

**Official Response to the
Construction Management/ Highway Maintenance Performance Audit
From Department of Transportation and Office of Financial Management
January 4, 2008**

This document was prepared in response to the audit report delivered to the Washington State Department of Transportation (WSDOT). We have provided a coordinated response from both WSDOT and the Office of Financial Management (OFM) for each issue. Action steps are by WSDOT unless otherwise noted. Our intent is that this organization will make it easier to copy and paste our response after the appropriate issue and recommendation section in the report.

Finding #1: WSDOT's Consumable Inventory Management System does not Support the use of Automated Business Processes Relying on Non-Automated, Burdensome Business Processes to Perform Routine Tasks

Recommendation #1: We recommend WSDOT:

- **pursue the development of an integrated purchasing-inventory management system linked to the Department's accounting system.**
- **consider the use of M4 as a short-term solution.**

WSDOT Response: We agree. This recommendation supports a course of action recommended to WSDOT in the *Consumable Inventory Feasibility Study (Dye Management Group, Inc.)*, a report we commissioned in September 2004.¹ The study estimated the cost of a new consumable inventory system to be \$4.5 million.

WSDOT's consumable inventory system is over 30 years old. It is very labor intensive and uses dated technology to account for \$80 to \$100 million in annual transactions. WSDOT has taken a lead role with other state agencies to develop solid business requirements for a replacement system that will meet statewide needs. WSDOT will continue to work with the Office of Financial Management (OFM), Department of Information Services (DIS), and others to implement a modern inventory accountability system within the "Roadmap" framework that has been established to integrate policies, processes, information tools and data for state agencies. In the meantime, we have assigned more staff to train inventory system users and managers to more consistently use the full capabilities of the existing system. We also are using new data mart technology to provide better and timelier access to consumable inventory information.

OFM Response: Many of the department's systems are out-of-date and need to be replaced. In a recent study, *Critical Applications Modernization and Integration Strategy, December 30, 2005*, eleven core systems were identified. The consumable inventory system was not one of these. Given the competing demands for scarce funds, the consumable inventory systems needs to be evaluated against the eleven core projects identified in the study.

Action Steps and Timeframe:

- Provide user training in both the consumable inventory system and data mart. Ongoing.
- Participate in the OFM Roadmap process to position consumable inventory as an early implementation module. Ongoing.
- Evaluate the fleet management system (M4) for possible short-term application to meet consumable inventory needs. Complete by June 30, 2008.
- Evaluate options for financing a new system. Complete by June 30, 2008.

¹ <http://wwwi.wsdot.wa.gov/fasc/adminservices/PandMM/feasibilitydye.pdf>

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Finding #2: *Current Practices in Some WSDOT Regions have Prevented the Processing of Inventory and Accounting Transactions to Leverage its Inventory Management System*

Recommendation #2: We recommend WSDOT assure inventory is managed only by appropriately trained personnel.

WSDOT Response: We agree, and have been working to establish more functional oversight of regional inventory management procedures. We have a professional certification and training program in place for regional supply officers that has resulted in eight regional staff earning their Certified Professional Public Buyer (CPPB) credential. Training for over 200 system users is provided jointly by regional and headquarters staff. The department is constantly analyzing information to identify more ways to eliminate regional variations in supply processes.

OFM Response: OFM supports the training and certification program WSDOT is deploying and encourages the idea of having at least two individuals in each region with such certification.

Action Steps and Timeframe:

- Support and encourage professional certification and continuing education for both regional and headquarters staff. Ongoing.
- Conduct a detailed analysis of the different procedures used in each region to determine which practices achieve the best results. Complete by March 15, 2008.
- Provide on-site training and technical assistance to inventory system users. Ongoing.
- Develop a professional certification and training registrar at headquarters in order to track progress towards the goal of at least two professionally trained and certified supply officers per region. Complete by July 2008.

Finding #3: *WSDOT Inventory Records are Not Consistently Adjusted, Creating Inaccuracies in the Consumable Inventory System and Impeding Efforts to More Effectively Manage Inventory*

Recommendation #3: We recommend WSDOT:

- adopt the inventory level recommendations from the Cisco Systems report.
- direct all field operations to maintain accurate information in the consumable inventory system.
- redistribute high-value and/or critical-need materials among regions.

WSDOT Response: WSDOT suggested this recommendation for strengthening our program to the audit team, and supports its implementation.

OFM Response: We agree with the recommendations and all of the action steps.

Action Steps and Timeframe:

- Implement the action steps associated with recommendations 1 and 2.
- Require appropriate orders, receipts, and issues of inventory to be entered into the consumable inventory system in a timely manner. Complete an implementation plan to balance recording of inventory transactions with business requirements for the use of inventory materials. Complete by September 2008.

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- Encourage used material that is in serviceable condition (e.g. guardrail, light poles) to be added to inventory so it is visible for redistribution and reuse between regions. Complete in FY09.

Finding #4: Timeliness of WSDOT Procurements Through the Department of General Administration Was Unable to Be Determined, Inhibiting the Ability to Assess Purchasing Power and Future Economics

Recommendation #4: We recommend WSDOT work directly with GA to:

- **obtain detailed information identifying timeliness of service.**
- **establish reasonable benchmarks.**
- **monitor service levels.**

WSDOT/OFM/GA Response: We agree with the recommendation to review and improve appropriate performance measures and benchmarks and to monitor performance against them. The three agencies are committed to working together to ensure efficient procurement and supply chain management. The agencies will improve documentation of when purchase requests are made, orders are placed, and goods are delivered. However, it is important to recognize that WSDOT and GA already regularly monitor service and meet together quarterly to address performance questions and current topics. Further, the purchasing services agreement between both WSDOT and GA also identifies service level expectations and protocols for both agencies. A quality and timely procurement process is the goal for all of the parties. Receiving ordered supplies that meet quality service and delivery standards is a shared responsibility of WSDOT and GA.

