King County

Metropolitan King County Council
REGIONAL TRANSIT COMMITTEE

STAFF REPORT

AGENDA ITEM: 10 **DATE:** March 17, 2010

BRIEFING NO. 2010-B0025 **PREPARED BY:** Arthur Thornbury

SUBJECT: 2009/2010 Transit Performance Audit

SUMMARY: The committee will be briefed on the status of efforts to implement the recommendations of the Transit Performance Audit which was presented at the September 16, 2009 RTC meeting. The scope of additional audit work in 2010 will also be described.

BACKGROUND: The 2009 Transit Performance Audit undertaken by the King County Auditor with the assistance of a consultant team produced 46 recommendations on various aspects of Metro Transit's operation. Some of those were near-term actions which have been implemented and contributed to the cost-saving measures which enabled the council to substantially scale back the executive-proposed service reductions in 2010 and 2011. Other recommendations will take longer to implement and some may ultimately pose policy choices for the RTC and the council.

Attached to this staff report is a portion of an appendix to the audit summary document presented to the RTC in September 2009. It lists all of the auditor's recommendations along with the executive's response and implementation timeframe for each. This table will be the basis for today's implementation status report by the Transit Division.

Also attached to this staff report is an article on one aspect of the audit implementation written by a group of the Transit Division's schedule planners. These individuals adjust the schedules of existing bus routes and develop schedules for new routes using sophisticated computer programs including the HASTUS programs used by many other transit agencies. The potential for cost savings from better trip scheduling was a major outcome of the Transit Performance Audit, and is addressed in the attached article from the March issue of the *ATU Local 587 News Review.* The Transit Division's service schedulers are Local 587 members and former operators.

2010 Transit Audit When it initiated the 2009 audit, the council appropriated $1M in the Transit Division's budget for the work of the King County Auditor's staff and consultants. Because the auditor staff performed much of the work in-house supported by their own budget, approximately of the original appropriation remained after the 2009 audit scope was completed. In adopting the 2010/2011 Transit Budget, the council carried forward the $350,000 appropriation for the auditor to follow-up on one or more issues identified

-1-

during the 2009 effort. The King County Auditor's 2010 work program which was recently approved by the council included the following element:

> *Evaluate the Transit Division's bus procurement program. Determine whether the program successfully delivers quality, cost-effective buses in a timely manner.*

The objective of the audit will be to define quality, cost-effectiveness and timeliness for the purposes of bus procurements, measure the Transit Division's success in that light and recommend measures to improve that, including possible policy guidance. Among the questions to be asked are:

- Are we replacing buses at the optimal economic replacement point?
- Are we buying buses with features we don't need/
- Are we buying the right size buses?

The auditor expects to complete work on this project in time to present it to the council in September.

ATTENDING: Kevin Desmond, General Manager, Transit Division

ATTACHMENTS:
1. Response Matrix, 2009 Performance Audit of Transit Summary Report Appendix
2. Scheduling Perspective on the Audit, an article by Senior Schedule Planners, March 2010 issue of ATU Local 587 News Review

-2-

Attachment –Performance Audit of Transit-Response Matrix

Recommendation	Agency Position	Schedule for Implementation	Comments
S1: Transit should address opportunities to enhance and **expand the use of planning** across the organization, especially those practices which would lead to increased efficiency and revenue generation. This planning should utilize a strategic approach that includes clear problem identification, goals for outcomes, and methods to measure progress.	Concur	Ongoing	This recommendation outlines a process rather than a specific deliverable. Revising business processes will require commitment of resources that have been depleted over the past several years.
S2: Transit should ensure that systematic, effective **data analysis drives operational choices.** When decision-makers are determining Transit policy, Transit should provide thorough data analysis to inform deliberations.	Concur	Ongoing	This recommendation outlines a process rather than a specific deliverable. Revising business processes will require commitment of resources that have been depleted over the past several years. We believe that we have been very responsive to RTC and Council policy review requests.
A1: Transit should create an **updated version of the financial model** that facilitates sensitivity analysis and has complete documentation and explicitly identified assumptions. This model should be made available to external parties such as the Office of Management and Budget (OMB) and Council committee staff.	Concur	3rd Quarter 2011 for use with the 2012/2013 biennial budget.	A revised model will be developed.
A2: Transit should propose **updated financial policies;** particularly those related to sales tax distribution and cost growth for consideration by the Regional Transit Committee and the King County Council.	Concur	Propose in 3Q 2010	Proposed changes will be submitted to the Regional Transit Committee (RTC). Implementation of changes will be dependent on RTC action.
A3: Transit should revise its assumptions to improve the accuracy of **projections for capital expenditures and capital grant revenue.**	Concur	3rd Quarter 2011 for use in the 2012/2013 biennial budget	This is an ongoing effort with steps taken annually to evaluate and revise the projections. A revised approach to estimating project under expenditures will be reflected in the 2010/2011 proposed budget. Grants are exclusively reimbursements, so future awards are dependent on the availability of

