.

Specific recommendations for what route level analysis to include in the TPR did not exist up to this point. To cover the route cost component, it is recommended that subsidy per boarding be tracked, at a minimum. For service effectiveness, it is recommended that RPTA track passenger boardings per revenue mile. A representative sample of the best and worst performers would be shown in the TPR.

From the base data, it is recommended that RPTA rank the routes from best to worst for each indicator, then sort them by quartile (top 25%, next 25%, etc). Performance for the routes can be shown by quartile in a few simple tables as illustrated below.

Route-Level Performance Summary, FY08

Route-Level Subsidy Per Boarding Best performers (Top 25%) Route A: \$a/Boarding Route B: \$b/Boarding ...	Route-Level Subsidy Per Boarding Worst performers (Bottom 25%) Route Z: \$z/Boarding Route Y: \$y/Boarding ...
Passenger Boardings per Revenue Mile Best performers (Top 25%) Route A (not the same A as above): a/mi Route B: b/mi ...	Passenger Boardings per Revenue Mile Worst performers (Bottom 25%) Route Z: z/mi Route Y: y/mi ...

It is worth noting that in monitoring regionally funded service programmed under the TLCP, the draft SRTP (FY08/09 to FY13/14) recommends using both passenger

boardings per mile (target: 2.1) and the regional local bus passenger loading (standard: 125%). The passenger loading measure tracks whether for the same trip (in a period of 6 months within the year) there were three or more consecutively sequenced trips that exceeded the regional local bus passenger load of 125% (i.e., 25% standees).

Monitoring route performance is key to identifying areas of improvement. This is desirable at all times, but particularly important in a recessionary economy. Possible actions for poor performing routes could include targeted marketing, headway changes, days of service changes, elimination of non productive route segment(s), or route elimination, among others.

Contract Negotiations Regarding Performance Reporting

Progress needs to be made with respect to requiring operators to meet the regional reporting requirement contractually. "Problematic" areas include safety and security, mechanical, and on time data. Reporting agencies need to flow down the reporting requirements to their contractors for both the system and route level performance. RPTA should monitor and check compliance with the requirements. Copies of the SEES indicator table should be helpful for communicating these needs.

Proposition 400 Routes Versus Other Routes

During the review, the question arose as to whether it would be appropriate for the TPR to provide specific reporting for Proposition 400 routes. The TPR was designed as a reporting tool to manage the system on a regional basis. It is expected that the web-based data implementation tool will have the functionality to drill down to any indicator by route or groups of routes (e.g., for all Proposition 400 routes as a system). For this reason it is not recommended that RPTA transform the TPR into a Proposition 400 system report. It is recommended that RPTA ensure that a similar report can be produced through the automated system either by quarter or for all of FY2009.

Reporting to Policy Bodies

At the moment, the only regional transit performance data reporting occurs on an annual basis, in January for the prior fiscal year. During the SEES, the recommendation was that regional transit performance reporting should occur quarterly. The consultant team recommends maintaining the quarterly reporting cycle to the extent possible, and that the Operations Department should become involved in the process.

Summary Recommendations - 18 Month SEES Pulse Check

CATEGORY	RECOMMENDATION	ACTION OWNER	TIMEFRAME
Target Setting and Adoption	Discuss potential updates to SEES targets with TMC and VMOCC	RPTA Planning Staff	October each year
	Consider change in base escalation for cost efficiency measures	RPTA Planning Staff	January each year
	Present annual TPR; present recommended target change (s) to RPTA and VMR Boards	RPTA Planning Staff	January each year
Communications with Reporting Agencies	Develop up to date working group listing	RPTA Planning Staff	February 2008
	Conduct monthly Data Tool/Transit performance meeting	RPTA Planning Staff, reporting agencies	Monthly in 2008
	Emphasize to working group importance of total cost accounting	RPTA Planning Staff	February 2008
	Keep running record of participation	RPTA Planning Staff	February 2008
	Develop standard package of documentation for working group members	RPTA Planning Staff	February 2008
Web Tool Implementation	Finish roll out of Beta version	RPTA Planning Staff, STG	March 2009
	Test Special Report for Proposition 400 individual route and System performance for all of Prop 400 routes together	RPTA Planning Staff, STG	March 2009
	Work with individual members to maximize input; monthly working meetings	RPTA Planning Staff, reporting agencies member staff	March 2009
	Finish roll out	RPTA Planning Staff	May 2009
	Plan and Execute Training Session for member agencies	RPTA Planning Staff	May 2009
Transit Performance Report	Add snapshot of best route level performance: recommend subsidy per boarding and boardings per revenue mile for best and worst performing quartile routes	RPTA Planning Staff	February 2009
	Add safety and security, maintenance and on-time performance indicator performance data. Indicate where/why not available	RPTA Planning Staff	February 2009
Contract Negotiations	Flow down reporting requirement to Contractors (system wide and route level)	Tempe, Phoenix, Glendale RPTA Operations	January-March 2009
Reporting	Begin monthly data entry with new system	RPTA Planning Staff, reporting agencies member staff	May 2009
	Begin quarterly, etc briefing to Audiences - Bus/DAR	RPTA Operations Mgr	June 2009 and quarterly
	Begin quarterly, etc briefing to Audiences - Rail	VMR Operations Mgr	June 2009 and quarterly