Action Steps and Timeframe:

- WSDOT will continue to monitor critical contract matters and work with GA to continually improve service and resolve issues. Ongoing.
- To enhance current monitoring of service quality and timeliness, GA and WSDOT will ensure appropriate performance measures are in place to assess actual performance against these measures. This work will commence immediately and be ongoing.

Finding #5: WSDOT Regional Purchasing Practices for Quantity “Q” Contracts May be Inconsistent, Potentially Reducing Public Visibility, Requiring Additional Work for Bidders, Restricting Price Adjustment Provisions, and Inappropriately Using Liquidated Damage Clauses

Recommendation #5: We recommend WSDOT:

- **increase department-level oversight of regional “Q” contract practices to promote more efficient bidding and contract administration.**
- **continue and expand its training and certification program for procurement and inventory management personnel.**
- **revise the WSDOT Purchasing Manual to provide specific guidance price adjustments during the term of a contract and at the time of contract renewal.**

WSDOT Response: WSDOT agrees, and will work to implement consistent “Q” contract practices across the state. WSDOT supply managers apply competitive contracting tools and techniques that they believe provide the best value to the department under specific market

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conditions. There may be some unique circumstances that result in some unique contract provisions.

OFM Response: Extraordinary cost increases in steel, copper, asphalt, and other resources has created a need to reconsider how risks are shared between the state and contractors. Contract price adjustments should be closely tracked in order to inform future contracting, project cost estimating, and budget development.

Action Steps and Timeframe:

- WSDOT will evaluate additional oversight measures that can be implemented at the department-level. Complete by April 30, 2008.
- Support and encourage professional certification and continuing education for both regional and headquarters staff. Ongoing.
- The WSDOT Purchasing Manual 72-80, Para 1-23.3.d already contains specific guidance about contract price adjustments. Completed. We will continue to review for additional guidance on price adjustments that will be helpful for the Purchasing Manual. Ongoing.
- WSDOT will track the cost of those items purchased under “Q” contract authority in order to address the question of changing prices for such commodities as sand, gravel, asphalt, etc. An annual assessment of cost changes will be provided to the Office of Financial Management when the agency request budget is submitted.

Finding #6: *WSDOT Does Not Use Price Adjustment Clauses for All HMA Resulting in Increased Vendor Risk*

Recommendation #6: We recommend WSDOT pursue the use of price adjustment clauses for HMA to include all future HMA-related contracts.

WSDOT Response: WSDOT agrees that the use of a price adjustment for HMA to shift cost escalation risk to the owner is an effective and appropriate means to mitigate payment of a “risk premium” on some HMA projects. Designers are directed to include the Hot Mix Asphalt Price Adjustment Clause in our multi-year HMA-related projects. We will continue to implement this clause in our multi-year projects.

WSDOT disagrees that it is in the owner’s best interest to assume this risk on all contracts. Based on results to date and our communications with industry, we do not agree that using the price adjustment clause in projects of short duration is cost effective due to administrative costs and low risk. Contractors have the ability to negotiate with suppliers and better manage HMA cost for the short term.

OFM Response: We agree with WSDOT that a price adjustment clause is not needed for contracts of less than one year. There is no clear demand from suppliers that this needs to be done.

Action Steps and Timeframe:

- WSDOT will continue to monitor the effectiveness and application of the HMA price adjustment provision by reviewing the data annually in November and communicating with industry, making adjustments to our policies and provisions as needed.

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Finding #7: *WSDOT Can Educate and Encourage the Use of Reclaimed Asphalt Pavement, Potentially Resulting in Cost Saving Opportunities*

Recommendation #7: We recommend WSDOT:

- encourage local governments to allow the use of RAP consistent with WSDOT practices.
- explore increasing allowable RAP levels in non-critical mixes.

WSDOT Response: We agree that continuing our education effort with local agencies may allow those same local governments to save money through the use of Recycled Asphalt Pavement (RAP). WSDOT has continued to educate local governments, through conferences, research reports, presentations and face-to-face meetings, on the value of allowing the use of RAP up to 20% in new hot mix asphalt pavement (HMA).

We also agree that WSDOT should continue to research and explore using higher levels of RAP in HMA. WSDOT has been a national leader in researching higher levels of RAP in HMA since the late 1970s. We analyze our pavement performance carefully through a world class pavement management system. The Illinois and Texas proposals are not without risk: we expect our “non-critical mixes” on shoulders to last much longer than pavements under traffic. Decreasing pavement life, even on shoulders, would adversely impact the Preservation Program and result in higher lifecycle costs. Highway shoulders and driveways are not exposed to large traffic loads, but they are exposed to the environment. High RAP mixes tend to be more oxidized and can be more susceptible to cracking caused by environmental stresses, particularly those brought about by high and low temperatures. We are working on engineering all of our pavements for the lowest life cycle cost.

OFM Response: WSDOT is a national leader in researching and implementing environmentally friendly transportation projects. Enhancing the use of Recycled Asphalt Pavement will also help to curtail the diminishment of the scarce mineral resources used to make asphalt.

Action Steps and Timeframe:

- Continue to monitor research on using higher levels of RAP, through the State Pavement Technology Consortium (includes WSDOT, Texas DOT, Caltrans and Minnesota DOT).

Finding #8: *Potential Opportunities Exist to Use WMA Technology to Reduce the Cost of Installed Asphalt*

Recommendation #8: We recommend WSDOT continue to monitor WMA research and current U.S. evaluations.

WSDOT Response: We agree. WSDOT continues to monitor Warm Mix Asphalt (WMA) and participates in national level work, including the Director of our State Materials Lab participating in both a national-level State Pavement Technology Consortium team studying WMA and as one of three state representatives in the FHWA managed, national-level Technical Working Group on WMA.

OFM Response: We agree and encourage WSDOT to evaluate and research WMA technology.

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Action Steps and Timeframe:

- Continue to monitor research on Warm Mix Asphalt and continue to participate in national efforts to investigate Warm Mix Asphalt.