Recommendation	Agency Position	Schedule for Implementation	Comments
			eligible project costs. As evidenced with the 2010/2011 proposed budget, grant awards are increased commensurate with new project costs. Similarly when capital expenditures are not incurred in a given year, projected grant revenue will not be received. Additional refinements will be implemented for the 2012/2013 biennial budget.
A4: Transit should develop a plan for reducing the size of the **Revenue Fleet Replacement Fund balance** and submit the plan for Council approval.	Concur	3rd Quarter 2010 (with other financial policies above)	While questions remain about the implications of the auditors calculations (e.g. does this change the fund to a 'pay as you go' model), the 2010/2011 budget will include a reduction in the fund balances held in the RFRF. New methodology/policy will be developed and proposed.
A5: Transit should address technical issues with its **economic analysis model** and provide it to the Auditor's Office to confirm its accuracy.	Concur	1st Quarter 2010	The majority of the issues revolved around the use of inflated cost and revenue estimates. As acknowledged by the audit team, when inflation is included in the underlying numbers, the discount rate needs to be revised to reflect inflation as well. This will be more clearly documented in future analyses. Use of life cycle costing has been expanded within Transit over the past two years. As more project managers utilize this approach, we need to continue to provide education on the proper use of the tool.
A6: Transit should create **economic replacement analysis model** to inform its vehicle replacement decisions, starting with a model for the Revenue Fleet.	Concur	4th Quarter 2010	Transit's Finance and Budget group will establish a framework and work with each group to create economic replacement and lifecycle cost models associated with each type of revenue fleet purchased. The purpose of the framework/models will be to inform both the timing as well as alternatives for replacement.

Recommendation	Agency Position	Schedule for Implementation	Comments
A7: If Transit wishes to continue to use Fleet Administration's **replacement criteria for its Non Revenue Vehicle (NRV) Fleet**, it should complete its review of Fleet Administration's operations and maintenance data. If Transit chooses not to use Fleet Administration's replacement criteria, economic replacement analysis should be used for non-revenue vehicles. Note: This recommendation is comparable to the 2006 County Vehicle Replacement performance audit recommendation.	Concur	2012/2013 biennial budget proposal	This recommendation from earlier audits was delayed while Fleet Administration provided their model. Fleet's model is currently being evaluated. If it is determined that replacement criteria will be revised; changes will be incorporated into the 2012/2013 biennial budget.
A8: In 2005 we recommended that Transit complete its comprehensive **Asset Management Guidebook**, including all Asset Management efforts currently underway within the division. We continue to recommend that the comprehensive Asset Management Guidebook be completed.	Do not concur	2nd Quarter 2010	Transit currently complies with both Washington State and Federal requirements for asset maintenance and will continue this compliance. Compliance is evidenced by the fact that the Asset Maintenance information provided to Washington State has been certified more than once and our programs have been recognized as models for others during routine FTA Triennial audits. In addition, Metro Transit staff are actively involved in a Federal Transit Administration working group which is defining how to measure, and sustain a "state of good repair" for transit facilities and infrastructure including buildings, systems, equipment and components. This working group consists of core members from seven representative Transit systems (including KCMetro), the American Public Transportation Association, industry consultants and FTA staff working together to develop appropriate facility condition measures, evaluation criteria and appropriate reporting mechanisms.

