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MANAGEMENT LETTER

DATE: January 6, 2006

TO: Metropolitan King County Councilmembers

FROM: Cheryle A. Broom, King County Auditor

SUBJECT: Follow-up on Implementation of Recommendations from 2004
Performance Audit of the Roads Services Division Capital Planning

This memorandum provides the results of our follow-up review of our 2004 Roads Services Division Capital Planning performance audit.

Background

In 2004, the auditor's office completed a performance audit of the Department of Transportation Roads Services Division (RSD) Capital Planning. The objectives of the audit were to assess the extent to which the capital program is planned and carried out consistent with industry best practices, to evaluate how existing information about RSD projects could be analyzed and reported to better support decision makers and strengthen accountability to citizens, and to determine whether the RSD has a well-planned program to preserve the taxpayers' investment in road infrastructure.

We found that the division was making progress in implementing some capital planning best practices, but that it fell short of best practices in areas of thorough and consistent methods for program planning, economic analysis, and performance and accountability reporting. The audit recommended that RSD strengthen analysis and documentation of the Capital Improvement Plan (CIP) and the preservation program, as well as provide information that can be used by decision makers and the public to assess the performance of individual projects and RSD capital program-wide performance. The focus of this follow-up letter is on RSD's progress in implementing our recommendations for improvement.

Our 2004 recommendations were separated into three categories: capital improvement planning and management practices, capital project management and analysis, and preserving taxpayers' investment in transportation facilities. RSD has addressed each recommendation and is making good progress in implementing several initiatives. However, we have some follow-up recommendations for further improvement. Below is a brief description of RSD's progress in implementing the audit's recommendations.

Capital Improvement Planning and Management Practices

Recommendation 1: Complete development of program-wide performance measures and performance targets to track and report on achievement of program goals.

As we noted in our 2004 audit, a logical, concrete connection between goals, objectives, and performance measures and targets is critical to ensuring that the department's effort is focused on achieving goals and fulfilling its mission. In 2005, RSD continued to develop its performance measures for the CIP. The following table shows the performance measures that RSD has begun to use for the CIP.

Performance Measure	Desired Outcome
1) Planned vs. actual number of projects advertised for construction	Projects are designed in a timely manner
2) Planned vs. actual number of projects completed on time	Projects are completed on time
3) Number of projects over, on, or under budget	Projects are completed on budget
4) Actual vs. planned CIP spending	Projects are completed on budget
5) Before vs. after key statistics (e.g., safety, capacity, mobility), depending on primary goal of project	Road improvements are effective in addressing the identified problems

These measures track the performance of the CIP with respect to schedule, budget, and effectiveness. RSD has not yet developed performance targets for these performance measures. However, the division believes that year-to-year comparisons would not be possible, given the annual variation in the number of CIP projects. Therefore, the division plans to set performance targets yearly, starting with the 2006 business plan.

Recommendation 2: Document prioritization processes for non-capacity projects and summarize the processes in the Transportation Needs Report.

Our 2004 audit noted that prioritization systems should be clearly documented in order to ensure that the systems are uniformly applied and consistent with RSD's policy framework. When we completed our audit, the only prioritization process documented in the draft 2005 Transportation Needs Report (TNR) was that for capacity projects. In response to our work, RSD revised the TNR to integrate non-capacity project prioritization systems, such as those for High Accident Locations/High Accident Road Segments, Intelligent Transportation Systems (ITS), bridges, guardrails, signals, and pedestrian facilities.

The 2006 interim update to the TNR will include updated descriptions of the prioritization processes for non-motorized vehicle facilities, traffic operations, roadway reconstruction, and ITS. Although the current TNR includes much more detail about

how RSD prioritizes different categories of projects, it is not always clear how these prioritization processes relate to RSD's policy framework and, more specifically, to its business plan goals. RSD could address this by grouping prioritization processes by policy goal, or by referencing which policy goals are addressed through the individual project categories.

Capital Project Management and Analysis

Our 2004 audit was the second of three capital performance audits that the King County Auditor's Office completed in the past three years, with the other two audits having focused on the Wastewater Treatment and Transit Divisions. Each of the audits raised concerns about the tracking and reporting of CIP performance, the quality of analysis during the capital planning process, and whether the county had processes in place to ensure that it makes the most cost-effective and efficient capital investment decisions. In all three audits, we found that the agencies could improve CIP performance tracking and reporting, and that they lacked written guidelines for economic analysis.

Recommendation 3: Develop an approach to report capital project scope, schedule, and budget information in a format that is meaningful to decision makers and the public. That format should be consistent with the sample provided in the audit report.

Although RSD collected information on changes to capital project scopes, schedules, and budgets, that information was not readily available for elected officials and taxpayers in 2004. During the course of our audit, RSD upgraded its Web site with extensive information on these types of changes for individual projects.

We recommended in our audit that RSD develop new reports that provide more detail about projects changes. For example: what was the primary cause for the change in scope, schedule, or budget? were the changes avoidable or unavoidable? did the changes add value to the project? We also recommended that RSD provide a summary of this information program-wide.

In response, RSD developed some performance reports and charts for reporting scope, schedule, and budget for individual CIP projects. However, the intent of the recommendation was to ensure that RSD collects, analyzes, and communicates detailed information about the type, necessity, and value of changes to capital projects. The current reports cannot be used this way. In addition, the proposed reports provide project-level detail on project changes, but they do not include a summary of changes to all projects. Without a program-wide rollup, RSD also misses an opportunity to evaluate and report its overall performance in managing changes on capital projects.