Finding #9: *Although WSDOT Does Not Own HMA Plants WSDOT, Direct Ownership May be Appropriate Given Specific Conditions*

Recommendation #9: **We recommend WSDOT and other public entities monitor HMA competition and service levels.**

WSDOT Response: WSDOT agrees and notes that monitoring HMA competition is current agency practice. Results of its monitoring both of prices and level of competition have been shared widely with the industry itself, with the public through the *Gray Notebook*, and also through Governor Gregoire's Government Management Accountability and Performance (GMAP) program.

OFM Response: Although the audit report neither encourages nor discourages public ownership of asphalt plants, we urge caution as this work has historically been performed by the private sector in Washington State. WSDOT has taken the right approach by purchasing asphalt materials that the private sector can access for production in remote areas, but should not become a producer itself. Nevertheless, WSDOT must remain vigilant and closely monitor competition and the availability of supplies.

Action Steps and Timeframe:

- Continue to monitor HMA competition as documented by the low bid system.

Finding #10: *WSDOT Has Not Strategically Considered SRA Use and Operations nor Maintained Historical Records Regarding the Number of Travelers Served Annually*

Recommendation #10: **We recommend WSDOT:**

- **undertake a comprehensive strategic and operational review of the SRA Program.**
- **maintain historical records and develop a trending log to assist in determining budgetary requirements.**

WSDOT Response: We agree, and have developed a SRA stakeholder advisory team to develop a comprehensive strategic plan to capture what we believe our rest areas will need to look like in the future. This team includes numerous interested parties, including members of Washington Trucking Association; Department of Community, Trade, and Economic Development; Washington State Patrol; Federal Highway Administration; various HQ programs and representatives from the WSDOT regions. The team is charged with the following:

- Clearly identified roles and responsibilities – SRA Program Organization
- Recommendations and strategy on funding opportunities to enhance maintenance and preservation
- Recommendations and strategy on traveler and tourism information
- Recommendations and strategy on other amenities of safety rest areas
- Strategy on public-private partnerships
- Program vision and priorities

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- Program measurements
- 10-year plan to operate, manage, maintain and possibly develop new facilities

Additionally, WSDOT currently tracks the numbers of SRA visitors and reports this information in WSDOT's *Gray Notebook*. We will continue to track and report this information. This information will be used to develop and maintain historical records and trending logs to support budget analysis in the future.

OFM Response: We appreciate the acknowledgment in the audit report that the maintenance and operations division at WSDOT is exemplary and the acknowledgment that maintenance employees regularly improve their work through the use of best practices. As noted in the audit report, the maintenance division is a leader in planning, budgeting, and evaluating their work through the use of performance measures. We share the auditor's concerns about the aging workforce and the lack of investment in maintenance.

Budget justifications could include information about the type of traffic and the traffic trends at rest areas over time. The strategic planning effort currently underway will help shape a vision of SRA for the future, including the use of technology at these facilities, the kinds of amenities that should be offered, the improvements needed, staff resource requirements and training required, etc. We would support WSDOT developing a backlog of unmet maintenance needs for the 2009-11 budget.

Action Steps and Timeframe:

- A final strategic plan is expected to be completed by March 2008.
- Track and report SRA visitor numbers. Current and ongoing.

Finding #11: *Unclear WSDOT SRA Roles and Responsibilities and No Single Program Level Leader With Full Accountability Have Resulted in Non-Collection of Contract Amounts, Capacity Issues, and Limited Planning*

Recommendation #11: We recommend WSDOT:

- **conduct a comprehensive organizational review of its SRA Program.**
- **establish milestones and key performance indicators.**

WSDOT Response: While we agree that current efforts in this area could be improved, the organizational arrangement has not adversely impacted the overall operation of this program. The only problem created by "unclear roles" was failure to invoice Services for the Blind which was done immediately upon notification. Other issues were results of competing priorities and lack of staffing. Implementation of the elements of the strategic plan will also result in more clearly defined SRA program roles and responsibilities.

OFM Response: We agree with the audit finding that there is no single authority with full accountability for state rest areas. It would have been helpful if the audit report had recommended an approach for resolving this. Rest area facilities cross multiple program areas including the facilities, maintenance, environmental, freight, and economic-partnerships programs. Although safety rest area functions are diverse, the problems identified in the audit seem to be principally around vending and advertisement contract management. We support

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WSDOT's contract experts providing more assistance and oversight on rest area-related contracts.

Action Steps and Timeframe:

- This issue will be addressed in the organization review referenced earlier that will be completed in March 2008.
- WSDOT's contract experts will provide ongoing assistance and oversight of state rest area contracts.

Finding #12: *Revenues: Essential WSDOT Maintenance and Repair of SRAs is not Consistently Prioritized or Adequately Funded Resulting in a Deteriorating Infrastructure*

Recommendation #12: We recommend WSDOT:

- **pursue statutory changes to allow SRA revenues to be dedicated to SRA maintenance activities.**
- **prioritize preservation of the SRA System and fund appropriately.**

WSDOT Response: WSDOT defers to the Legislature on this recommendation. Statutory changes allowing SRA revenues to be dedicated to the SRA program would have to be completed at both state and federal levels. Regarding priorities, WSDOT's Facilities Computer Maintenance Management Systems (CMMS) is the primary tool used to prioritize SRA preservation needs. WSDOT is working towards full implementation of the CMMS so this information can be used in budget requests.

OFM Response: As noted in the audit, sufficient inflationary increases have not been provided to meet current safety rest area activities and the persistence of underfunding may result in the further decline of these aging facilities. Yet overall, the rest areas currently sustain a level of service rating of B, which is to the credit of those who manage and operate the safety rest areas within scarce resources. Rest areas will always compete with ferries, highways, rail, and other transportation needs. Much of the transportation system is aging and in need of additional resources. It is incumbent upon the department to establish lowest lifecycle cost methodologies are in place to help ensure preservation, maintenance, and replacement of safety rest area needs occur at the right time and price. We are curious why the audit did not recommend further exploration of public-private partnerships at rest areas. There may be state and federal barriers to this, but public-private partnerships at rest areas would seem to provide opportunities for generating additional revenues and help meet the changing needs and expectations of the traveling public, truckers, safety officers, and others.