Recommendation	Agency Position	Schedule for Implementation	Comments
			Creation of a stand alone Asset Management Guidebook has limited value to the organization and is likely to be redundant with State and Federal reporting.
A9: Transit should implement a **Facilities Condition Index** and system wide targets for condition ratings for the Transit Facilities Condition Report.	Do not concur	4th Quarter 2010 ; dependent upon FTA process	As mentioned in A8 above, Metro Transit staff are participating in an effort led by the Federal Transit Administration to develop 'state of good repair' standards for the transit industry. As these standards will likely become a reporting and audit requirement for the FTA, Metro Transit's adherence may be required. Implementation of the audit recommendation on top of this would be duplicative and could require more resources.
A10: In its 2010 update to the Transit Comprehensive Plan, Transit should ensure that it fully incorporates all elements of **facility master planning**. This is comparable to a recommendation made in 2005.	Concur	4th Quarter 2010 (or with Comprehensive Plan review and adoption schedule)	
A11: Transit and the Council should consider all relevant factors, including costs, when determining an **appropriate fleet replacement for the trolley buses**.	Concur	The later of 2nd Quarter 2011 or by the time that a decision is required to meet fleet procurement requirements.	The model provided needs to be modified to reflect industry standard useful lives for alternative vehicles and to include environmental factors such as emissions and noise impacts. Transit will perform a full scale review in advance of Trolley retirement and procurement.
A12a: Transit should develop and propose **fare policy goals** to the Regional Transit Committee and King County Council that are clearly tied to Transit's strategic plan and are representative of Transit's agency wide goals and objectives. These goals should be used as a basis for making fare policy decisions.	Concur	4th Quarter 2010	Transit agrees that a full review should be undertaken to align fare policy with revenue, ridership and equity considerations and that our fare policy can be simplified. Will be recommending that the Council and the RTC convene a joint effort with our regional partners to study fare policy with an aim of reforming our fare structure. Transit notes that, while perhaps not in the form of policy goals, adopted fare policies do exist.

Recommendation	Agency Position	Schedule for Implementation	Comments
A12b: As part of adopting fare policy goals, Transit should define and monitor a **target farebox recovery ratio**. This ratio should include only bus fares and bus fare related revenues divided by only bus operating expenses.	Concur	4th Quarter 2010	Historic ratios will not be comparable. Financial policies will also need to be modified to reflect this change.
A12c: Transit and policy makers should consider further utilizing **fare policy changes to generate additional revenues** to assist in funding Transit operations.	Concur	4th Quarter 2010	Transit agrees that a full review should be undertaken to align fare policy with revenue, ridership and equity considerations and that our fare policy can be simplified. Will be recommending that the Council and the RTC convene a joint effort with our regional partners to study fare policy with an aim of reforming our fare structure.
A12d: Transit should reintroduce senior/disabled/youth **fare discounts in line with peers** and peg discounted fares to base fares by specifying a percentage discount.	Concur	Completed	Transit has proposed changes to these discounts as required per Ordinance # 16310; Section 4; proviso # 3. At this point, implementation is dependent on actions by policy makers.
A13: Transit should update and fully document the formula used to assess the City of Seattle's payment for the **Downtown Seattle Ride Free Area** to reflect current ridership and operating conditions including trips that are attracted by virtue of free fares. Transit and the Council should then consider revising the agreement with the City of Seattle.	Concur	3rd Quarter 2010	Efforts to evaluate and/or revise the methodology will need to be done in cooperation with the City of Seattle. Resources will be required to conduct additional research to support revising the existing methodology.
B1 a-j:Transit should develop a plan to implement the **schedule efficiency tools** related to service development in recommendations B1 a-j. The plan should identify efficiency targets and propose a timeline for putting each tool into operation.	See a-j below	1st Quarter 2010 for plan and 1st Quarter 2012 for efficiency tools (see dates for individual recommendations a-j below)	See a-j below
B1a. Transit should expand its set of **efficiency indicators** as noted in Technical Report B: Service Development, Appendix A **and goals** and use them as targets when developing schedules.	Concur	3rd Quarter 2010 although some elements can be implemented sooner	All of the metrics can be assembled and reported on for each service change using existing data sources. Transit agrees that using these types of cost efficiency metrics have not taken priority over

