



Minnesota Department of Transportation

Memo

Office of Audit
Mail Stop 190
395 John Ireland Blvd
St. Paul, Minnesota 55155

Office Tel: 651-366 4140
Fax: 651-366 4155

January 23, 2009

To: Thomas K. Sorel, Commissioner
Khani Sahebjam, Deputy Commissioner/Chief Engineer

From: Daniel E. Kahnke, CGFM
Audit Director *Daniel E. Kahnke*

Subject: Audit of OMB Circular A-133
Single Audit Compliance Requirements
Fiscal Year 2008
Audit Report No. 09-800-71
(Responses Included)

This is the final audit report of the above stated subject. This includes the original audit report and the written responses from appropriate division directors.

This is being released in accordance with Administrative Procedure 2.84-3-P-1A on audit follow-up. Requests for copies of the audit report will be responded to by furnishing this final version of the audit report.



Department of Transportation

Memo

Office of Audit
Mail Stop 190
395 John Ireland Blvd
St. Paul, Minnesota 55155

Office Tel: 651-366 4140
Fax: 651-366 4155

November 20, 2008

To: Thomas K. Sorel, Commissioner
Khani Sahebjam, Deputy Commissioner/Chief Engineer

From: Daniel E. Kahnke, CGFM
Audit Director

Subject: Audit of OMB Circular No. A-133
Single Audit Compliance Requirements
Fiscal Year 2008
Audit Report No. 09-800-71

As agreed upon with the Office of the Legislative Auditor, we have audited the Minnesota Department of Transportation's (Mn/DOT's) compliance with specific Single Audit Compliance Requirements for the following federal financial assistance programs for the year ended June 30, 2008.

<u>Program</u>	<u>CFDA</u>	<u>Amount</u> <u>(Millions)</u>
Highway Planning and Construction	20.205	\$763.2
Airport Improvement Program	20.106	\$58.3

In auditing compliance with regulations relating to federal award expenditures for the Highway Planning and Construction Program and Airport Improvement Program, we conducted a financial audit as described in the Government Auditing Standards 1.22(b), published by the Comptroller General of the United States.

The management of the Mn/DOT is responsible for Mn/DOT's compliance with these requirements. The Mn/DOT Office of Audit is responsible to express an opinion on compliance with these requirements based on the audit.

We audited the Single Audit Compliance Requirements for the following: Highway Planning and Construction and Airport Improvement as outlined in the Office of Management and Budget (OMB) Circular No. A-133, Audits of States, Local Governments, and Non-Profit Organizations.

The audit was conducted per discussion and agreement with the Office of the Legislative Auditor. This included a review for compliance with the Letter of Agreement and Stewardship Plan between the Federal Highway Administration and Mn/DOT.

The requirements and principles of OMB Circular No. A-87 (Cost Principles for State, Local, and Indian Tribal Governments) and 49 CFR Part 18, the "Common Rule" were part of the audit. The audit of compliance with these requirements was conducted in accordance with generally accepted government auditing standards; the Government Auditing Standards; and OMB Circular No. A-133.

Those standards and OMB Circular No. A-133 Compliance Supplement require the planning and performance of the audit to obtain reasonable assurance about whether material noncompliance with the requirements referred to above occurred. An audit includes examining, on a test basis, evidence about Mn/DOT's compliance with these requirements. We believe that our audit provides a reasonable basis for our opinion.

The audit included an assessment of internal controls over the collection and use of federal funds related to the following areas: Construction and Contract Administration, Federal Aid, Right of Way, Aeronautics, and selected Mn/DOT district and city/county highway construction projects.

In planning and performing the audit, we evaluated Mn/DOT's internal controls over compliance with requirements for the two federal financial assistance programs. The Mn/DOT management is responsible for establishing and maintaining effective internal control over compliance with requirements of laws, regulations, contracts, and grants applicable to federal programs. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of internal control structure policies and procedures.

A sound internal control structure should provide management with reasonable, but not absolute, assurance that OMB Circular No. A-133 Compliance Supplement requirements are met and Mn/DOT policies and procedures are followed. The internal control structure can become inadequate or ineffective because of either changes in operating conditions or deterioration of the effectiveness of the design or implementation of policies and procedures.

Our audit finding statements relate specifically to the A-133 Compliance Supplement. The following discussion describes the applicability of the A-133 Compliance Supplement to the Single Audit in general and Findings I through IV and Observations I through III for this year specifically. These findings, observations, and other audit results were discussed as applicable with project management and personnel from Mn/DOT districts, as well as cities and counties.

We also discussed the findings, observations and other audit results as applicable with management and personnel from the following offices: Aeronautics, Construction and Innovative Contracting, Environmental Services, Finance, Land Management, Materials and Road Research, and the State Aid for Local Transportation Division.

The A-133 Compliance Supplement Part 1 indicates that the audit should recognize that there may be provisions of contract and grant agreements that are not specified in law or regulation and, therefore, the specifics of such are not included in the Compliance Supplement. Accordingly, the audit includes reasonable procedures to ensure that compliance requirements are current and to determine whether there are any additional provisions of contract and grant agreements that should be covered by the audit. Reasonable procedures consist of discussion with Mn/DOT personnel and review of contract and grant agreements and compliance with the associated requirements.

A-133 Compliance Supplement suggested audit procedures apply to many different federal programs and are necessarily general in nature. We are expected to exercise judgment to determine whether the Compliance Supplement suggested audit procedures are sufficient, or whether additional or alternative audit procedures are needed. The Compliance Supplement can only be considered “safe harbor” if additional provisions of contract and grant agreements are identified and considered as part of the audit.

A-133 Compliance Supplement Part 1 also states that we have responsibility under Generally Accepted Government Auditing Standards (GAGAS) for other requirements when specific information comes to our attention that provides evidence concerning the existence of possible noncompliance that could materially affect Mn/DOT’s major programs. American Institute of Certified Public Accountants (AICPA) Audit Guide - Government Auditing Standards and Circular A-133 Audits, requires us to include in the findings and questioned costs material noncompliance (\$10,000 or more) with laws, regulations, and contracts related to the Highway Planning and Construction and Airport Improvement programs.

A-133 Compliance Supplement Part 3

The A-133 Compliance Supplement Part 3 reiterates that suggested audit procedures are provided to assist auditors in planning and performing the audit, and advises us to exercise judgment to determine if additional or alternative audit procedures are needed.

A-133 Compliance Supplement Part 3 A. Activities Allowed or Unallowed

The A-133 Compliance Supplement Part 3, A. Activities Allowed or Unallowed requires the audit to identify the types of activities which are either specifically allowed or prohibited by the laws, regulations, and the provisions of contract or grant agreements pertaining to the program. On this basis, the conditions cited in all of the Findings are considered to be activities unallowed.

A-133 Compliance Supplement Part 3 B. Allowable Costs/Cost Principles

The A-133 Compliance Supplement Part 3 B. Allowable Costs/Cost Principles, through OMB Circular A-87, requires us to evaluate if costs are reasonable and necessary; conforming to any limitations or exclusions set forth in the circulars, Federal laws, State or local laws, sponsored agreements, or other governing regulations such as Generally Accepted Accounting Principles (GAAP); and adequately documented. On this basis, the conditions cited in all of the Findings are not considered to constitute allowable costs and are described in Attachment III as questioned costs.

A-133 Compliance Supplement Part 3 M. Subrecipient Monitoring

The A-133 Compliance Supplement Part 3 M. Subrecipient Monitoring requires the monitoring of subrecipient activities to provide reasonable assurance that subrecipients of federal funding (airports, cities, and counties) administer Federal awards in compliance with requirements. The Single Audit includes an evaluation of compliance with requirements for the Airport Improvement Program, in addition to the Highway Planning and Construction Program.

For the Highway Planning and Construction Program, the Letter of Agreement and Stewardship Plan between Federal Highway Administration (FHWA) and Mn/DOT indicates that Mn/DOT retains its responsibilities under federal law and regulations for all activities delegated to cities and counties. The Letter of Agreement and Stewardship Plan also indicates that Mn/DOT will provide the necessary processes, approvals, oversight, and review to ensure that delegated projects receive adequate supervision and inspection, and that they are completed in conformance with approved plans and specifications and applicable federal requirements.

The State Aid for Local Transportation Division provides technical assistance to cities and counties for highway construction, including training for Right of Way acquisitions. This assistance could improve future compliance with requirements.

Ongoing subrecipient monitoring is needed to achieve compliance with requirements by cities and counties, especially since personnel with less experience and knowledge regarding the requirements are becoming increasingly involved in project management. Findings I and IV fall under this part of the Compliance Supplement.

A-133 Compliance Supplement Part 3 N. Special Tests and Provisions

The A-133 Compliance Supplement Part 3 N. Special Tests and Provisions states that specific requirements unique to each Federal program are found in the laws, regulations, and the provisions of contract or grant agreements pertaining to the program.

Part 3 N. Special Tests and Provisions requires us to identify any additional compliance requirements which could be material, and indicates that reasonable procedures to identify such compliance requirements would be inquiry of non-Federal entity management and review of the contract and grant agreements pertaining to the program. Any such requirements which may have a direct and material effect on a major program shall be included in the audit.