Action Steps and Timeframe:

- Full implementation of CMMS is projected to be complete by December 2009.
- Funding requests for preservation funding will be made on an as-needed basis within the biennial WSDOT budget process.

Finding #13: *WSDOT is Facing an Engineer and Project Manager Labor Shortage Potentially Resulting in Increased costs and the Loss of Institutional Knowledge*

Recommendation #13: We recommend WSDOT:

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- **determine the types of skills by timeframe that the M&O program will need to replace as experienced personnel retire.**
- **determine what types of work schedules - project, part-time, job-sharing, job rotation -could be offered in order to retain persons eligible to retire or nearing retirement eligibility.**
- **adopt statewide successful recruiting and educational initiatives being used within the regions.**
- **regularly schedule and conduct competitive contracting analyses, including the process improvement steps for improving the efficiency and effectiveness of current operations.**

WSDOT Response: We agree on the importance of continuity of leadership in management positions in the Maintenance organization. As the report acknowledges, WSDOT has been aggressive and innovative in its recruiting. We will continue to work with our Human Resource personnel to use innovative ways to retain experienced personnel and recruit new talent, such as early recruitment of college and vocation school students.

WSDOT will continue to contract for certain maintenance activities where it is cost-effective to do so. New opportunities will be evaluated, based on cost-effectiveness, as they arise. Evaluations of highway maintenance contracting implemented in other states have not shown advantages in cost-effectiveness. References supporting this include:

- *The Massachusetts State Auditor's Report on the Privatization of the Maintenance of State Roads in Essex County, October 7, 1992 to October 6, 1993, issue on July 19, 1995.*
- *The Operational, Human Resource, and Financial Implications of the Privatized Highway Maintenance Program of the Province of British Columbia, June 1994, generally referred to as the "Burton Report."*
- *Elliot D. Sklar, You Don't Always Get What You Pay For: The Economics of Privatization*

Therefore, we will proceed carefully in this area to ensure we use both the most efficient and effective methods to address staffing needs and provide our maintenance services. Any consideration of outsourcing must respect the Department's collective bargaining agreements and applicable state law, including the competitive contracting requirements of the Personnel System Reform Act.

OFM Response: We are concerned about the adverse recruitment and retention trends the department is experiencing. Not only are aging baby boomers retiring, it is difficult to attract new recruits with the right training and skill sets. It may be beneficial for WSDOT to evaluate the job classifications that support the rest area functions and identify career track opportunities for individuals within these different classifications. Training would also need to be thoughtfully evaluated to support such career opportunities. It is possible that individuals could have a fulfilling career with ample advancement opportunities as they trained for different facets of maintenance and operations. For example, a focus on rest area management could include training and work experience in contracting, facility design, environmental mitigation, etc.

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Action Steps and Timeframe:

- WSDOT's human resource department, in conjunction with DOP and the different program areas that have maintenance and operation responsibilities, will evaluate career development opportunities to identify career paths and training opportunities within this field. Evaluation to begin by July 1, 2008 and conclude by August 31, 2009.

Finding #14: *WSDOT Does Not Compile Essential Facility Maintenance and Repair for all Activities Limiting the Ability to Estimate the Degree of Risk Concerning the Condition of the Infrastructure*

Recommendation #14: We recommend WSDOT:

- determine from the respective maintenance management systems the current backlogs of essential maintenance and repair.
- prepare a comprehensive listing of the backlogs of essential maintenance and repair and assess the risk that the backlogs may pose, if any.
- include the backlogs of essential maintenance and repair as one element of the M&O budget justification.

WSDOT Response: We agree that defining a measurable backlog of essential maintenance is an important element for program budget justifications. While some operational activities (i.e., Snow and Ice Control) cannot be put in terms of a "maintenance backlog," many other activities can be measured as such. In 2006, WSDOT began determining current backlogs of essential maintenance for those highway features that are managed with the help of computerized maintenance management systems. A team of maintenance personnel is currently developing strategies to expand our abilities to document the extent and costs of essential maintenance backlogs.

OFM Response: There is a pressing need for the department to identify the maintenance and operation costs associated with the major highway expansions underway as a result of the 2003 and 2005 revenue packages.

Action Steps and Timeframe:

- Strategy development projected to be complete in spring 2008. Implementation is dependent on the strategy that is developed.
- We will estimate operations and maintenance costs needed to support the highway expansions underway as a result of the 2003 and 2005 revenue packages and submit this information with the 2009-11 budget request.

Finding #15: *WSDOT's Maintenance Management System Does Not Measure the Backlog of Essential Maintenance Limiting the Ability to Determine Effectiveness of Effort*

Recommendation #15: We recommend WSDOT:

- prioritize the development of a centralized maintenance management system.
- annually calculate an estimate of the current replacement cost of the infrastructure.
- establish an M&O minimum.
- include each measurement in its performance measures program.

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WSDOT Response: WSDOT has implemented many databases that could be considered components of such a system. We currently have activity-specific maintenance management systems used to help maintain traffic signals, highway lighting, intelligent transportation systems, movable bridges, urban tunnels, and traffic signs. We also have databases that document work accomplishments for various other activities and a feature inventory is currently under development. We are evaluating options for a centralized maintenance management system and other comparable options.

The establishment of an M&O minimum budget and the viability of basing this on a percentage of the replacement cost of existing infrastructure will be included in the evaluation of a centralized maintenance management system.

Starting in 2008, measures of the amounts of essential work not being completed will be incorporated into the budget process, where this information is available. We agree that a centralized maintenance management system is one of several types of tools that can help a maintenance organization meet an objective of measuring a backlog of essential maintenance. At this point, we are not ready to prioritize and fund the development of such a system. This issue is being considered as we determine which tool will be best for us to use to measure a maintenance backlog. An option that might be preferred is the expansion of the current, decentralized maintenance management system. Additionally, we currently have no funding to pursue any types of maintenance management system development and implementation so a budget element would also need to be included in the strategy for moving forward.