Recommendation	Agency Position	Schedule for Implementation	Comments
These goals should be used by management to monitor the performance of the service development group and regularly communicated to decision makers.			other metrics that focus more on customer satisfaction in making service decisions. More frequent review of these types of metrics may result in some different decision-making with regard to future service decisions.
B1b. Transit's planned **standards/guidelines document** should be completed, formally adopted, and published, providing a policy guide for Transit staff and reference document for external stakeholders.	Concur	2nd Quarter 2011	Transit believes that the consolidation of identified service and passenger facility standards, best practices, and service guidelines used by planners and schedulers should be consolidated into one single document. Transit believes that this would strengthen the system development processes, promote consistency, and improve outcomes. Transit also agrees that a standards and guidelines document would improve stakeholder awareness of design tradeoffs, and improve the accountability and transparency of the planning and decision making process. As the Audit describes, Transit was about to offer an update of the 10 Year Strategic Plan for Public Transportation when the national recession changed the conditions that were the basis of the update. The draft update included a work program action to develop a service and facility guidelines document by 2011. This document would compile existing guidance and engineering standards for transit service and facilities, and where existing guidance was missing or obsolete, prepare new guidance based on industry best practices and input from stakeholders.
B1c. Transit should develop a process and procedures for periodic global **optimization of its**	Concur	Initiate 3rd Quarter 2010 and continue with each service	While Transit essentially agrees with the recommendation concerns exist with some of the assumptions

Recommendation	Agency Position	Schedule for Implementation	Comments
bus system schedule. This should include reviewing and completing the deadhead matrix.		change thereafter	that support the recommendation. Transit agrees that more can and will be done to review the potential for finding new scheduling efficiencies in the system by performing routine global optimization efforts. The audit correctly notes that Transit already makes great use of "interlining" to more cost effectively deliver transit service. More recently, Transit has identified some of these interlined services as some of their worst performers in "on time performance", so Transit is hesitant to assume that there are many more efficient interlines available that will produce efficiencies without the sacrifice of poorer "on time" performance. Transit disagrees that the decision-making process behind placing routes at various bases is "mostly manual", as there is a good deal of both careful thought and base capacity modeling that goes into the proper distribution of both service and buses to the 7 transit bases. Transit also is obliged to point out that there are added operational costs not mentioned in this audit document that come from running routes out of multiple bases (something that might occur more frequently with this proposed approach). These costs include, but are not limited to, training operators so that they qualify on more routes and providing the right vehicle mix to maintain system flexibility and meet service needs. Nonetheless, Transit agrees that using its scheduling software to more powerfully review the proper placement of routes is an effort that should be undertaken. This includes reviewing and updating

Recommendation	Agency Position	Schedule for Implementation	Comments
			the deadhead matrix (something Transit is already beginning to do in light of preliminary audit findings).
B1d. Transit should employ a systematic percentile-based cycle time analysis process system-wide. This system should consider both the variation of trip times within a time period (runtime) and time gaps between busses (headways) to determine a **minimum round trip cycle time** that can be used with confidence for scheduling purposes.	Concur with caution	Initially in February 2010 and continuing with service changes thereafter.	As the auditor suggests, using Cycle Time Analysis will result in shorter "layover"/"recovery" times for Operators. It follows that the use of Cycle Time Analysis will result in cultural change for Operators, and it may also impact customers' perceptions of the timeliness of transit service. While the audit team consistently suggested that a transit agency must determine for itself whether using a 90th and 95th percentile approach to cycle time analysis (because either is appropriate) all of the costing/savings estimates used in the audit report are based on the more aggressive, 90th percentile approach. Since, as the audit points out, Transit's current layover to in service ratios are not in line with other transit agencies mentioned in the report, using the 90th percentile approach is likely to be more problematic to some of Transit's operators, and customers as well. Transit is concerned that the use of Cycle Time could produce transit schedules that are far less convenient for customers. By shifting the scheduled arrival and departure times of transit trips, Cycle Time Analysis could introduce more risk of loss of ridership as some customers find it increasingly difficult to transfer and make their needed connections. Transit will continue to monitor the effectiveness of this approach as it is implemented.