The A-133 Compliance Supplement Part 3 N. Special Tests and Provisions also refers to the A-133 Compliance Supplement Part 4, Agency Program Requirements, for specific compliance requirements, audit objectives, and suggested audit procedures.

The A-133 Compliance Supplement Part 4 requires Mn/DOT to have a have a sampling and testing program for construction projects to ensure that materials and workmanship generally conform to approved plans and specifications. The Part 4 also requires an evaluation of the sampling and testing program. Findings I and III as well as Observations I and II fall under this part of the Compliance Supplement.

We also considered whether the department was managing or utilizing its resources in an economical and efficient manner and whether the department was effective in achieving its program objectives.

Attachments and Exhibits

Exhibit I provides a list of the construction projects reviewed during the audit; a total of 18 projects were audited. Exhibit II describes specific items included in the construction project material testing review portion of the audit.

See Attachment I for Other Internal Control Issues Discussed With Management. These issues were considered significant enough to discuss with management in the Single Audit Report, but not rising to the level of significance of a finding. If left uncorrected, these issues could rise to the level of significance of a finding in future Single Audit reports.

We do not audit the same projects from the previous year's audit a second time when conducting follow-up on findings from the previous year's Single Audit. Instead, we audit different projects each year. If we identify the same findings, they are considered repeat findings at the Highway Planning and Construction Program or Airport Improvement Program level, applicable and of relevance to the entire Mn/DOT and state. Concerns repeated from the Fiscal Year 2007 Single Audit Report No. 08-800-27 are noted within and at Attachment II, Audit Follow up of Prior Year's Findings.

4 of 6 findings for this year were repeated from last year. The Grading and Base Materials Control Finding (II) this year describes a systemic problem with compliance. Management expressed concerns about knowledge transfer during staff turnover, feeling it could impact oversight effectiveness and compliance with requirements.

Attachment III lists questioned costs, which totaled \$20.8 million. We questioned project costs for instances of significant noncompliance with requirements per state or federal law, project proposals, Mn/DOT requirements, or a combination thereof.

Attachment IV lists disclosures, which are conditions we identified during the audit that we feel are not audit findings or Other Internal Control Issues Discussed With Management. Instead, the disclosures are significant conditions or events that we feel could impact the federal programs audited as well as the State of Minnesota as a whole.

Projects Without Questioned Costs

The following State Projects did not have any questioned costs: 2782-281, Metropolitan District Trunk Highway 62 Crosstown; 62-596-01, Ramsey County Trunk Highway 36; 56-682-07 Ottertail County State Aid Highway 82; 24-648-03 Freeborn County State Aid Highway 48; 54-639-32 Norman County State Aid Highway 39; 77-611-31 Todd County State Aid Highway 11; and 195-010-07 City of Eagan Dodd Road. Also, there were no projects with questioned costs for bituminous materials control.

Summary

In our opinion, except for the above concerns and the issues discussed in Findings I through IV and Observations I through III, the Minnesota Department of Transportation substantially complied with the provisions referred to in the scope paragraphs. With respect to items not tested, nothing came to our attention that caused us to believe that the Minnesota Department of Transportation had not complied, in all material respects, with those provisions.

cc: K. Z. Gray
R. C. Winter
J. A. Skallman
T. A. Henkel
M. A. Barnes
B. J. Arseneau
P. R. Tschida
F. W. Pafko
T. D. Ravn
K. L. Shannon
S. R. Peterson
M. A. Prescott
Sue Stein
L. Davis-Johnson
MaryAnn Frasczak
J. R. Nobles/J. S. Riebe, OLA
D. Turner, FHWA
File

Audited by:
Brian Cherry
Dave Christensen
Mike Johnson
David Wolvert

EXHIBIT I

Highway Construction Projects Audited Fiscal Year 2008

State Project Number	Federal Project Number	Project District	Location	Engineer	Contract Amount	Amount in FY 2008
TRUNK HIGHWAY PROJECTS						
6920-45	HPP MN15 (103)	1	TH 53	Kevin Adolfs	\$29,925,590	\$13,636,735
7702-42	NH 0010 (306)	3	TH 10	Darren Nelson	\$10,234,039	\$9,265,857
0301-47	BAP-NH 0010 (309)	4	TH 10	Jeff Perkins	\$32,547,484	\$23,277,707
5305-55	NH 0060 (304)	7	TH 60	Keith Bloomgren	\$11,573,862	\$3,946,690
4302-44	STPX 4301 (012)	8	TH 22	Dave Johnston	\$20,863,569	\$5,943,507
2783-120	ER MN07 (300)	MW	TH 35	Jon Chiglo	\$233,763,000	\$189,094,242
2782-281	IM 0353 (287)	MW	TH 62	Steve Barrett	<u>\$288,306,282</u>	<u>\$114,532,709</u>
TRUNK HIGHWAY PROJECT TOTALS					\$627,213,826	\$359,697,447
CITY/COUNTY PROJECTS						
38-602-23	STPX 3806 (119)	1	Lake County	Alan Goodman	\$4,575,230	\$2,897,789
54-639-32	BR 5407 (160)	2	Norman County	Milton Alm	\$2,496,844	\$1,209,178
77-611-31	HSIP STP 7703	3	Todd County	Duane Lorsung	\$2,529,125	\$1,121,261
220-591-01	SRTS 8807 (159)	3	City of Sartell	Mike Nelson	\$171,924	\$121,500
56-682-07	STPX 5606 (033)	4	Ottertail County	Richard West	\$3,036,416	\$1,532,182
24-648-03	STPX 2407 (131)	6	Freeborn County	Sue Miller	\$1,575,290	\$930,675
53-635-21	STPX 5306 (011)	7	Nobles County	Stephan Schnieder	\$5,403,041	\$1,320,014
87-603-27	STPX 8707 (036)	8	Yellow Medicine County	Andy Sander	\$3,366,830	\$2,240,000
62-596-01	STP TEA MN (89)	MW	Ramsey County	Ken Haider	\$27,562,563	\$12,013,403
195-010-07	STPX 1907 (024)	ME	City of Eagan	Tom Colbert	\$9,100,955	\$5,466,301
02-611-29	STPX 0207 (020)	MW	Anoka County	Douglas Fischer	<u>\$16,983,434</u>	<u>\$3,676,181</u>
CITY/COUNTY PROJECT TOTALS					\$76,801,652	\$32,528,484
ALL PROJECTS REVIEWED GRAND TOTAL					\$704,015,478	\$392,225,931

The above 18 highway construction projects were all field audited. 8 of the 11 City/County Projects audited are Delegated Contract Process (DCP) projects supervised by cities and counties. State Projects 62-596-01, 195-010-07, and 02-611-29 were supervised by Mn/DOT.

EXHIBIT II
Material Testing Items Audited
By Project By Bid Item
Fiscal Year 2008

State Project Number	Location	Project Bid Items Reviewed
TRUNK HIGHWAY PROJECTS		
6920-45	TH 53	Type SP 12.5 Wearing and Non Wearing Course Mixtures Aggregate Base Class 6
7702-42	TH 10	Type SP 12.5 Wearing and Non Wearing Course Mixtures Aggregate Base Class 6
0301-47	TH 10	Type SP 12.5 Wearing and Non Wearing Course Mixtures Aggregate Base Class 5 and Aggregate Base Class 6
5305-55	TH 60	Aggregate Base Class 5 Aggregate Surfacing Class 5 Aggregate Shouldering Class 1 Aggregate Bedding
4302-44	TH 22	Concrete Pavement Standard and Irregular Width Structural Concrete Epoxy Coated Reinforcement Bars and Reinforcement Bars Dowel Bars Concrete Coring Aggregate Base Class 5
2783-120	TH 35	Superstructure PT Strand Drilled Shafts Pier 2 & Pier 3
2782-281	TH 62	Structural Concrete
CITY/COUNTY PROJECTS		
38-602-23	Lake County	Aggregate Base Class 5 Bituminous Pavement Reclamation Granular Borrow
54-639-32	Norman County	Structural Concrete Epoxy Coated Reinforcement Bars and Reinforcement Bars
77-611-31	Todd County	Type SP 12.5 Wearing Course Mixture
220-591-01	City of Sartell	Type LV3 Wearing Course Mixture Aggregate Base Class 5
24-648-03	Freeborn County	Concrete Pavement
53-635-21	Nobles County	Type SP 12.5 Wearing Course Mixture Type SP 19.0 Non Wearing Course Mixture Aggregate Base Class 5 Aggregate Shouldering Class 1
87-603-27	Yellow Medicine County	Type SP 12.5 Wearing and Non Wearing Course Mixtures Aggregate Base Class 5 Aggregate Shouldering Class 1
62-596-01	Ramsey County	Structural Concrete
195-010-07	City of Eagan	Type SP 12.5 Wearing Course Mixture
02-611-29	Anoka County	Structural and Bridge Slab Concrete Epoxy Coated Reinforcement Bars

The above items were reviewed for compliance with materials testing requirements. Concerns were discussed with the State Aid Engineer, State Construction Engineer, Office of Materials and Road Research Director, and project personnel.