OFM Response: The National Research Council uses a rule of thumb of 2 percent to 4 percent of the current infrastructure replacement cost as an indicator for how much should be spent on maintenance and operations. The value of the infrastructure in Washington's comprehensive annual financial report is \$14.2 billion, the sum of original costs. According to the audit report, maintenance and operation budgets should total about \$355 million per year when, in fact, they are about half of this amount. The 2007-09 budget allocates \$347 million for the biennium. The audit report recommends prioritizing the development of a centralized maintenance management system, but we believe an even higher priority is identification of short, medium and long-term risks to our infrastructure as a result of not fully funding maintenance work. We need to identify and address the risks to determine where the most cost-effective maintenance investments should be made.

Action Steps and Timeframe:

- Develop strategy to address how to measure a maintenance backlog. Complete in spring 2008. Implementation is dependent on the strategy that is developed.
- Rail, highways, and ferry program managers will document consequences of not funding their most critical maintenance and operation activities and submit that information with each biennial budget request. This information should be submitted with the 2009-11 agency request budget.

Finding #16: *WSDOT Does Not Maintain Summary Information Concerning Past and Future Unfunded Mandates Reducing the Ability to Determine Budget Requirements*

Recommendation #16: We recommend WSDOT:

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- **research, document, and maintain summary information concerning past and future unfunded mandates.**
- **record budget ramifications.**

WSDOT Response: WSDOT agrees that summary information may be helpful in clearly communicating budget needs and is planning on implementing these recommendations. Summary information regarding budgetary impacts of unfunded mandates are typically generated during the budget development process of each biennium. A formal, continuous record of this information has not been traditionally compiled and maintained in a single document.

OFM Response: It seems prudent to identify new requirements and related estimated costs on an annual basis in order to keep the executive and legislative branches apprised of emerging issues and potential budget shortfalls.

Action Steps and Timeframe:

- Identify budget impacts from new unfunded mandates and compile this information into a single document that can be updated and maintained into the future. Complete by June 30, 2008.

Finding #17: *WSDOT is Favorably Organized to Respond Regionally or Statewide to Emergencies or Disasters*

Recommendation #17: We recommend WSDOT:

- **consider creating direct communication links between the Traffic Management Centers and the state's Emergency Operation Centers.**
- **identify SRA deficiencies in acreage, motor vehicle parking capacity, water supply and distribution, emergency power, and the means for disposing of sewage during the surge conditions of a major emergency.**
- **seek federal funding to support safety rest area disaster preparedness upgrades and the construction of additional sites for the most likely risk scenarios.**

WSDOT Response: We agree that direct communication links between TMCs and EOCs are important. As such, direct communication links including telephone, e-mail, and satellite telephones are maintained. These are used on a regular basis during times of EOC activation. In addition to this, video feeds have been established between TMCs and EOCs so personnel in EOCs can now view real-time road conditions via traffic cameras through the TMCs.

A specific program to ready SRAs for disaster roles by, for example, large and costly expansion of water supply and sanitary systems, may not be appropriate. The capabilities of SRAs to fit into the larger disaster readiness picture should be linked to disaster response planning now generally being conducted by the counties.

OFM Response: We defer to the Military Department to guide us on how best to use safety rest areas during emergencies.

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- The alternative uses for SRAs referenced in these findings will be considered during the SRA strategic plan development to be completed by March 2008.

Finding #18: *WSDOT Can Improve SRA Safety to Help Deter Illegal Activities*

Recommendation #18: We recommend WSDOT consider adding cameras and monitoring equipment to the broadband capabilities of current and future SRA installations.

WSDOT Response: We agree. However, funding for such actions depends on legislative appropriation.

OFM Response: We agree, but the cost for providing the necessary technology needs to be evaluated.

Action Steps and Timeframe:

- The Military Department, Washington State Patrol, WSDOT, and local safety officers will collaboratively evaluate potential solutions related to illegal activities. Cost-sharing between these entities will be part of this analysis. Meetings will occur in the spring and summer of 2008 with a budget request submitted for the 2009-11 biennial budget.

Finding #19: *WSDOT Sampling Plans Can Potentially be Reduced to Help Decrease Costs*

Recommendation #19: We recommend WSDOT determine if information needs will permit the reduction of the size of the required random samples for the Maintenance Accountability Process.

WSDOT Response: We agree, and are already taking steps to streamline the sampling/field survey process to provide valid performance data at minimized costs. Recent reductions in MAP survey efforts include use of Pavement Management System data (instead of conducting our own MAP survey) to determine pavement maintenance Levels of Service (LOS). We also use Region Traffic Survey data (instead of conducting our own MAP survey) to determine sign LOS. Not only does this reduce survey costs to the maintenance program, these are examples of larger and more accurate data sets that improve the accuracy of the MAP LOS ratings.

OFM Response: We support the reduction of sampling efforts in order to control costs, but also urge caution. The maintenance division is a leader in providing data driven decision-making. There is a cost associated with collecting and using such data. We need to be vigilant to ensure the same quality decision making is possible using smaller or less frequent sample sizes.

Action Steps and Timeframe:

- MAP field surveys will be conducted annually instead of twice per year, significantly reducing the effort and costs to obtain LOS data while still maintaining adequate confidence levels. This will begin in the 2008 survey. We also will evaluate the effect of changing from biennial to annual data collection.

Finding #20: *WSDOT MAP Organizational Review Level Achievements Do Not Provide Detailed Indication of Accomplishments*

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Recommendation #20: We recommend WSDOT increase the detail of MAP organizational review level achievements to provide additional indication of accomplishments.

WSDOT Response: We agree that MAP information should be reviewed at all levels of the maintenance organization. In addition to the statewide reporting and review level, this should include regions and areas as well. MAP reports are currently developed and reviewed at area, region, and statewide levels. In addition to this, the method of compiling area and region LOS reports into a single statewide report has been revised to more clearly communicate how the lower-level organizational ratings comprise the statewide ratings. This was an improvement recently identified through the Governor's GMAP process.