Recommendation	Agency Position	Schedule for Implementation	Comments
B1e. Transit should utilize HASTUS' Minbus module to implement **scheduling procedures that assign vehicles** to service trips most efficiently.	Concur	Initially in February 2010 and continuing with service changes thereafter.	This may lead to more efficient use of resources; however, costs of operator qualification must be included via a parameter or calculated separately to adequately address total costs. Scheduled costs alone are not the only agency cost. Once Minbus is functioning, a parameter needs to be added to prevent the program from assuming no operator cost in relocating a trip.
B1f. To develop the most **efficient run cut**, Transit's HASTUS CrewOpt module should be utilized rather than the current manual runcutting process.	Concur	Initially in February 2010 and continuing with service changes thereafter.	
B1g. Transit should ensure full calibration of HASTUS to support **schedule efficiency** and to reduce the time required to produce schedules.	Concur	Initially in February 2010 and continuing with service changes thereafter.	Consistent with responses to recommendations B1e and B1f, Metro agrees that along with using Minbus and CrewOpt tools, they must also be calibrated to produce useful results.
B1h. Transit should develop a systematic process for ensuring that **accurate costs are programmed into HASTUS** and ensure that it is updated on a regular basis.	Concur	4th Quarter 2009	
B1i. Transit should maintain **accurate data in HASTUS** data fields, including restoring algorithm-related data fields to their intended use and creating new user-defined fields as needed for external systems; populating minimum recovery durations for each trip with performance-driven minimum recovery (using the results of cycle time analysis described in Chapter 4); and populating allowed vehicle groups for each trip.	Concur	3rd Quarter 2010	As Schedulers begin to train and effectively use Minbus (per recommendations B1e and B1g), populating these fields becomes a necessary requirement for getting the best scheduling results.
B1j. Transit should ensure that **Service Development staff** have the knowledge to **fully utilize the HASTUS system.**	Concur	Initially in February 2010 and continuing with service changes thereafter.	

Recommendation	Agency Position	Schedule for Implementation	Comments
C1: Transit should capture additional data and modify current data sources to aid in the analysis of the relationship of **staffing levels and staffing resource utilization** to performance.	Concur	4th Quarter 2010	We will outline specific activities associated with implementing this recommendation. Any resolution of this recommendation will likely be subject to collective bargaining.
C2: In order to more effectively manage the costs of **planned and unplanned operator leave**, the following issues should be addressed: • Transit should quantify the cost impacts of leave procedures, and the county's representatives should take these costs into consideration when negotiating the next labor agreement. • Transit should adjust its payroll procedures so that operators who run out of sick leave do not automatically default to unpaid leave of absence in conformance with the labor agreement; and • Transit should utilize data available in HASTUS to monitor sick leave usage in accordance with the collective bargaining agreement.	Concur	For next bargaining agreement negotiations – contract expires October 2010	
C3: Transit should further investigate opportunities and incentives for more extensive **use of overtime in lieu of full-time staff**, when such use would be cost-effective, and more extensive use of part-time operators to provide backfill in lieu of using the Extra Board.	Concur	For next bargaining agreement negotiations – contract expires October 2010	This will become part of the objectives for 2010 labor negotiations.
C4: Transit and Metro **Transit Police** management should identify opportunities to use **lower cost staffing options** and implement them when they are consistent with security objectives.	Concur	3rd Quarter 2010	Metro Transit Police will continue to examine shared cost models, particularly with the ST transit police unit. In addition, any future procurement of contract security services will consider this recommendation.
C5: The Metro **Transit Police** should strengthen its **staffing management practices** by	Concur	1st Quarter 2010	The KCSO Contracting Unit will conduct a test of the MTP staffing plan using an analysis that reflects