TABLE OF CONTENTS

Materials control for grading and base construction items requires added attention and improvement. **Finding I: Pages 1 through 8**

Prepayment of liability insurance premium and performance bond costs is not in accordance with generally accepted accounting principles. **Finding II: Pages 9 and 10**

Need to comply with requirements for concrete materials control. **Finding III: Pages 11 and 12**

Improvements needed in compliance with environmental requirements. **Finding IV: Pages 13 through 16**

Developing and implementing individual gradation requirements for grading and base construction items could enhance controls over uniformity of materials. **Observation I: Page 17**

Opportunity to clarify requirements for non-continuous bituminous plant operation and paving restrictions. **Observation II: Pages 18 through 20**

Use of the Transportation Automated Control System on additional highway construction projects could improve efficiency. **Observation III: Page 21**

Attachment I: Other Internal Control Issues Discussed With Management - Pages 22 through 24

Attachment II: Audit Follow up of Prior Year's Findings - Page 25

Attachment III: Questioned Costs - Pages 26 through 28

Attachment IV: Disclosures – Page 29

FINDINGS

The following findings are considered financial and compliance in nature. Findings are intended to assess if financial operations are properly conducted; if financial data is presented fairly; and if all applicable laws, regulations and administrative requirements are followed.

FINDING I – MATERIALS CONTROL FOR GRADING AND BASE CONSTRUCTION ITEMS REQUIRES ADDED ATTENTION AND IMPROVEMENT

Significant systemic noncompliance with requirements was noted for grading and base construction items. This area was evaluated for 9 of the 18 total projects audited. We feel that for instances of repeated and widespread noncompliance involving multiple requirements, project personnel Grading and Base technical certifications should be evaluated. Questioned costs totaled \$5.9 million.

Failing materials on 2 of 9 projects need further evaluation

For State Project 87-603-27 Aggregate Base Class 5 valued at \$917,000, shale content exceeded specification limits. Testing for shale content was not completed and communicated to project personnel until July 31, 2007, the same day that placement of the Aggregate Base Class 5 into the roadway was completed.

Project personnel stated that normally they sample for shale content testing from the roadway (after placement of base material into the roadway) and explained if they felt there was a problem with shale, they would have sampled and tested it from the stockpile prior to placement into the roadway. Project personnel felt that Aggregate Base properties such as shale content should be certified and this should be written into the special provisions.

Change Order No. 1, reducing payment for the Aggregate Base Class 5 by 5% (\$46,000) due to shale content exceeding specification limits, was executed on September 26, 2007. The \$46,000 reduction in payment was first applied on March 11, 2008, during the audit of State Project 87-603-27.

Grading and Base Engineering Unit personnel commented that normally this type of situation would be referred to the Grading and Base Engineer for a recommended reduction in payment. We provided the Grading and Base Engineering Unit shale test results for State Project 87-603-27. The Grading and Base Engineering Unit subsequently recommended a 25% (\$229,000) reduction in payment for the Aggregate Base Class 5.

Grading and Base Engineering Unit personnel felt that the 5% reduction currently agreed to by the contractor and the county may favor the contractor. Project personnel explained that they decided on a 5% reduction in payment because there was no specific guidance in the Standard specifications for Construction regarding what reduction in payment should be taken. The department is evaluating the impact of high shale content on roadways. We were provided varying opinions and exact disposition is unclear.

State Project 87-603-27 files included a suggestion that the Mn/DOT Grading and Base Engineer should be contacted for a recommended reduction in payment. Project personnel indicated that they did not request a formal recommendation, feeling that a recommendation from the Mn/DOT Grading and Base Engineer would be too arbitrary.

In an August 21, 2007 letter, the contractor indicated that their shale testing showed results falling within requirements and also indicated that the shale content increased as the aggregate was handled more. Grading and Base Engineering Unit personnel did not agree with the contractor's assertion that the shale content would increase as the aggregate was handled more.

Project personnel indicated that they did not anticipate much shale breakdown because the road would have low traffic volume. Grading and Base Engineering Unit personnel explained that the freeze-thaw cycle, not low traffic volume, would affect the amount of shale breakdown.

Grading and Base Engineering Unit personnel explained that shale breakdown could lead to the heaving of roadway pavements. Grading and Base Engineering Unit personnel also explained that the Aggregate Base Class 5 strength could be reduced as the shale breakdown occurred, leading to under design of the roadway structure.

For State Project 53-635-21 Aggregate Shouldering Class 1 valued at \$104,000, project files included a November 21, 2007 recommendation from the Grading and Base Engineering Unit for a \$6,000 price reduction for failure on the #200 sieve that had not yet been taken. Project personnel acknowledged that no price reductions had been taken.

Grading and Base Reports were inaccurate, incomplete, or not done for 7 of 9 projects

The grading and base item quantities, minimum test rate and tests required are calculated and entered into the Preliminary and Final Grading and Base Reports manually; automating these functions could improve accuracy.

State Project 38-602-23

For Aggregate Base Class 5 valued at \$871,000, project personnel did not list the number of Quality Assurance (QA) moisture content tests on the Preliminary or Final Grading and Base Reports as required by the Grading and Base Manual. Office of Materials and Road Research personnel explained that moisture content tests, which verify that the 5% moisture minimum, help to ensure that satisfactory compaction is achieved.

QA moisture content tests were not taken for the Aggregate Base Class 5. The Grading and Base manual and Grading and Base Engineering Unit website provide detailed instructions for completing the Preliminary and Final Grading and Base Reports.

For Bituminous Pavement Reclamation valued at \$268,000, project personnel did not list the required number of QA gradation, Dynamic Cone Penetrometer (DCP), and moisture content tests on the Preliminary and Final Grading and Base Reports. No QA DCP tests or moisture content tests were done. The number of QA gradations met requirements.

Project personnel felt that Grading and Base Technical Certification training did not include instructions for completion and submittal of the Preliminary and Final Grading and Base Reports. Grading and Base Technical Certification training handouts for at least the past 5 years include clear and detailed illustrations and instructions for completing the Preliminary and Final Grading and Base Reports.

For State Projects 6920-45; 4302-44; 53-635-21; and 220-591-01, Grading and Base Reports were not done properly and tests were missed. For State Projects 87-603-27 and 7702-42, Grading and Base Reports were not done properly but tests were not missed.

The Certification of Aggregates and Granular Materials was not completed and submitted correctly for 6 of 9 projects that were audited for grading and base materials control compliance.

For State Project 38-602-23, the Contractor's Certification of Aggregates and Granular Materials was not provided by the Contractor to the Engineer prior to placement of and payment for Aggregate Base Class 5 valued at \$871,000 as required by specification. The contractor later forwarded an outdated Certification of Aggregates. Similar conditions were noted for Bituminous Pavement Reclamation valued at \$268,000 and Granular Borrow valued at \$1.5 million.

Project personnel felt that Grading and Base Technical Certification training did not include instructions for completion and submittal of the Contractor's Certification of Aggregates and Granular Materials. Grading and Base Technical Certification training handouts for at least the past 5 years include clear and detailed illustrations and instructions for completing and submitting the current Contractor's Certification of Aggregates and Granular Materials.

The Contractor's Certification of Aggregates and Granular Materials was submitted to project personnel either late or not at all for the following additional State Projects: 4302-44; 87-603-27; 53-635-21; 5305-55; and 220-591-01. Project personnel either were not aware of the requirement or did not act to meet the requirement.

In the Certification of Aggregates and Granular Materials, the Contractor attests to the Engineer that grading and base materials delivered to the project conform to specifications. The certification includes a summary of the number of QC gradations and a statement that the contractor understands that the grading and base materials will be sampled and tested by the Agency, with any needed corrective action required at the Contractor's expense.

Quality control gradations were not done in sufficient quantity and submitted timely for 4 of 9 projects

For State Project 4302-44, only 4 of 67 required QC gradation tests were submitted by the contractor to project personnel. These 4 QC gradations were not done prior to placement of and payment for Aggregate Base Class 5 valued at \$514,000. The gradations must be done per the Schedule of Materials Control and submitted by the Contractor to the Engineer prior to placement of and payment for grading and base items per specification. Project personnel did not know why they were short of the required number of gradation tests.

Similar conditions (required QC gradations short, not done and submitted prior to placement and/or payment) were noted for State Projects 7702-42, 53-635-21, and 87-603-27. Project personnel either were not aware of the requirement or did not act to meet the requirement.

In submitting QC gradations prior to placement of and payment for aggregate base as required, the Contractor proactively provides evidence to the Engineer that the material meets specification. Quality Assurance (QA) testing is done after material is placed into the roadway. For projects missing QC gradations, QA gradations were taken after the material was placed and results substantially met requirements.

Percent crushing tests were not done as required for 6 of 9 projects

Quality Control and/or Quality Assurance Percent Crushing tests required by the Schedule of Materials Control were not done for State Projects 38-602-23; 7702-42; 53-635-21; 87-603-27; 0301-47; and 220-591-01. Project personnel did not act to ensure the tests were done as required.

OMRR personnel explained that performing the tests help to verify that the requirements are met, as well as addressing the risk of contractors screening out crushed aggregate for more profitable uses.

Aggregate quality tests were not done as required for 2 of 9 projects

Aggregate Quality tests required by the Schedule of Materials Control were not done for aggregate base items for State Projects 38-602-23 and 53-635-21. Project personnel felt that they were familiar with aggregate sources and were confident that maximum shale content requirements were not exceeded. Conducting aggregate quality tests provides assurance that the requirements are met.