OFM Response: The department deserves the national recognition it has received for its maintenance accountability process which includes level of service standards for 33 different maintenance activities. We agree that the "score" assigned to an activity does not capture the range of the achievement. The scores should be accompanied by text to capture more detail about the accomplishments.

Action Steps and Timeframe:

- MAP reporting will include narrative summaries as well as numeric or alpha summaries as appropriate. Ongoing.

Finding #21: *WSDOT Implementation of SPMG Recommendations Will Eliminate Many Management and Reporting Inconsistencies*

Recommendation #21: We recommend WSDOT:

- **Ensure SPMG recommendations are followed and published management practices are implemented.**
- **Follow up with activities to assure expected outcomes are realized.**

WSDOT Response: We agree and have recently taken significant steps to improve project delivery and implement best practices. Two examples are the Program Management On-Line Guide and Project Management Reporting System (PMRS.) The Statewide Program Management Group is currently working to develop these tools as well as other project management tools and training.

OFM Response: We agree and also want to emphasize the need for ongoing, sustained and rigorous project management training.

Action Steps and Timeframe:

- Develop and implement policy statements to coordinate consistent and timely application of the PMRS system and provide direction on the various processes involved. Policies and procedures are scheduled to be developed by January 2008.
- Update existing Executive Order 1032.00 for project management (originally issued in 2005) by February 2008.
- Implement the SPMG recommendations statewide and the following activities underway:
 - Development of standard processes for:
 - Cost Control and Earned Value

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- Project Estimate Creation, Review and Approval
- Project Change Management
- Development of a training program for project control staff regarding use of these new business processes
- While the fully integrated PMRS system is scheduled to be completed in January 2010, the cost control/earned value software has currently been implemented to manage some of WSDOT's larger projects and will be configured and available for use in a stand alone mode for all WSDOT projects in May 2008.
- Continue to refine the Cost Estimate Validation Process (CEVP[®]) and Cost Risk Assessment (CRA) estimating procedures and apply these to formulate realistic estimates during the project development process. Ongoing.
- Provide additional emphasis of tools and expectations at the Project Management Training Academy, Statewide Meetings, and Quarterly Reporting. Ongoing.

Finding #22: Many Sampled Projects Contained Planning Inconsistencies and Deficiencies Resulting in Project Inconsistencies

Recommendation #22: We recommend WSDOT:

- **Ensure all aspects of the Project Management On-Line Guide are applied consistently to each project.**
- **Require consistent entry of "lessons learned" into the agency's centralized database.**

WSDOT Response: We agree that the principles and tools detailed in the Project Management On-Line Guide are useful. In addition, the tools provided and training performed through the SPMG's efforts, as listed previously, will help to initiate and support a more coordinated and sophisticated project management approach.

We also agree that "lessons learned" is a valuable tool and are assigning additional resources to improve both the database and the procedures.

OFM Response: The audit recognized that WSDOT has acted upon a number of studies and reviews conducted in the recent past to help it identify ways to improve operations and efficiencies that result in cost savings. As a result, WSDOT is considered a national leader in project management. Nevertheless, there is room to improve. Providing more consistent budgeting, reporting, and handling of change orders across regions and modes is very important. Consistent document layouts, contents and nomenclature are key elements of providing a transparent and accountable rendering of every project.

Action Steps and Timeframe:

- In addition to the actions and timelines for Finding #21, WSDOT will evaluate and assess projects annually to gather lessons learned. WSDOT plans to share lessons learned through the annual Construction conferences, beginning in February 2008.
- Progress of this lessons learned effort and the schedule for developing improvements will be available on the website. Complete by February 2009.

Finding #23: WSDOT's Primary Procurement Strategy of Low Bid Can Limit its Ability to Receive Best Value

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Recommendation #23: We recommend WSDOT pursue legislative authority to use a performance contracting strategy for applicable projects. We recommend the Washington State Legislature modify current contracting requirements to allow performance based contracting as appropriate.

WSDOT Response: We believe that the Legislature has provided the latitude necessary to use the appropriate contracting strategies for projects. WSDOT supports and uses best value selection and performance based contracting within our Design Build contracting approach. On our more complex projects, WSDOT does an in-depth risk profile, cost assessment and contracting analysis to select the appropriate contracting strategies as part of managing the risks. WSDOT's delivery results, as reported in GMAP, show that our current procurement and delivery practices support on-time, on-budget delivery. Our approach is consistent with the way most other states have approached highway-related contracting.

OFM Response: There are circumstances when low bid is not the optimal approach, but best value, design-build, or some other contracting arrangement is. We believe the department has the statutory authority to use these different contracting approaches as particular circumstances warrant.

Action Steps and Timeframe:

- We will continue the current practice of using performance contracting and best value selection as appropriate and consider the recommendation if/when it is necessary to do so.

Finding #24: *WSDOT Has Minimal Consistency in Procedures and Schedules Limiting the Ability to Effectively Manage Projects*

Recommendation #24: We recommend WSDOT:

- **Identify required scheduling software.**
- **Stipulate in its standard specifications, the required scheduling software program to be used by contractors.**

WSDOT Response: We agree and are in the process of implementing this recommendation. Examples that support this statement include implementing scheduling requirements in the 2008 standard specifications to better define schedule requirements. Our new specifications provide scalable project scheduling requirements that are useful and practical for the various types of projects. On our more complicated projects, WSDOT specifies the specific scheduling program (Primavera 6) to be used by contractors. The new scheduling requirements have been discussed with the contracting industry (AGC) and are expected to improve contractor performance in submitting approved schedules, as well as help our managers better manage workforce and on time delivery.

OFM Response: We have supported the purchase, implementation, and training of Primavera software to enhance project management, including scheduling. Ongoing training on the use of the software is, however, the key to success.