Recommendation	Agency Position	Schedule for Implementation	Comments
employing a more statistically sound approach to planning its staffing needs and by regularly updating its employee absences to reflect actual absences and backfill needs of Transit Police Officers.			actual absences and backfill needs of Metro Transit Police Officers. The results of this work will determine the need to modify staffing practices.
C6: The Metro **Transit Police** should work with its employees to schedule their **comp time absences** and avoid the need to backfill whenever possible.	Concur within constraints of the labor agreement	3rd Quarter 2010	The KCSO will examine the amount of backfill required in recent months, work with Sergeants to review comp time rules, provide training as appropriate, and then measure the amount of MTP backfill required due to comp time in a similar period in 2010. Efficiencies associated with this recommendation may be constrained by the labor agreement which states that backfill cost is not an allowable reason for management to deny comp time.
C7: Transit should develop a more precise approach to calculating and charging for **Sound Transit's** portion of **tunnel-related police costs**.	Concur	1st Quarter 2010	KCSO will track DSTT police responses for a 3 month period and determine if MTP's current method of calculating and charging for DSTT police costs needs adjustment.
C8: Transit should develop a **long term vision and plan for the Metro Transit Police** that includes a vision, goals and objectives, as well as measures and targets to track progress towards achieving these goals and objectives. This should be integrated with Transit's strategic plan.	Concur	3rd Quarter 2010	As part of the KCSO, Special Operations Division, the Metro Transit Police share the KCSO's vision statement and are regularly required to identify and track progress on a myriad of department and division goals and objectives. Within Metro Transit Police, there are additional goals and objectives that are monitored and tracked. Transit will review the KCSO's vision statement in the context of Transit's System Safety and Security Plan to ensure consistency, and make changes as necessary.
D1: Transit should adopt a comprehensive, fully documented strategic plan and approach to address how **productivity goals**	Concur	2nd Quarter 2010	Transit concurs with the recommendation, however, the underlying cost savings may be overstated We have taken steps to

Recommendation	Agency Position	Schedule for Implementation	Comments
are to be met and should regularly reassess its paratransit productivity goal, based on historical trends and the anticipated future service environment.			begin this work. An evaluation of the cost savings will be included in our analysis.
D2: Transit should continue **Access' cost containment** efforts and monitor their effectiveness while expanding CAT and other alternative service programs proven to effectively offset the cost of the more expensive ACCESS services.	Concur	1st Quarter 2012	Transit concurs with the recommendation; however, as was pointed out during the technical review, the savings associated with this recommendation may be overstated. We will be including an evaluation of these impacts in our analysis.
D3: Transit should submit a plan to Council detailing the potential savings and impacts on customer service if Transit adjusts **paratransit service and fares** to levels allowed by the ADA.	Partially Concur	3rd Quarter 2010	While we generally concur with this recommendation more information is required on the implications of Washington State law (WAC 162-26-070) associated with fare levels. One ruling has indicated that raising the fare for ACCESS service to the level suggested by the audit team may not be legal.
D4: Transit should develop a thorough **staffing model** that incorporates workload factors and processes, efficiency benchmarks, impacts of workload changes on staffing needs, and effects of staffing changes on **ACCESS** performance.	Concur	3rd Quarter 2010	
D5: Transit/ACCESS should monitor and **enforce its contract incentives and penalties** for a period of one year, and then re-evaluate their usefulness as a tool for improving productivity and performance.	Concur	1st Quarter 2011	
E1: Transit should initiate a pilot program to extend the **preventive maintenance interval** to +600/-200 miles on a control fleet at Bellevue Base.	Concur	3rd Quarter 2010 initiate; evaluation of impacts may require up to 3 years to fully assess.	Changing the window from +/-400 miles for performing preventative maintenance to +600/-200 miles for a single base can be accomplished; however, it may be necessary to choose an alternative base in order to determine the effects on a broader spectrum of the fleets and service type. In

Recommendation	Agency Position	Schedule for Implementation	Comments
			order to determine the longer term effects on both preventative maintenance and reactive repairs resulting from this change will probably take at least three years as there will only be a marginal change (less than 1 inspection per bus) in the number of inspections performed annually.
E2: Transit should track and monitor **planned and unplanned vehicle maintenance work** and formulate a strategic approach to manage unplanned work.	Concur	1st Quarter 2011	VM recognizes the value of monitoring unplanned work. The existing coding structure in M5 (VM maintenance mgmt system) was designed to identify the source of the work but was not intended to track and report the manner in which it was performed (planned v/s unplanned). The auditor and KCM agreed that the percentages of planned versus unplanned work is different than what is portrayed in the raw data. To more clearly report the differences, VM will establish a basis for identifying planned v/s unplanned work within the M5 structure and create standards against the definition. Transit will develop a plan for implementing this recommendation.
E-3: a: Transit should regularly monitor adherence to **vehicle maintenance productivity standards** and work to ensure consistency in the standards across bases b: Transit should expand vehicle maintenance productivity standards beyond preventive maintenance inspections (PMIs) to other routine jobs. c: Transit should establish a system-wide vehicle maintenance productivity program, expanding on current productivity standards and performance measures.	Concur	1st Quarter 2011	VM has already begun the process of establishing productivity standards. 533 performance standards already exist for PMIs and defined standard preventive maintenance jobs. With increased resources, VM could expand the use of standards to routine repairs not already included in the preventive maintenance program. It is anticipated that this could create between 3,000 and 5000 additional standards to review, prioritize, analyze, establish, report on, and monitor. Transit will develop an implementation plan for this recommendation.