Materials Certification Exception Summaries did not list exceptions to grading and base materials control requirements for 2 of 9 projects

For State Projects 38-602-23 and 220-591-01, exceptions to material testing requirements for grading and base construction items were not all listed on the Materials Certification Exception Summary. The Grading and Base Manual and State Aid for Local Transportation Division Technical Memorandum No. 02-SA-01 require these exceptions to be listed on the Materials Certification Exception Summary. State Project 38-602-23 personnel stated that they were not aware that the testing in question was required, so the missed tests were not listed on the Materials Certification Exception Summary.

Listing missed tests on the Materials Certification Exception Summary assures conformance with the approved plans, specifications, special provisions, and the Schedule of Materials Control, as well as documenting resolution to nonconformance.

Recommendations

1. Operations Division Director and State Aid for Local Transportation Division Director, in consultation with Policy, Safety & Strategic Initiatives Division Director work with cities, counties, and districts to ensure compliance with requirements for grading and base materials control, including the following items.
 - a. Consult with the Grading and Base Engineering Unit to ensure that payment reductions for failing materials are appropriate.
 - b. Correctly complete and properly submit the Preliminary and Final Grading and Base Reports.
 - c. Contractors complete and submit the current version of the Contractor's Certification of Aggregates and Granular Materials prior to placement of and payment for grading and base construction items.
 - d. Moisture Content, Dynamic Cone Penetrometer, Quality Control Gradation, Percent Crushing, and Aggregate Quality tests are completed.
 - e. Exceptions to material testing requirements are listed on the Materials Certification Exception Summary.
2. Policy, Safety & Strategic Initiative Division Director determine the benefits of automating the Preliminary and Final Grading and Base Reports.
3. Operations Division Director and State Aid for Local Transportation Division Director, in consultation with Engineering Services Division Director and Policy, Safety & Strategic Initiative Division Director, evaluate Grading and Base Technical Certifications for project personnel involved in repeated occurrences of noncompliance. Take appropriate action as necessary to hold responsible personnel accountable.

Responses to Recommendations

Recommendation 1

Operations Division

The Operations Division in consultation with the State Aid for Local Transportation and Policy, Safety and Strategic Initiatives Divisions will continue to work with the districts, cities and counties to emphasize the requirements for materials control for grading and base construction items. The districts will discuss these requirements at district construction, resident engineer and CMG meetings and through departmental training.

Responses to Recommendations (continued)

State Aid for Local Transportation Division

Recommendation 1 a.

Specification 1501.1 in the 2005 MN/DOT Standard Specifications for Construction State the following:

“DECIDING QUESTIONS

The Engineer will decide all questions regarding:

- (a) Quality and acceptability of materials furnished and work performed.
- (d) Measurement, control of quantities and the amount of any deductions or adjustments to be made in payment.
- (e) Acceptable fulfillment of all Contract provisions on the part of the Contractor.”

Although the project engineer may make these decisions, the engineer may consult with Mn/DOT Specialists, and in fact, the Yellow Medicine County Engineer *did* consult with the District 8 Materials Engineer who agreed with the 5% adjustment.

The auditor was concerned about high fines developing in the aggregate base because of high shale, and thus should have a high (25%) deduct. The County had approved a 5% deduct with concurrence of district materials engineer, because their experience shows that the material in the aggregate base would perform as designed.

Recommendations 1 b. through e.

SALT will prepare an "Audit Memo" on the audit findings which will be sent to all County and City Engineers in advance of the next construction season (by March) with the request the information be shared with their field personnel. In addition, Lake County has enrolled its Technicians for Grading and Base refreshers to better understand MnDOT's reporting process requirements.

Recommendation 1 d.

Percent Crushing Tests and Aggregate Quality Tests

SP 38-602-23, as part of the special provisions, identified material sources for aggregates available to the Contractor. These sources had extensive testing done by the County and the quality of the material was exceptional. That was the primary reason for the County to designate these sources. The Audit findings indicated that Lake County failed to perform crushing and quality tests of the aggregates as required by the Schedule of Material Control. This finding is misleading in that Lake County had done extensive testing of the material prior to the project and knew these sources far exceeded material specifications for all aggregate materials. Percent Crushing exceeded 45% and quality of rock is unsurpassed in this Canadian Shield formation geology. Additional testing specifically for this project seemed at best, redundant. The Audit report states “Project Personnel felt they were familiar with the aggregate sources”. The District State Aid Engineer could not agree more.

Responses to Recommendations (continued)

Recommendation 1 e.

State Aid Division

Material Exception Summary

The Lake County project had not yet been finalized, thus the Material Exception Summary Report was not fully completed at the time of audit. The project is not finalized to date since they are awaiting the disposition of the questioned costs, the Material Exception Summary Report will be complete when it is submitted to the district Materials Engineer.

The findings will be shared with all District 3 City and County Engineers at upcoming district meetings this winter and spring. Any specific project issues will be gone over with the City of Sartell (SP 220-591-01). One issue cited was including the materials testing as part of the construction contract Kelvin Howieson will be sending a specific email on this issue to all District 3 Cities to eliminate this practice on all State Aid and Federal Aid projects.

A training session on handling the pay requests and project letting and finaling procedures will be given to D3 county and city staff this winter.

Recommendation 2

Policy, Safety & Strategic Initiative Division

The Office of Construction and Innovative Contracting is going forward with automating the grading and project documentation and this will provide a platform for automating the grading and base report. The Grading and Base Office needs to be an active participant and decision maker in a unified effort to automate construction management. As mentioned, an action plan is being developed to ensure its success.

Recommendation 3

Operations Division

Mn/DOT, in conjunction with the University of Minnesota, has certification programs available that include programs for erosion control and materials testing. Mn/DOT requires certified erosion control project managers on all projects and regularly checks plant personnel for technical certifications. We will continue to support and require these certifications and provide the necessary training to help ensure that the districts, cities, and counties comply with environmental and materials testing requirements

Responses to Recommendations (continued)

State Aid for Local Transportation Division

Mn/DOT's Operation Division, SALT, and Engineering Services in conjunction with the University of Minnesota, have certification programs available that include programs for erosion control and materials testing. Mn/DOT requires certified erosion control project managers on all projects and regularly checks plant personnel for technical certifications. We will continue to support and require these certifications and provide the necessary training to help ensure that the districts, cities, and counties comply with environmental and materials testing requirements. We will advise counties and cities to consider retraining responsible personnel as necessary.

Lake County has enrolled its Technicians for Grading and Base training to better understand Mn/DOT's reporting process requirements.

FINDING II – PREPAYMENT OF LIABILITY INSURANCE PREMIUM AND PERFORMANCE BOND COSTS IS NOT IN ACCORDANCE WITH GENERALLY ACCEPTED ACCOUNTING PRINCIPLES

For State Project 2783-120, \$5.2 million to \$9 million of \$12 million total liability insurance premium and performance bond costs were prepaid. The prepayment occurred from October 11, 2007 through August 15, 2008 and was not consistent with the Generally Accepted Accounting Principle of matching. The department has prepaid similar costs such as lease costs in the past.

Questioned costs totaled \$12 million due to noncompliance with the Generally Accepted Accounting Principle of matching. \$2.3 million of the \$12 million in liability insurance premium and performance bond cost payments were not supported by source documentation. We followed up with project personnel to obtain source documentation to support the \$2.3 million in costs; no documentation was provided. The OMB Circular A-87 requires costs to be adequately documented in order to be allowable under federal awards.

Generally Accepted Accounting Principles

The Generally Accepted Accounting Principle of matching requires expenses to be matched with revenues or benefits received. The \$12 million liability insurance premium and performance bond costs should have been allocated over the period of coverage through April 2009 for the insurance premium costs; the bond costs should have been allocated based on percentage of construction project completion.

Accounting Policy

Minnesota Departments of Finance and Administration Operating Policy and Procedure Number 104-02 requires state agencies to report month end or year to date expenses monthly to the Minnesota Department of Finance. These monthly reports and the Comprehensive Annual Financial Report may not be accurate if prepaid expenses (an asset on financial statements) are described as expenses (an expense on financial statements).

Cash Availability

Allocating project cost payments as benefits are received would improve cash availability. We estimated an opportunity cost of \$400,000 resulting from prepayment of the \$12 million insurance premiums and performance bond costs, based on a 3.5% to 5% rate of return. The value of cash flow available for other purposes may be even greater.

For design build projects, the Schedule of Values describes negotiated amounts rather than actual costs for activities. Future design build contracts could be revised so that costs for items such as liability insurance, performance bonds, and leases are reimbursed based upon actual costs incurred.

Negotiating contracts that reimburse the contractor for actual costs incurred may reduce overall contract costs given that there is no unknown element that the contractor has to estimate a contingency for. This practice could be extended to design bid build projects as well by specifically describing items such as performance bonds as contract bid items rather than making them incidental to the contract.