Action Steps and Timeframe:

- We will continue to monitor the effectiveness of our contract provisions (“*general special provisions*”) on an annual basis (end of the construction season in November). This includes

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communicating and working with industry to make adjustments to our policies and provisions as needed. Increased focus on training in this area will also occur over the next year through the SPMG effort.

Finding #25: WSDOT Has Had Difficulty in Identifying Trends in High-Risk Quantity Growth Items Resulting in Unnecessary Costs

Recommendation #25: We recommend WSDOT continuously review cost changes and manage as appropriate.

WSDOT Response: We agree that an improved understanding of trend data improves estimating and risk mitigation and allows us to establish policies and practices to support better results.

While we recognize that WSDOT does not have a formal, systematic tracking tool, we monitor this area carefully. Efforts include regularly monitoring industry cost trends, change order roundtables, and HQ change order review and stewardship reviews. In addition, the design team and the construction team communicate through the lessons learned data base and policy and specification changes to improve estimating practices.

A better understanding of trend data generally improves estimating and risk mitigation results, though several of the overruns mentioned in the report were related to weather conditions driving environmental protection activities. These are generally not avoidable or predictable.

OFM Response: A broader understanding of the construction cost index across WSDOT programs would be helpful. For example, the planning, research, environmental, and budgeting departments could all benefit from a deeper understanding of and tracking of these kind of cost indices. Further, trends in the availability of scarce mineral resources, fossil fuels, and metals like copper and steel should be thoughtfully monitored.

Action Steps and Timeframe:

- Create a cross functional team to evaluate existing informal processes and procedures that support trend analysis. Next, develop strategies to support a systematic approach to track, report, review and improve estimating practices by monitoring quantity growth. This is scheduled to be in place by July 2008.

Finding #26: WSDOT's Bid Evaluation and Award Approach Does Not Incorporate Actual Costs and Quantities Potentially Increasing Costs

Recommendation #26: We recommend WSDOT incorporate actual costs and quantities into EBASE to develop cost benchmarks and cost metrics that can be used for estimating future projects and determining cost overrun trends.

WSDOT Response: We disagree with the suggestion that an inadequate bid evaluation potentially increases costs. WSDOT reviews all bid items for material unbalancing of bid item prices that may be a potential detriment to the state as provided by state law. The evaluation includes a review of the submitted bid prices, estimated quantities, engineer's estimate, and other bidders' submitted prices. If a potential detriment is discovered, the bid is rejected. The

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contracting agency is required by law to demonstrate a detriment to the state to reject unbalanced bids. While contractors' bid estimates do not always reflect actual cost on every item, our records show that WSDOT's engineering estimate are consistently within 10% of final completion costs.

OFM Response: At a minimum, an evaluation of engineer estimates, contractor estimates, and actual costs could be sampled and reported to the Legislature and the Governor as part of the annual budget submittal process in order to address concerns about unpredictable and escalating commodity cost increases.

Action Steps and Timeframe:

- We will review our process for opportunities for improvement as the aforementioned SPMG efforts advance.
- We will evaluate a sample of engineer estimates, contractor estimates, and actual costs and report to the Legislature and the Governor with the annual budget submittal.

Finding #27: WSDOT Does Not Participate in an Electronic Bid Evaluation and Award Forum Potentially Limiting Perspective Vendors

Recommendation #27: We recommend WSDOT continue investigating electronic bidding systems to streamline the process, increase competition among vendors and reduce paper use.

WSDOT Response: We agree that electronic bidding is a good business strategy and are actively investigating electronic bidding options and the performance of Electronic Bidding via Transport's EXPEDITE and BID EXPRESS software.

OFM Response: We defer to the department on this finding.

Action Steps and Timeframe:

- Investigate electronic bidding options by March 2008.
- Develop an implementation plan that includes strategies to address best practices, financial impacts, industry input, awareness, and training. Complete by August 2008.

Finding #28: Sampled WSDOT Projects Found No Consistency of Total Project Cost Forecasting Decreasing the Ability to Determine the Volume of Change Orders and Other Categories of Cost Growth

Recommendation #28: We recommend WSDOT:

- **standardize cost reporting practices for all project phases.**
- **utilize cost engineers or business managers who are responsible for projects on a collective or regional basis.**

WSDOT Response: We agree with the recommendation recognizing the importance of cost forecasting and change management tools. Cost reporting is being standardized and better tools are being provided as part of the PMRS system. In advance of statewide implementation, we have hired business managers and adopted industry-standard cost management, estimating and tracking processes for our larger, high-risk projects. We have developed a modern project

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management and reporting system to address the type of cost management and tracking issues identified in this audit finding.

OFM Response: This finding relates to a number of others regarding the need for full implementation of PMRS, and training of project managers. We support WSDOT formalizing its timeline for implementation of the PMRS system and training.

Action Steps and Timeframe:

- See actions and timelines for Recommendation #21.
- WSDOT will submit a work plan and timeline for full implementation of PMRS and project management training to the 2008 Legislature.

Finding #29: *WSDOT Change Order Logs Varied Extensively in Format and Level of Detail Potentially Increasing Risk of Higher Project Costs*

Recommendation #29: **We recommend WSDOT standardize Change Order Logs and integrate each into Project Cost Reports.**

WSDOT Response: We agree with the benefit of providing a consistent tool. This will be undertaken as part of the PMRS commitment. WSDOT's experience does not support the suggestion that this inconsistency potentially increases claims, and has successfully managed disputes. We have not had a formal claim in the recent past.

OFM Response: PMRS should help formalize change order log change order processes.

Action Steps and Timeframe:

- See actions and timelines for Recommendation #21.