Recommendation	Agency Position	Schedule for Implementation	Comments
F1: Transit should develop a detailed implementation plan and timeline for integrating new **on-board and central communications systems (OBS/ CCS) data** with the existing data processing tools and data streams as the new system comes online.	Concur – in place	Ongoing and with system implementations in 2010-2012	Detailed implementation plans and timelines are updated on an ongoing basis noting the interdependencies between the systems data. As designed, the new systems will enhance the data available for analysis.
F2: Transit should continue to improve its **customer communications during emergencies**. Their efforts should include: a. Ensuring that the update to its strategic plan includes elements related to effective customer communication, standards for Transit's communication of changes in bus schedules or reroutes to customers, and metrics for measuring Transit's performance that include customer feedback. b. Completing analysis of the communications options and developing a prioritized implementation plan. The analysis should assess how each option would meet Transit's communications goals and the potential costs and benefits of each option. c. Updating the website so applications customer use during adverse weather are accessible and easy to use; implement a route specific e-mail notification system; and finally, implement alter information via text messaging to rider cell phones and make key website pages available to customer in a format compatible with mobile devices.	Concur	4th Quarter 2010 (all elements; some may be implemented sooner)	Metro's "After Action Report" issued 2/6/09 following last winter's unusual snow storms identifies many of the actions being recommended by the audit. Consequently, many of the improvements are already underway or planned for the upcoming winter season. Other elements noted by the auditors will require more time and technical resources to develop, whether directly by Metro or in partnership with application developers. We agree that the strategic plan should reference effective public and customer communications during emergencies.

Attachment 2

ATU Local 587 News Review,
March 2010

Scheduling Perspective on the Audit
By Senior Schedule Planners

Since publication of the King County Metro Transit 2009 Performance Audit there has been much discussion of the findings and how the resulting changes will affect the working conditions of all ATU 587 members. We Senior Schedule Planners (ATU 587 members, all former transit operators and firstline supervisors) thought it would be beneficial to add our perspective to the discussion since we will be executing the changes mandated by management in response to the audit. We will not refute or question the findings of the audit in this forum but intend to describe how the Scheduling group will attempt to achieve the desired end result.

Audit Goal

Scheduling has been presented with a rather lofty goal by the auditors.
One way to state it would be as follows: "Increase the efficiency of the existing transit system so as to preserve as much of it as possible, while abiding by all existing contract language, while avoiding operator layoffs, while preserving the quality of service delivered to our customers." In a nutshell, every hour of efficiency found and implemented equates to an hour of transit service retained for the riding public. As has been correctly noted previously in the News Review, the efficiency will be found in reducing recovery times between trips. However, bus schedules should be more accurate after application of the processes described below. This is a benefit for both operators and customers. We will use several tools to achieve the desired goal: Automated scheduling software, cycle-time analysis and the continued critical review by Senior Schedulers of any schedule for what we call "streetability". "Streetability" of a schedule is a subjective assessment of that schedule, though we in Scheduling prefer to think of it as good professional judgment based on years of experience. Service is not "streetable" when Schedulers determine that a schedule could not actually be operated on time or provide the operator with reasonable working conditions. Unfortunately, because of the increased emphasis now being placed on operating efficiency, we are more constrained than ever in our ability to reject an "un-streetable" schedule.

Cycle-time Analysis (CTA)

Cycle-time analysis in transit terms refers to the amount of time it takes to complete one round trip on a route. This cycle includes both of the revenue trips and the recovery time in between the two trips. Our own CTA will include critical review of current running times as recorded by the AVL system for each targeted route, a review which will eventually grow to encompass the entire system. CTA is a method for establishing the optimal recovery time between the two revenue trips based on the actual (AVL) running times of the revenue trips.