Recommendations

1. Operations Division Director coordinate with Chief Finance Officer to ensure compliance with OMB Circular A-87, Generally Accepted Accounting Principles, and Minnesota Departments of Finance and Administration Operating Policies and Procedures for project cost payments.
2. Operations Division Director perform the following:
 - a. Ensure source documentation is provided for costs.
 - b. On design build projects, consider revising future contracts to pay contractors for actual costs incurred for items such as liability insurance, performance bonds, and leases. Evaluate the effect on the bidding process if these changes were made.
 - c. On design bid build projects, consider revising future contracts to include contract bid items for items such as performance bonds. Evaluate the effect on the bidding process if these changes were made.

Responses to Recommendations

Recommendation 1

Operations Division

The Operations Division in consultation with the Office of Finance will review with the Office of Construction Generally Accepted Accounting Principles and other policies and procedures for cost payments to ensure their understanding of these principles and their application to construction payments.

The Operations Division in consultation with the Office of Finance and the Office of Construction to change design build contract language to properly address the billing and payment of such items as insurance and bonds.

Recommendation 2

Operations Division

- a. District staff will work with the Office of Finance and the Office of Construction to review our process for ensuring source documentation is provided for costs.
- b. District staff will work with the Office of Finance and the Office of Construction to review our process for paying contractors for liability insurance, performance bonds, and leases.
- c. District staff will work with the Office of Finance and the Office of Construction to revise our contract documents.

FINDING III – NEED TO COMPLY WITH REQUIREMENTS FOR CONCRETE MATERIALS CONTROL
--

Concerns were identified in the following areas relevant to materials control for concrete. This area was evaluated for 6 of the 18 total projects audited. Concerns were noted for 2 of the 6 projects. Additional management action and follow up is needed to address these concerns. Questioned costs totaled \$2.8 million.

Quality Assurance Testing

For State Project 4302-44 Concrete Pavement Standard Width valued at \$582,000; Concrete Pavement Irregular Width valued at \$174,000; and Structural Concrete valued at \$1.7 million, 1 of 2 Quality Assurance air content tests were missed for 2,726 of 22,755 (12%) cubic yards placed on 10 of 31 days. Air content tests provide assurance that air content requirements for concrete mixtures are met. Project personnel felt confident that the tests were taken and indicated that data on a deceased employee's computer was wiped away before a backup was made.

Also, at least 1 of 2 and in some cases 2 of 2 aggregate moisture tests were missed for 3,888 of 22,755 (17%) cubic yards placed on 10 of 31 days. Aggregate moisture tests are a method of monitoring the water to cement ratio in concrete mixtures. Project personnel indicated that they were told not to worry about it.

The air content and aggregate moisture tests for the State Project 4302-44 concrete were required by the project proposal special provisions.

Dowel Bars Certificate of Compliance

For State Project 4302-44 Dowel Bars valued at \$274,000, a Manufacturer's Certificate of Compliance required by the Schedule of Materials Control was not on file. Project personnel indicated that they did not get the certificate and felt that it was redundant to have tags from the manufacturer as well as a certificate. Office of Materials and Road Research personnel felt that the certificate was needed and not redundant.

Mix Design Report

State Project 2783-120 concrete used for bridge superstructure and valued at \$90,000 was placed prior to approval of the mix design report by the Office of Materials and Road Research. No other concerns were noted for this concrete mixture. Project personnel indicated that this occurred due to oversight. Approval of mix designs for concrete mixtures helps to ensure that the mixes are correct.

Recommendation

Operations Division Director ensure districts complete the following on all projects:

- a. Required air content and aggregate moisture tests are performed.
- b. Manufacturer's Certificates of Compliance for dowel bars are obtained.
- c. An approved mix design is obtained before production and placement of concrete mixtures.
- d. Electronically stored material testing documentation is backed up.

Response to Recommendation

Operations Division

The Operations Division Director will instruct the districts to comply with testing and reporting requirements for concrete materials on construction projects. Continued improvement will be accomplished through district level construction, resident engineer and CMG personnel meetings, training and the sharing of best practices.

FINDING IV – IMPROVEMENTS NEEDED IN COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

Best Practices

For State Projects 38-602-23, 4302-44, 6920-45, 7702-42, and 0301-47 National Pollutant Discharge Elimination System (NPDES) Permit Erosion Control Inspection Logs were submitted as required. For State Projects 4302-44, 6920-45, 7702-42, 0301-47, 2782-281, and 62-596-01 erodible acres withholding was taken as required. For State Projects 7702-42 and 0301-47 contaminated soil and treated wood disposition met requirements. For State Project 4302-44, contaminated soil disposition met requirements.

This area was evaluated for all 18 projects audited. Concerns were noted for 7 of the 18 projects. Additional management attention will further improve compliance with environmental requirements. Questioned costs totaled \$179,000. Office of Environmental Services personnel felt that construction contracts should be modified to allow withholding of payment to contractors for fines and costs disallowed for federal funding due to noncompliance with environmental requirements.

NPDES Permit Compliance

For State Project 53-635-21, contractors did not complete (every 7 days) and submit all required NPDES Permit Erosion Control Inspection Logs to project personnel every 2 weeks as required. Project personnel did not submit Work Orders to contractors instructing them to complete and forward the inspection logs as required. The Minnesota Pollution Control Agency (MPCA) cited a lack of erosion control inspection logs for the project in a July 3, 2007 Letter of Warning.

NPDES Permit Erosion Control Inspection Logs were also missed for State Project 02-611-29. Compliance concerns with NPDES permit requirements were previously noted in Single Audit Reports for Fiscal Years 2000 through 2007. Also, a June 13, 2001 Audit Advisory Memorandum addressed the importance of complying with NPDES permit requirements.

Minnesota Pollution Control Agency (MPCA) personnel emphasized that it was important to perform and document the weekly inspections required by the permit. The personnel explained that these actions would help agencies decrease exposure to MPCA penalties and enforcement action as well as Clean Water Act Section 505 lawsuits.

Notification of Intent to Perform a Demolition not done correctly for 5 of 8 projects

For State Project 4302-44, a Notification of Intent to Perform a Bridge Demolition was not done at least 10 days prior to the bridge demolition. This circumstance was cited in a July 12, 2006 Letter of Warning from the Minnesota Pollution Control Agency (MPCA). Project personnel indicated that the contractor knew that there was a timing issue with the bridge demolition.

For State Projects 6920-45, 38-602-23, and 0301-47, Notifications of Intent to Perform a Bridge Demolition were not sent to MPCA at least 10 days prior to bridge demolitions. Project personnel oversight and lack of familiarity with the project proposal special provisions, as well as not timing bridge demolitions to be at least 10 days after submittal of notifications contributed to noncompliance with requirements.

For State Project 53-635-21, the Contractor did not provide the Engineer a copy of the Notification of Intent to Perform a Bridge Demolition as required by the project proposal special provisions. Project personnel did not act to ensure that the Contractor provided them the notification. The notification was sent to MPCA as required.

The Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 Code of Federal Regulations (CFR) Part 61.145, as well as project proposal special provisions, require submittal of a Notification of Intention to Perform a Demolition 10 days prior to demolition. and an inspection for asbestos prior to demolition.

The Asbestos NESHAP is based on Section 112 of the federal Clean Air Act. The Environmental Protection Agency (EPA) promulgated the Asbestos NESHAP in 40 CFR Part 61. The EPA has delegated responsibility for enforcement and implementation of the Asbestos NESHAP to the Minnesota Pollution Control Agency (MPCA).

Lead Paint Removal and Disposition not handled properly for 3 of 3 projects

For State Project 53-635-21, lead paint on guard rail poles was not removed or encapsulated prior to removal of the guard rail poles from Bridge No. 1601. An inspection report identifying flaking lead paint on the guard rail poles called for removal of the guard rail poles but did not specify that the lead paint should be removed or encapsulated first. Also, a disposition manifest for the lead paint was not provided to project personnel as required by the special provisions.

An August 1, 2007 bridge demolition subcontractor log of the bridge demolition states that the guard rail poles were sawed off and then wrapped. A November 9, 2007 bridge demolition subcontractor memorandum indicated that the flaking lead paint was abated from the guard rail poles.

Minnesota Pollution Control Agency (MPCA) personnel expressed concern about the possibility that the paint was not removed prior to demolition and indicated that a contractor had been given a Notice of Violation (NOV) under similar circumstances. The NOV cited the contractor for allowing waste paint chips to be deposited onto the ice in the Minnesota River during a demolition, specifically citing M.S. 115.061, Duty to Notify and Avoid Water Pollution; MN Rules Chapter 7050.0210 Nuisance conditions prohibited; M.S 115E.02, Duty to Prevent Discharges; and MN Rules Chapter 7045.0566 Preparedness and Prevention.

MPCA personnel were particularly concerned that the waterway associated with Bridge No. 1601 was described as a habitat for an endangered species and felt that this made the impact of even a small amount of lead paint chips dispersed into the waterway significant.

After we brought concerns regarding lead paint removal and disposition to their attention during the audit, project personnel indicated that a bridge demolition subcontractor contacted them and indicated that the guard rail poles were wrapped before they were removed. Project personnel felt it was a difficult situation because they were not able to inspect this part of the work closely due to the requirement for Minnesota Department of Health licensing and they had to rely on the bridge demolition subcontractor. Concerns were also noted for removal of bridge steel with flaking lead paint for State Projects 38-602-23 and 2782-281.