In addition to capital project reporting, the 2004 audit evaluated RSD's analysis of capital project alternatives. We found that RSD did not have economic analysis guidelines, which reduced the likelihood that consistent methods and assumptions were used throughout the capital program when conducting benefit cost and lifecycle cost

analyses of potential projects. We made four recommendations in order to guide RSD in developing such guidelines:

Recommendation 4: Provide guidelines for Lifecycle Cost Analysis (LCCA) and Benefit Cost Analysis (BCA), particularly for the assumptions used for key cost variables such as the discount rate and vehicle wait times.

Recommendation 5: Develop guidelines for how operations and maintenance costs should be included in analysis of major road project design alternatives.

Recommendation 6: Ensure that analysis of potential project alternatives includes documentation of the range of lifecycle costs of and qualitative benefits for each alternative.

Recommendation 7: Communicate the total estimated lifecycle costs of proposed projects to decision makers and the public.

In 2005, RSD developed a draft "Lifecycle Costs and Cost-Benefit Analysis/Economic Analysis" policy and procedure, which addresses LCCA/BCA, incorporates operations and maintenance costs into the analysis, and provides a framework for communicating the selection of project alternatives. While the draft is a good start, there are some elements that could be strengthened. For example, the guide currently lacks detail about the planned analytical approach, such as the approach to using a discount rate and specifically how the periods of analyses for alternatives will be determined.

In 2006, the auditor's office plans to provide oversight or technical assistance to RSD, the Wastewater Treatment Division, and the Transit Division to promote CIP tracking and reporting that effectively communicates the performance of the CIP, and LCCA/BCA guidelines that consistently reflect cost-effective analytical procedures. Part of our office's involvement will be to see how the guidelines are put into practice.

Preserving Taxpayers' Investment in Transportation Facilities

Recommendation 8: Provide sensitivity analysis and case studies to the council in order to illustrate the impact of different funding levels and deferred maintenance.

At an August 2005 Transportation Committee meeting, the County Road Engineer delivered a presentation using sensitivity analysis and a case study to reflect the impact of different funding levels for the county's pavement preservation program. As we noted in the audit report, these informative presentations need to be refined or updated and ongoing, since councilmembers change over time. The chair of the Transportation Committee reiterated this point.

In order to ensure that the value of preserving taxpayers' investment in transportation facilities is conveyed to the council, RSD should plan to continually refine its

presentations to answer questions councilmembers have about the pavement preservation program. The presentation should also be updated periodically to reflect current costs and relevant project case studies. Case studies using projects planned for the current year CIP are more effective in showing the impact of deferring overlays than using hypothetical CIP projects.

Recommendation 9: Complete documentation of overlay project prioritization to promote consistency and accountability.

In our 2004 audit, we noted that RSD had written guidelines for assigning conditions to pavement, but it did not have written procedures for how transit and truck volumes are factored into the analysis, and how the prioritized list generated by the King County Pavement Management System (KCPMS) is modified to develop a final annual overlay program. The report noted that the lack of documentation weakens the accountability and consistency of the program.

In 2005, RSD developed a draft "Guide for Selecting Road Projects for Resurfacing for King County." The guide provides an introduction to the King County roadway system, the overlay program, and how pavement conditions are rated. The guide also describes how the KCPMS identifies road candidates for overlays based on pavement score. In response to our audit, the guide now describes how projects may be postponed or removed from the KCPMS-generated list:

- **Capital Improvement Program.** If the road is already part of a CIP project with its own funding, it is removed from the overlay list.
- **Scope of Overlay Work.** If the proposed project is in an area with only projects of less than a half mile, the projects will be postponed and the roads will be repaired only until longer segments are available and overlaying becomes more cost effective.
- **Field Verification.** The road must be visually inspected to ensure that it is a proper candidate.
- **Drainage Issue.** If the road has problems with drainage, the overlay work will be postponed until the drainage work can be completed.
- **Utility Construction.** RSD shares the overlay program with utility companies. If the utility is planning projects on these roads, RSD will postpone the overlay until the utility work is done.

As a final step, the guide notes that if the overlay budget is inadequate to complete the entire overlay program, road functional class, average daily traffic, and grouping criteria should be used to choose the final overlay program. An initial draft of the guide defined these three factors, but did not specify how they are weighted or who is responsible for performing the analysis. In response to our inquiries, RSD added such an explanation to the draft.

Follow-up Recommendations for RSD

In order to complete the implementation of our 2004 recommendations, we recommend that RSD:

1. Complete development of performance targets for the CIP.
2. Continue to update the TNR with the most updated prioritization processes, and tie each prioritization process into RSD's overall policy goals.
3. Develop a system for tracking and reporting CIP performance and refine economic analysis guidelines, taking into consideration the auditor's office suggestions.
4. Refine and update the presentation on the pavement preservation program on an annual basis.

Rob McGowan, Principal Management Auditor, and Bob Thomas, Senior Principal Management Auditor, conducted this follow-up review. Please contact Rob at 296-0368 or me at 296-1655 if you have any questions about the issues discussed in this letter.

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cc: Harold Taniguchi, Director, Department of Transportation
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