

EXECUTIVE DIGEST

DESIGN DIVISION

INTRODUCTION

This report, issued in July 2002, contains the results of our performance audit* of the Design Division, Bureau of Highway Technical Services, Michigan Department of Transportation (MDOT).

AUDIT PURPOSE

This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.

BACKGROUND

MDOT was organized under Sections 16.450 - 16.458 of the *Michigan Compiled Laws* (Executive Organization Act of 1965). MDOT was established to provide the people of Michigan with a safe, efficient, and environmentally sound total transportation system in the most cost-effective manner.

The Design Division is 1 of 5 divisions within the Bureau of Highway Technical Services that provides construction plans and design services to MDOT staff in Lansing and at the 7 regional offices and 26 transportation service centers. The Division's mission is to:

Provide and support the development of quality transportation project documents and services that meet the Department's strategic goals and

exceed customer expectations for delivery of contracts on time and within budget.

The Division is organized into two units (Administrative Support and Local Agency Programs) and three sections (Design Operations - Road Section, Design Operations - Structures Section, and Design Services Section).

Administrative Support provides office management functions and liaison services with MDOT for the Division. Local Agency Programs administers the federal and State aid programs for local agencies.

The Design Operations - Road Section and the Design Operations - Structures Section are responsible for preparing preliminary and final design plans for construction or reconstruction of State trunkline roads and bridges; distributing design work loads among Lansing design, region design, and design projects awarded to design consultants*; and coordinating region design squads in the preparation of preliminary and final plans for State trunkline roads and bridges.

The Design Services Section is responsible for coordinating and implementing automated engineering systems and standards for the Division, coordinating value engineering studies, and the review and approval of subdivision plats impacting State trunklines.

Division expenditures, including design consultant contracts, were approximately \$68.1 million for the fiscal year ended September 30, 2001. The Division had 280 full-time equated employees as of September 30, 2001.

**AUDIT OBJECTIVES
AND CONCLUSIONS**

Audit Objective: To assess the effectiveness of MDOT's life cycle cost analysis (LCCA) program.

Conclusion: We concluded that MDOT's LCCA program was effective in ensuring that the lowest life cycle construction cost alternative was selected for construction projects with paving costs greater than \$1 million.

Audit Objective: To assess the effectiveness of the Division's quality assurance (QA) program.

Conclusion: We concluded that the Division's QA program was generally effective in helping to ensure that all road and structure plans were free of errors and omissions. However, we noted reportable conditions* regarding QA reviews and design error notification (Findings 1 and 2).

Audit Objective: To evaluate MDOT management's use of its program/project management system (P/PMS) for scheduling and managing design resources.

Conclusion: We concluded that MDOT management generally made effective use of its P/PMS for scheduling and managing design resources. However, we noted a reportable condition regarding P/PMS data accuracy (Finding 3).

**AUDIT SCOPE AND
METHODOLOGY**

Our audit scope was to examine the program and other records of the Design Division. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Our audit procedures included examination of the Division's records and activities primarily for the period October 1, 1998 through June 30, 2001. Our audit methodology included conducting a preliminary survey of the Division to develop an understanding of its responsibilities and the methods that it used to monitor the accomplishment of these responsibilities. We reviewed prior audit reports and working papers of audits conducted by MDOT's Office of Commission Audits. We obtained Division design manuals for use as reference materials during our audit.

We reviewed the Division's procedures for preparing, reviewing, and submitting project design plans for bid lettings*. This included the procedures for managing project designs prepared by private firms.

We received listings of construction projects that the Division released for bid lettings during our audit period. From those listings, we performed various tests to determine compliance with Division procedures.

We reviewed the Division's policies and procedures for maintaining and using its P/PMS. We obtained reports from P/PMS and performed various analytical tests.

AGENCY RESPONSES

Our audit report contains 3 findings and 4 corresponding recommendations. The agency preliminary responses indicated that MDOT concurs with all 4 recommendations. In addition, MDOT informed us that it has initiated or will initiate corrective action for all of the recommendations.