Recommendation

Operations Division Director and State Aid for Local Transportation Division Director, in consultation with Engineering Services Division Director:

- a. Encourage cities, counties, and districts to continue and emulate best practices.
- b. Instruct districts, cities and counties to comply with environmental requirements described by contract special provisions as well as State and Federal regulations related to the National Pollutant Discharge Elimination System Permit; Bridge Demolitions; and lead paint removal and disposition.
- c. Consider modifying construction contracts to allow withholding for fines and costs disallowed for federal funding due to noncompliance with environmental requirements.

Responses to Recommendation

Operations Division

The Operations Division Director will instruct the districts to comply with environmental requirements per State and Federal regulations and contract special provisions. Continued improvement will be accomplished through the sharing of best practices, training and district level meetings.

The Office of Environmental Services will consult with the Office of Construction and Innovation Contracting, the Construction Managers Group (CMG), SALT Division, and the Office of Audit to develop an appropriate, effective, and enforceable means of recovering fines and other costs disallowed for federal funding due to noncompliance with environmental requirements.

State Aid for Local Transportation Division

Recommendation a.

SALT will continue to communicate Best Practices projects and practices whenever they have the opportunity (e-Newsletter, Annual City & County Engineer Meetings, County Technician Conferences, Training Sessions and District Meetings).

Recommendation b.

Mn/DOT's State Program Administrator (Certified Hazardous Materials Manager and Certified Environmental Auditor) will be offering two training sessions on demolition requirements to be held in 2009 for county and city personnel, one in Duluth and one in the Metro Area.

Responses to Recommendation (continued)

Recommendation c.

Lake County and/or the Contractor failed to provide MPCA notice of bridge demolition. Lake County was well aware of this provision but failed to follow up on MPCA notice or with the Contractor. In discussions with Lake County personnel, it was unknown if the Contractor completed documentation for this item.

A high level of risk for failure to meet MPCA requirements existed and the Remove Old Bridge item will not be eligible for federal funds. Also, a training session on demolition requirements will be held in Duluth in March, 2009 for county personnel.

In the future, plan reviewers will make an effort to remind cities and counties to contact the MPCA ten days in advance of bridge removals or building demolitions.

OBSERVATIONS

The following observations are considered performance/operational in nature. Observations are intended to assess the economy and efficiency of an audited entity's operations, and the extent to which program objectives are being attained.

OBSERVATION I - DEVELOPING AND IMPLEMENTING INDIVIDUAL GRADATION REQUIREMENTS FOR GRADING AND BASE CONSTRUCTION ITEMS COULD ENHANCE CONTROLS OVER UNIFORMITY OF MATERIALS
--

During our audits of highway construction project grading and base materials control compliance for aggregate gradations, we noted instances where gradation averages of 4 met specification even though the underlying individual gradations fell outside of specification or varied widely within specification.

Grading and Base Engineering Unit personnel indicated that they would be willing to consider modifying the specifications to include requirements for individual gradations as well as average of 4 gradations. Currently, the specifications call for assessing the average of 4 gradations only in almost all cases except for fairly small quantities and/or small projects. Grading and Base Engineering Unit personnel indicated that modifying specifications to include requirements for individual as well as average of 4 gradations would enhance controls over uniformity of materials as related to aggregate gradations.

Recommendation

Policy, Safety & Strategic Initiative Division Director consider developing and implementing individual gradation requirements to be used in conjunction with average of 4 gradation requirements for grading and base construction items.

Response to Recommendation

Policy, Safety & Strategic Initiative Division

Currently we pay based on the average of 4 tests for aggregate base gradations and there is some concern on some of the individual tests fail, but the average of 4 tests pass. One way is to add a uniformity requirement on the individual tests to ensure that one or two tests are not way out of specification and the average is in specification. Additional investigation with Percent Within Limits and other specifications will need to be done to determine the specification language. Additional work will be required to input past construction data over the past several years to determine if the specification language will work. Specification language will be changed to address individual tests.

OBSERVATION II - OPPORTUNITY TO CLARIFY REQUIREMENTS FOR NON-CONTINUOUS BITUMINOUS PLANT OPERATION AND PAVING RESTRICTIONS

Non-Continuous Plant Operation

For State Project 7702-42 SP 12.5 Non Wearing Course Mixture valued at \$727,000, Asphalt Film Thickness (AFT) moving average values as calculated for the entire time the mix was produced during the summer of 2007 construction season fell outside Job Mix Formula (JMF) limits.

For the project, the contractor, using the same bituminous plant and mixture, produced, left the project site, then came back and finished production during the summer 2007 construction season. On the Test Summary Sheets, project personnel considered AFT values separately for each of the 2 periods of time the contractor was at the project site producing, rather than 1 continuous period of time.

Bituminous specification 2360.4L indicates that contractors should begin new Test Summary Sheets (and associated moving averages) annually for winter carryover projects. However, the specifications do not address whether new Test Summary Sheets and moving averages should be done for non-continuous production within the same construction season and year. For this reason, we did not describe the State Project 7702-42 SP 12.5 Non Wearing Course Mixture AFT moving average values as failing to meet requirements.

Bituminous Engineering Unit personnel agreed that they could consider clarifying the specifications to address this circumstance.

Paving Restrictions

For State Project 6920-45 SP 12.5 Wearing Course Mixture valued at \$842,000, paving took place late in the construction season, up to November 13. Bituminous specification 2360.5B, Restrictions, indicates that paving of the wearing course (final wearing course if multiple wearing courses) should not occur after October 15 without written direction from the Engineer.

For State Project 6920-45, the final wearing course lift was not placed until the 2008 construction season. Project personnel indicated that they wanted to restrict the contractor from paving the initial lifts of the wear course late in the 2007 to decrease the risk of the contractor compromising bituminous mat structure while attempting to achieve density in low temperature conditions. Project personnel suggested that all lifts/courses of the wearing course mixture should be subject to restriction (placement allowed only per written direction of the Engineer) rather than just the final lift/final wearing course if multiple wearing courses were used. Bituminous Engineering Unit personnel agreed that they could consider revising the specifications to address this concern.

Recommendation

Policy, Safety & Strategic Initiative Division Director consider revising bituminous specifications to address the following:

- a. Completion of Test Summary Sheets and calculation of moving averages associated with non-continuous production in the same construction season of the same bituminous mixture.
- b. Placement of any wearing course mixture (including multiple lifts/wearing course mixtures) late in construction seasons under potentially low temperature conditions

Response to Recommendation

Policy, Safety & Strategic Initiative Division

The specification has been modified to include the following clarification for Non-Continuous Plant Operation:

H1 Moving Average Calculation

A moving average is the average of the last four test results. The calculation of the moving average shall continue without interruption except under the following conditions:

- 1) The Contractor shall begin new summary sheets and charts annually for winter carry-over projects.
- 2) The Contractor shall begin new summary sheets and charts when an asphalt plant is re-setup in the same site after it has been moved out.
- 3) When there is a significant change of the materials in the currently produced JMF or when a new design JMF, significantly different from the currently produced JMF, is approved. The Engineer will determine whether a material change is significant.

Paving Restrictions

Late season paving can result in a lack of bond between discrete aggregate particles. Proper compaction does not always ensure the bond. Hot-mixed asphalt pavements benefit from the combination of warm weather and traffic to solidify this bond.

When this bond is not achieved, small particles become dislodged. If enough small particles are removed, larger stones become displaced. No matter the size of the lost materials, this distress is referred to as raveling. The October 15 paving restriction is in the specification to limit the occurrence of raveling on the final surface for late season paving projects.

The specification does not apply to interim surface layers placed in the fall when additional layers will be placed in the subsequent construction season. A minor amount of raveling on an interim surface does not impact the structural integrity of the pavement. Interim wear surfaces with significant amounts of raveling can be repaired or removed and replaced in the spring prior to placing the final wear course. In either instance, the integrity of the final pavement layers and surface will provide acceptable performance.

Response to Recommendation (continued)

Unfortunately, Mn/DOT often instructs Contractor's to perform operations outside the specified dates found in the specification. Under those circumstances, the Contractor may not be held to all the obligations of the Contract. Inserting more dates into the specification may lead to more instances where the Agency is forced to circumvent the specification to meet other deadlines.

The Bituminous Unit does not plan to insert paving date restrictions for interim wear surfaces.

OBSERVATION III - USE OF THE TRANSPORTATION AUTOMATED CONTROL SYSTEM ON ADDITIONAL HIGHWAY CONSTRUCTION PROJECTS COULD IMPROVE EFFICIENCY
--

State Project 0301-47 is a pilot design bid build project for use of the Transportation Automated Control System (TRACS). The Mn/DOT has purchased the rights to use the TRACS software on other district trunk highway construction projects.

During our audit of State Project 0301-47, we noted that the TRACS eliminated dual entry of contract item payment documentation such as measurements and counts by allowing project personnel to enter this information online at the project site. Via an interface with the Field Ops software, contract item payment documentation is then transmitted to contract item record accounts for highway construction projects. Previously, contract item payment documentation was recorded by hand in project diaries or field record documents, brought back to the construction office, and then typed into the Field Ops.

For State Project 2783-120, original documentation supported costs but documentation scanned into the TRACS did not support costs. In order to utilize TRACS more fully, input controls need to be improved so that documentation scanned into the TRACS supports costs.