The systematic review of AVL running times triggered by CTA is good news for transit operators and our customers. Routes that are now chronically late due to short running times will benefit from increased running times as identified by the CTA process. In the past, Schedulers used schedule maintenance budget to add running time or layover to routes suffering from late operation. Because we currently have no schedule maintenance budget, we will pay for these schedule improvements using efficiencies found as recovery times are reduced and improved blocking solutions are implemented. In short, the end result should be more accurate schedule information for both operators and customers. Operators will be more assured of the recovery time as shown on the runcard and customers will have more confidence in the published trip times. CTA is done separately and before application of the HASTUS modules described below.

HASTUS Modules

Our scheduling software, HASTUS, has automated modules called MinBus and CrewOpt. These automated modules will be used much more intensively than in the past. The MinBus module is run on the vehicle schedule; the vehicle schedule represents how bus trips are hooked together into bus blocks, known as route/run. The CrewOpt module is run on the crew schedule; the crew schedule represents operator assignments, known as the run cut. In the past, Schedulers commonly developed both vehicle and crew schedules manually, basing decisions on bus blocks and operator assignments on our system knowledge, available data and input from various sources including but not limited to transit operators.

Minbus finds the most efficient trips to hook together in the vehicle schedule; it can examine far more possibilities than a Scheduler ever could manually. CrewOpt will similarly create efficient operator assignments that meet the requirements of the labor agreement. Schedulers are responsible for setting up these modules to produce an efficient but "streetable" solution. The process will involve many runs through the module after changing the set-up before arriving at an acceptable solution. Schedulers will still make the final decision after reviewing what the module has produced. As with all automated computer modules the end result depends entirely on how the module is set to run and the accuracy of the internal data it uses.

To achieve this end, Scheduling staff will receive on-site HASTUS training on the MinBus and CrewOpt modules in 2010. This training will enable us to use these modules (already owned by the agency) to their fullest. It is not unreasonable for management to expect staff to use the available tools to their utmost capability and pay to provide appropriate training.

MinBus and CrewOpt have been used to differing degrees at all operating bases for the February 2010 shakeup and both modules have shown promise in achieving the efficiency goals.

What To Expect

Route 16 and 181 schedules for February 2010 were built using CTA prior to running the MinBus and CrewOpt modules on South and Ryerson Bases. Up to ten routes each

at Central Base and the East Campus will be targeted for CTA, Minbus and CrewOpt for the June shakeup. This process will continue until the entire system has been reviewed and subject to CTA, MinBus and CrewOpt, it will take several years to accomplish the task. As we move forward the plan is to look at various indicators for each route both before the process is implemented and after so we have the ability to see the effect of the changes. Some of the indicators are as follows, there are others: on time performance, customer complaints, operator comments.

Operators may see some of the following changes to routes that will help the agency achieve the efficiency goals as stated in the audit: reduced use of clock-face headways, bus stop consolidation, transit signal priority and route truncation. All are strategies that can be used to shorten the cycle-time for trips on a targeted route. These changes involve other planning groups and are beyond what Scheduling can put into effect without input from those groups (or the public in some cases) but this work is under way.

Change

There is no doubt about it, change has come to King County Metro and it is never easy. Your favorite daylighter, relief run or DTA will probably not exist in its current form after Scheduling applies CTA, Min- Bus and CrewOpt to the schedules at your base. Many assignments will have a reduction in recovery times but some may actually see a modest increase in recovery times due to longer, more realistic running times on the trips. Hopefully, every assignment will have more accurate running times and therefore more accurate recovery times showing on the runcards.

In addition to this article and future articles from Schedulers, a committee has been formed to help communicate how these changes will affect Operations and by extension ATU 587 members. The committee includes representatives from the ATU 587 executive board, Schedulers, the Scheduling supervisor and the Operations P&T supervisor.

This committee will report to an Oversight Panel consisting of the ATU 587 president and Metro's Operations and Service Development managers. This will provide a recurring, high level forum for two-way dialogue as increasing portions of the system are brought into the new way of scheduling as suggested by the audit.