Finding #30: *WSDOT Does Not Use Rate Adjustments Based Upon a Pro-Rata of Bid Contract Unit Rates Resulting in Increased Costs*

Recommendation #30: **We recommend WSDOT use, where appropriate, rate adjustments based upon a pro-rata of the bid contract unit rates to assure the optimization of the value of changes.**

WSDOT Response: We agree that an extension or pro rata of unit bid pricing is one of the strategies that can and should be used when appropriate. WSDOT supports several different methods for estimating change costs depending on the nature of the work, the risk, the urgency and the nature of the change. Extending unit bid prices, negotiated rates, lump sum costs, or force account rates are all appropriate pricing strategies depending upon the risks and timing of the change. Our philosophy is to maximize competition and manage the risk appropriately by paying fairly and equitably for the work performed and as well as when changes occur.

We also agree that it is important to clearly understand the contract, the contractor's price and the state's position when negotiating, and that additional training in this area is appropriate. WSDOT's construction office has developed a change order training course and will incorporate methods of pricing and negotiating into the training discussions. WSDOT will continue to emphasize aggressive cost management and change strategies.

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OFM Response: We agree with WSDOT. We suggest WSDOT use a sampling approach on various-sized projects located in different regions to evaluate change orders.

Action Steps and Timeframe:

- WSDOT's project management-related efforts include placing business managers in the project offices and providing cost tracking and estimating software, which will address this recommendation. We are in the preliminary stages of this process, and will review progress after the next construction season (November 2008).
- Based on the results of project samples, WSDOT will take actions as appropriate to improve the cost estimation. Ongoing.

Finding #31: *WSDOT Does Not Aggressively Manage Change Orders Resulting in Increased Project Costs*

Recommendation #31: We recommend WSDOT use, where appropriate, cost engineers or quantity surveyors to aggressively manage all change costs during construction, and maximize the cost-benefit of deployment through integrating activities such as cost report management and budget estimating.

WSDOT Response: We believe that we aggressively manage change orders, although we do agree with the recommendation that we can improve our process. WSDOT has demonstrated that managing construction costs and determining work items with a higher risk of cost increase is a priority.

The auditors propose achieving savings by using an extension of unit bid prices for all work done through change orders. This approach focuses on achieving savings once the project has already begun. We believe we currently achieve greater savings by focusing on reducing the total cost of the project at the beginning. With our current approach, we not only aggressively manage change orders, but also let our contractors know upfront that we will pay fairly and equitably for work performed, including change orders. We believe this philosophy results in lower project bid prices, as opposed to mandating one method to price change orders, which would likely result in much higher initial bids from contractors to cover potential risks of project changes.

We will implement new project management systems as observed by the auditors on our larger projects including the Tacoma Narrows Bridge, Hood Canal Bridge, and Alaskan Way Viaduct projects. These projects currently have project controllers and business managers to help manage cost issues and provide the reporting/forward forecasting as suggested. We have invested significant time and energy into providing training and tools to address this issue. Our Project Engineers are trained to be aggressive in their active management of construction cost changes. The regions and headquarters play a role in oversight of every change order.

Tools that are currently being used include the Cost Estimate Validation Process (CEVP), Cost Risk Assessment (CRA), Risk Matrices, Project Management Plans, Schedule Management, and Value Engineering.

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OFM Response: With appropriate training, tools, and staffing on higher risk projects, WSDOT engineers and project managers can provide the same quality assurance and oversight as cost engineers or quantity surveyors.

Action Steps and Timeframe:

- We have recently begun integrating business managers in our project offices and will continue to do so. Refer to SPMG Timelines under Recommendation #21. WSDOT is in the preliminary stages of this process, and will review progress after the next construction season (November 2008).

Finding #32: *WSDOT's Categorization of Change Costs Limits the Ability to Effectively Track and Manage*

Recommendation #32: **We recommend WSDOT use change source categories to provide a basis for understanding changes on all projects.**

WSDOT Response: We agree. We are currently pursuing several efforts in this area. We are developing changes to our source codes and the process we use to collect the information on changes. These efforts, along with the search capabilities from our new Data Mart tool, will allow the department to better identify systematic problems. Our evolving lessons learned data base is also a convenient tool for sharing this information with project designers. In addition, SPMG efforts will provide better access to change-related data.

OFM Response: We agree and reiterate that training is critical to success.

Action Steps and Timeframe:

- The new and improved system for categorizing change orders is scheduled to be in place by the end of February 2008. Headquarters construction staff will be introducing the system to the regions at the regional construction conferences in February. A follow up will be performed as part of an annual review in November 2008.

Finding #33: *WSDOT's Independent Engineer's Estimates Do Not Optimize Value of Change Orders Limiting the Ability to Determine Fairness and Reasonableness of Prices*

Recommendation #33: **We recommend WSDOT require greater price transparency from contractors for proposed change costs.**

WSDOT Response: We agree with the recommendation and apply it to proposed change orders when it is appropriate. WSDOT's philosophy is to give the contractor the incentive to incorporate and manage the changed work in a timely and efficient manner. Depending upon the cost, nature and urgency of the change, it may be appropriate to require the contractor to provide detailed documentation with regard to their costs. Exercising this practice for every change would not be cost effective. WSDOT believes that the engineer's estimate is a good and appropriate tool to use for estimating the type and value of changed work. We also support the need to gather information and discuss it with contractors when the impacts and approach to new work is difficult to determine.

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OFM Response: The proposed approach of sampling contracts in the action steps for Finding #30 could also be used to gather value of change order information.

Action Steps and Timeframe:

- We have the ability to ask for this information under our current contract structure and do so when it is appropriate. Training on this subject is currently being provided as part of the Headquarters change order training. Ongoing.

Finding #34: *WSDOT's Current Performance Measures Could be Enhanced to Provided Additional Indicators of Performance*

Recommendation #34: We recommend WSDOT continue to develop and maintain project performance indicators that can be monitored at state and project levels.

WSDOT Response: We agree. In addition to current efforts as noted in the report, SPMG will move us ahead in this area.

OFM Response: OFM has statutory responsibility for producing an attainment report that reflects the progress we are making in preservation, safety, mobility, environment, and stewardship. This report will document system performance and be provided to the Legislature on a biennial basis.

Action Steps and Timeframe:

- Continue to track and evaluate performance measures as reported in the *Gray Notebook* and GMAP. Ongoing.