Use of the TRACS on other projects could save considerable administrative time for project personnel. The TRACS seems designed to maintain documentation standards for contract item payments. The TRACS also has a Materials module that could potentially be used to reduce or eliminate dual entry of material testing data.

Recommendation

Operations Division Director consider using the Transportation Automated Control System (TRACS) on additional district trunk highway projects, evaluating input controls as the system is implemented.

Response to Recommendation

Operations Division

The Metro District has committed to use TRACS on all construction projects next year. Several other districts will also use the system on their projects. The department will still be using CAARS on most outstate projects but we will be exposing all the districts to the program by accessing CAARS through the TRACS program in the future.

ATTACHMENT I

OTHER INTERNAL CONTROL ISSUES DISCUSSED WITH MANAGEMENT

Contract Language

State Project 220-591-01 contract general requirements state that the Contractor shall assume full responsibility for arranging and obtaining inspections, tests, and approvals, and paying all associated costs. This statement is contradictory to the 23 CFR 637.205 and 637.207, which require independent verification of contractor testing through agency testing. This concern was also addressed in the Fiscal Year 2007 Single Audit Report.

Gradation Analysis

For State Project 7702-42, the Work Sheet for Sieve Analysis of Granular Materials forms, used to document individual gradations for Aggregate Base Class 6, often did not have the (8) Cumulative Percent Passing and Sieve Size columns completed and occasionally did not have the Cumulative Weights Passing and Check Total columns completed. Also, the Random Sampling Gradations form, used to calculate gradation averages of 4 used for acceptance, was not completed. No undetected failing gradations resulted from these practices.

For State Project 38-602-23, the Work Sheet for Sieve Analysis of Granular Materials form, used to document individual gradations for Granular Borrow, in some cases understated the correct percent passing the #200 sieve of the percent passing the 1 inch sieve. The understatements occurred because the percent passing the #200 sieve of the total sample was stated, rather than the percent passing the #200 sieve of the percent passing the 1 inch sieve. No undetected failing gradations resulted from this practice.

Project personnel should ensure that the Work Sheet for Sieve Analysis of Granular Materials accurately and completely reflects gradation results.

Technical Certification

For State Project 62-596-01, concrete plant personnel performed Quality Control (QC) testing on Structural Concrete valued at \$109,000. The plant personnel did not possess up to date technical certification. Agency Quality Assurance (QA) testing performed met requirements.

Micro Silica Fume Test

For State Project 2783-120, the first micro silica fume test failed for concrete valued at \$23,000 and used in drilled shafts. Subsequent tests passed. Micro silica is used as a sealant for concrete. Office of Materials and Road Research personnel felt that the failing test was not representative of material used on the project and felt that based on subsequent passing tests that the failure could be handled as substantial compliance. The 23 Code of Federal Regulations requires tests to be random and therefore representative. Additional testing that could have been taken to verify if the concrete mixture in question was acceptable was not done.

ATTACHMENT I

OTHER INTERNAL CONTROL ISSUES DISCUSSED WITH MANAGEMENT

Page 2

Anchor Bolts

For State Project 62-596-01 anchor bolts were noted as a concern (foreign steel, not galvanized, and failed the pull out tests). Project documentation indicated that the materials were to be replaced. Discussions with project personnel have indicated that the materials will be replaced; however, they had not begun replacing these materials as of the audit.

Federal Ineligibility Notice

For State Project 54-639-32, a Federal Ineligibility Notice dated May 6, 2008 for foreign steel valued at \$238,000 was not applied to the Federal Current Bill as of August 15, 2008. The foreign steel can be incorporated into the project but is not eligible for federal participation per 23 Code of Federal Regulations (CFR) 635.410, Buy America requirements. Financial Operations personnel were working with the Federal Highway Administration to resolve this issue.

Weekly Concrete Reports

For State Project 62-596-01, no Weekly Concrete Reports were prepared for Structural Concrete valued at \$5.1 million. The Weekly Concrete Report summarizes test results from individual test reports and Certificates of Compliance (concrete tickets). The number of tests performed and test results for the Structural Concrete met requirements. Project personnel felt that Weekly Concrete Reports were redundant and unnecessary.

Certification on Summary Management Reports

Summary management reports such as Test Summary Sheets for bituminous mixtures; Weekly Concrete Reports for concrete mixtures; and Grading and Base Reports and Random Sampling Gradations Forms for grading and base items include signature lines and/or project personnel names indicating review and approval. These reports summarize individual and average test results over differing periods of time. We feel that further assurance regarding compliance with material testing requirements would be documented on these reports with the inclusion of a statement certifying that all testing requirements were met on the reports.

MPCA Field Visits

For State Project 53-635-21, project personnel commented that Minnesota Pollution Control Agency (MPCA) personnel inspected project sites unaccompanied and without first notifying them, and expressed concern about safety issues. The MPCA "Stormwater Construction Inspection Guide" indicates that MPCA construction site inspectors should meet with project personnel, explain the purpose of the site inspection, and be accompanied by project personnel during the inspection. Mn/DOT should consider communicating with MPCA to clarify procedures for MPCA field visits.

ATTACHMENT I

OTHER INTERNAL CONTROL ISSUES DISCUSSED WITH MANAGEMENT

Page 3

Project Completion

For State Project 62-596-01, the allotted construction time per a grant agreement was anticipated as June 2008. The project proposal called for all work to be completed by August 15, 2008. Project personnel acknowledged that work was still ongoing in September 2008.

Field Compliance Review on Labor Provisions

For State Project 53-635-21, 0 of 5 required field compliance reviews were done. Project personnel handed out a “wage check form” to contractors and subcontractors and had received completed “wage check forms” back from only 1 subcontractor. Also, the “wage check form” did not document a poster board check.

Field compliance reviews were also missed for State Projects 220-591-01 and 7702-42. Contract Administration Manual 5-591.320, Labor, requires project personnel to ensure compliance with the contract provisions by randomly interviewing employees (including subcontractor employees) each month and including the required information on the Field Compliance Review on Labor Provision form.

Poster Board

For State Project 220-591-01, project personnel indicated a poster board with the required information such as the Federal Fraud poster, Federal Wage Rate Information poster, and Contract State Wage Determination was not used. Project personnel indicated that State Project 220-591-01 is a small project.

Concerns with the poster board were also noted for State Project 2782-281. The Contract Administration Manual 5-591.320 requires use of a poster board on all highway construction projects from the first day of work until the project is 100 percent complete.

Improvement Needed for Payment Timeliness

For State Project 38-602-23, \$2.5 million of \$5.3 million (48%) in partial payments exceeded 35 days from either the previous payment or the start of work per the Change in Contract Construction Status, with a range of 49 to 83 days for the late payments. Project personnel explained that one payment wire transfer was misrouted and not corrected for several weeks. Project personnel explained that for another payment, they did not have the cash so the payment was not issued.

For State Project 220-591-01, 2 partial payments totaling \$82,000 were made 15 days after the second Monday of the month. The special provisions identified the second Monday of the month as the payment date. Project personnel indicated that the payment approval process was long and complex. We suggested to project personnel that the time needed for payment approval be considered when processing partial payments.

ATTACHMENT II

AUDIT FOLLOW UP OF PRIOR YEAR'S FINDINGS

Identified Concern in Fiscal Year 2007

Single Audit Report No. 08-800-27

	Status	
	<u>Code</u>	<u>Notes</u>
Materials Control for Grading and Base	2	A
Concrete Materials Control	2	B
Contract Change Costs	2	C
Bituminous Materials Control	1	
Environmental Compliance	2	D
Recording Liabilities on Financial Statements	4	

Notes:

- A - Materials Control for Grading and Base is discussed this year in Single Audit Report No. 09-800-71, Finding I.
- B - Concrete Materials Control is discussed this year in Single Audit Report No. 09-800-71, Finding III.
- C - Contract Change Costs are discussed this year in Single Audit Report No. 09-800-71, Disclosures.
- D - Environmental Compliance is discussed this year in Single Audit Report No. 09-800-71, Finding IV.

Explanation of Status Codes

- 1 - Findings have been fully corrected.
- 2 - Findings not corrected or only partially corrected; discussed in this year's Single Audit Report.
- 3 - Findings not corrected or only partially corrected; discussed verbally with management.
- 4 - Findings are no longer valid or do not warrant further action.

ATTACHMENT III

QUESTIONED COSTS

Finding	State Project	Contract Items	Amount	Explanation
I	87-603-27	Aggregate Shouldering Class 1	\$168,000	Contractor's Certification of Aggregates and Granular Materials not received prior to placement (Spec. 2211.3F1); Preliminary Grading and Base Report not done (Grading and Base Manual); all explanations related to contract items cited under Finding I were repeat findings from the FY 2007 Single Audit
I	87-603-27	Aggregate Base Class 5	\$917,000	Contractor's Certification of Aggregates and Granular Materials not received prior to placement; Preliminary Grading and Base Report not done; QA Percent Crushing Test not done (Schedule of Materials Control); Inadequate reduction in payment per Grading and Base Engineer for excess shale; reduction in payment that was taken for material placed in July 2007 and paid for in August 2007 not taken until audit in March 2008 (cost credits not adequate or timely per OMB Circular A-87; costs not considered reasonable per A-133 Compliance Supplement Part III.B. Allowable Costs/Cost Principles)
I	53-635-21	Aggregate Shouldering Class 1	\$104,000	Preliminary Grading and Base Report done during the audit did not include minimum test rate or number of tests required; Not listed on Contractor's Certification of Aggregates and Granular Materials; Moisture content tests required by Schedule of Materials Control not done; \$6,000 reduction in payment recommended due to gradation test #200 sieve failure not taken
I	53-635-21	Aggregate Base Class 5	\$150,000	Preliminary Grading and Base Report done during the audit did not include minimum test rate or number of tests required; Contractor's Certification of Aggregates and Granular Materials not submitted until after placement and payment; QC gradation testing not done for 2 natural aggregate sources (Schedule of Materials Control); Moisture content tests not done; QC/QA Percent Crushing tests not done; Aggregate Quality test not done (Schedule of Materials Control)
I	38-602-23	Aggregate Base Class 5	\$871,000	Preliminary Grading and Base Report did not list moisture content test requirements and moisture content tests not done; Obsolete Certification of Aggregates form did not list number of tests done or whether recycled/salvaged material was used; Certificate of Aggregates form not received prior to placement and payment; QC/QA Percent Crushing tests not done; Aggregate Quality test not done; Tests not done were not listed on Materials Certification Exceptions Summary
I	38-602-23	Granular Borrow	\$1,452,000	Obsolete Certification of Aggregates form did not list number of tests done or whether recycled/salvaged material was used; Certificate of Aggregates form not received prior to placement and payment; Certificate of Aggregates form did not include Granular Borrow
I	38-602-23	Reclaimed Bituminous Pavement	\$268,000	Preliminary and Final Grading and Base Reports did not list tests required or done; Dynamic Cone Penetrometer (DCP) tests not done (Schedule of Materials Control); Moisture content tests not done; 20 of 26 required QC gradations not done (Schedule of Materials Control/special provisions)
I	4302-44	Aggregate Base Class 5	\$514,000	Preliminary Grading and Base Report required number of DCP, moisture content, and gradation tests incorrect; 11 of 74 required DCP tests not done; Contractor's Certification of Aggregates and Granular Materials not submitted; 63 of 67 QC gradations not done

ATTACHMENT III

QUESTIONED COSTS

Page 2

Finding	State Project	Contract Items	Amount	Explanation
I	6920-45	Aggregate Base Class 6	\$344,000	Preliminary Grading and Base Report lists 87 DCP tests required when 252 were required; 8 of 68 required DCP tests not done
I	7702-42	Aggregate Base Class 6	\$706,000	Obsolete Monthly Grading and Base Report used; not completed until after start of production and placement (Grading and Base Manual); QC Percent Crushing tests not done
I	0301-47	Aggregate Base Class 5	\$304,000	QC Percent Crushing tests not done
I	0301-47	Aggregate Base Class 6	\$29,000	QC Percent Crushing tests not done
I	5305-55	Aggregate Surfacing Class 5	\$22,000	Contractor's Certification of Aggregates and Granular Materials form not received prior to payment for material
I	5305-55	Aggregate Shouldering Class 1	\$11,000	See above explanation for Aggregate Surfacing Class 5
I	220-591-01	Aggregate Base Class 5	\$8,000	Preliminary and Final Grading and Base Reports incorrectly list Specified Density as method of compaction; Contractor's Certificate of Aggregates and Granular Materials not submitted; QC Percent Crushing test not done; Test not done not listed on Materials Certification Exception Summary
II	2783-120	Liability Insurance Premium and Performance Bond Costs	\$11,974,000	Prepayment of liability insurance premium and performance bond costs not consistent with A-133 Compliance Supplement Part III B. Allowable Costs/Cost Principles Circular A-87 reference: Generally Accepted Accounting Principles (Matching and Reporting Principles); \$2.3 million in these costs was not supported by source documentation; \$400,000 opportunity cost
III	4302-44	Concrete Pavement Standard	\$582,000	Air Content tests missed affecting 12% of cubic yards placed and Aggregate Moisture tests affecting 17% of cubic yards placed; tests required by special provisions; missed air tests a repeat finding from FY 2007 Single Audit
III	4302-44	Concrete Pavement Irregular	\$174,000	See explanation above for Concrete Pavement Standard
III	4302-44	Structural Concrete	\$1,684,000	See explanation above for Concrete Pavement Standard
III	4302-44	Dowel Bars	\$274,000	Manufacturer's Certificate of Compliance required by Schedule of Materials Control not obtained; repeat finding from past Single Audits
III	2783-120	Concrete Mixture	\$90,000	Concrete Mixture placed into the work without an approved Mix Design Report: repeat item from last year's Single Audit
IV	53-635-21	Remove Lead Paint	\$1,000	Flaking lead paint not removed from Bridge No. 1601 guard rail poles prior to removal of the guard rail poles from the bridge; noncompliance risk with M.S. 115.061, Duty to Notify and Avoid Water Pollution; MN Rules Chapter 7050.0210 Nuisance conditions prohibited; M.S. 115E.02, Duty to Prevent Discharges; and MN Rules Chapter 7045.0566 Preparedness and Prevention per Minnesota Pollution Control Agency (MPCA); repeat finding from past Single Audits
IV	53-635-21	Remove Old Bridge	\$6,000	Notification of Intent to Perform a Bridge Demolition not provided by Contractor to Engineer as required by special provisions; repeat finding from past Single Audits

ATTACHMENT III

QUESTIONED COSTS

Page 3

Finding	State Project	Contract Items	Amount	Explanation
IV	4302-44	Remove Old Bridge	\$45,000	Notification of Intent to Perform a Bridge Demolition not provided to MPCA at least 10 days prior to bridge demolition as required by Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP); Letter of Warning issued by MPCA; repeat finding from past Single Audits
IV	6920-45	Remove Existing Bridge	\$11,000	Notification of Intent to Perform a Bridge Demolition not provided to MPCA at least 10 days prior to bridge demolition as required by Asbestos NESHAP; repeat finding from past Single Audits
IV	38-602-23	Remove Old Bridge	\$11,000	Notification of Intent to Perform a Bridge Demolition not provided to MPCA at least 10 days prior to bridge demolition as required by Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP); flaking lead paint not removed from bridge steel prior to bridge demolitions as required; repeat finding from past Single Audits
IV	0301-47	Remove Existing Bridge	\$105,000	Notification of Intent to Perform a Bridge Demolition not provided to MPCA at least 10 days prior to bridge demolition as required by Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP); repeat finding from past Single Audits
		Grand Total	\$20,825,000	

Note:

The amount column represents the entire contract item amount for each questioned cost contract item. The federal amount is typically 80-90% of this total. The entire contract item amount for design bid build projects is questioned for each contract item described in the Findings because requirements from the Standard Specifications for Construction, Schedule of Materials Control, and project proposal special provisions that are used in conducting the audit are organized by specification number and for each project by contract item. Design build project item questioned costs are calculated from activities. Questioned cost contract items often involve multiple exceptions to requirements that are in some cases repeated from past Single Audits. Occasionally, contract items with only 1 exception to requirements are included in the questioned costs if the exception is considered significant and a high risk to the program audited. Isolated and less significant instances of noncompliance with requirements are discussed verbally with project personnel in the field or are listed in Attachment II, Other Internal Control Issues Discussed With Management.

ATTACHMENT IV

DISCLOSURES

State Project 2783-120

The bidletting and awarding of the contract to the contractor was not audited. No opinion is expressed regarding the bidletting and awarding of the contract to the contractor. Bidletting and awarding of the contract to the contractor was in litigation during the audit.

Weekly Concrete Reports did not include all required test results. The test results in question were documented elsewhere. Overall, testing and inspection report submittal lagged behind completion of work. During the audit, agency personnel were in the process of transferring off of the project.

Discharges to the waters of the state were noted in Discharge Monitoring Reports provided to the Minnesota Pollution Control Agency (MPCA) by Mn/DOT. The Discharge Monitoring Reports documented corrective action taken. Due to preexisting Mn/DOT and MPCA awareness and review as documented by the Discharge Monitoring Reports, no opinion is expressed. Similar conditions were noted for State Project 62-596-01.

We noted several process reviews conducted by the Federal Highway Administration (FHWA). These reviews were considered compensating controls during our audit. The reviews included recommendations for improvements. We also noted onsite visits by Office of Bridges personnel.

Change Order Credits

For State Project 1017-12, 7 executed change orders reflecting a net reduction in payments (credits) to the contractor of \$1.5 million had not been included on the most recent payment voucher during the audit of the project in June 2007. The net effect is a \$1.5 million loan to the contractor. This condition was identified and communicated in the Fiscal Year 2007 Single Audit Report No. 08-800-27.

As of Partial Payment No. 52 dated August 27, 2008, project personnel had still not included \$1.3 million in credits for 6 of the 7 change orders. Mn/DOT did not apply the credits. In responding to the audit finding addressing this area in last year's Single Audit Report, Mn/DOT agreed that the credits should have been applied immediately.

After we completed the follow-up audit of State Project 1017-12, project personnel included the remaining credits in Partial Payment No. 53 dated October 3, 2008.