

Michigan Department of Transportation

Boilerplate Reporting Requirement (FY 2019)

Public Act 207 of 2018 – Section 613 Reporting Requirement

On or before February 1 of each year, the department shall prepare a report on all capital federal aid participating construction projects completed in the prior fiscal year. The report shall include the following information:

- Location of project
- General description of the project
- As-bid cost of the project
- As-built cost of the project
- Estimated completion date
- Actual completion date
- Whether design engineering was performed by department staff or contract engineering consultants
- Design engineering costs
- Whether construction engineering was performed by department staff or contract engineering consultants
- Construction engineering costs
- Design Life

The report shall include a discussion of design engineering and construction engineering costs as a proportion of total project costs and, in comparison, with other state transportation agencies. The report shall also include a discussion of relative efficiency and effectiveness of work performed by department staff and work performed by contract engineering consultants.

The report described in this section shall be provided to the Senate and House appropriations subcommittees on transportation, the Senate and House standing committees on transportation, and the Senate and House fiscal agencies. **Please refer to the current report posted by following the below link:**

[Capital Federal Aid Participating Construction Projects Completed in the Prior Fiscal Year](#)

Discussion of Design and Engineering Costs and Survey of Other State Transportation Agencies

The use of consultant services for both design and construction engineering services is efficient and effective for the department. Contract administration follows the Federal Code of Regulations (CFR), the Federal Highway Administration Contract Administration Core Curriculum Manual, the department's Construction Manual, the department's Road and Bridge Design Manuals, and numerous other procedure and instructional manuals as developed by the department. All staff are following the same guidance and our training efforts provide the same guidance, therefore the Michigan Department of Transportation (MDOT) staff and consultants' staff are in alignment with their duties regardless of company affiliation.

The flexibility to use consultant staff assists the department with fluctuations in project magnitude, transportation system needs, expedited project schedules, and budgeting across the state.

The schedule indicates whether MDOT or a consultant was primarily responsible for the project's design. This does not, however, conclude that all design costs reported on any specific project were incurred by either party. Most project design is a collaboration of services by MDOT and design consultants.

Many department projects incur a consultant cost during the construction phase of a project. The primary consultant costs on some projects are for full construction engineering and administration services provided by consultant staff. Other projects will be managed by department staff and these projects may incur consultant costs for other services. These other services could include but are not limited to as-needed consultant engineering, inspection and testing staff, structural fabrication inspection, auditing of project records, work zone inspections, office technician support, material testing, and material density services.

MDOT is a member of the American Association of State Highway and Transportation Officials (AASHTO) and, as such, commissioned a survey for the fiscal year 2018 boilerplate requirement, of the other members to assist with this report. Noted below are the results of the survey. A new survey was not commissioned this fiscal year, as the responses were not anticipated to change materially.

***Survey on Consultant Use for Design and Construction Engineering
(As requested by Michigan DOT)***

AASHTO Fiscal Management and Accounting Task Force
Dec. 20, 2017

Our Fiscal Year (FY) 2018 budget bill required us to report on completed projects. It was requested to include a discussion of design and construction engineering costs as a proportion of total project costs and, in comparison, with other state DOTs.

- Does your state use consultants for design engineering?
- If so, what percentage of the work is completed by consultants (versus in-house)?
- What is the average share of the total project costs for consultant design work versus in-house design work?
- Does your state use consultants for construction engineering?
- If so, what percentage of the work is completed by consultants (versus in-house)?
- What is the average share of the total construction costs for consultant construction engineering versus in-house construction engineering?

Thank you to all the states that responded: Arkansas, Delaware, Florida, Georgia, Idaho, Maine, Missouri, Montana, and Ohio.

Does your state use consultants for design engineering?

Michigan: Yes

Arkansas: Yes

Delaware: Yes

Florida: Yes

Georgia: Yes
Idaho: Yes
Maine: Yes
Missouri: Yes
Montana: Yes
Ohio: Yes

If so, what percentage of the work is completed by consultants (versus in-house)?

Michigan: For the projects reported as completed in fiscal year 2017, 52 percent of the program by dollar value were designed by consultants.

Arkansas: The percentage varies and is dependent on ability of ArDOT staff to complete design projects to match estimated/scheduled let dates from the ArDOT Statewide Transportation Improvement Program (STIP). For federal FY Oct. 1, 2016, to Sept. 30, 2017, the design task order agreements issued during this time totaled \$5,272,470. Billings during this timeframe for this design task orders were less than 16.4 percent of the contract value.

Delaware: Approximately 40 percent of the projects are designed by consultants.

Florida: Our planned preliminary engineering commitments for FY 2017-18 through FY 2021-22 (Adopted July 1, 2017) are 85 percent consultant and 15 percent in-house.

Georgia: GDOT currently has 1,142 active design projects, of which 881 (77 percent) are being designed by consultants. Sixty-five of the active projects are local preliminary engineering (PE).

Idaho: Of total design cost, 79 percent is from consultants.

Maine: About 83 percent completed by consultants.

Missouri: 30 percent consultant, 70 percent in-house.

Montana: Approximately 15 percent of the number of projects, but approximately 30 percent of the construction dollars.

Ohio: Approximately 30 percent involved consultant work.

What is the average share of the total project costs for consultant design work versus in-house design work?

Michigan: For the projects reported as completed in fiscal year 2017, consultant design work totaled 62% of the Preliminary Engineering Costs as compared to 38% for in-house design.

Delaware: A vast majority of the PE phase projects costs are consultants, even for "in-house designs," because we use consultants in all of the support sections: soil borings, environmental compliance, utility coordination, etc. There really are very few projects delivered without consultant help in some capacity.

Florida: The Five-Year Work Program for FY 2017-18 through FY 2021-22 averages \$647 million per year for preliminary engineering consultants and \$113 million per year for in-house preliminary engineering work.

Georgia: In-house PE versus total cost equals 7.31 percent, or \$112 million minus 11 percent of PE cost.

Consultant PE versus total cost equals 5.33percent, or \$904 million minus 89 percent of PE cost.

Idaho: Of the total project costs, design costs by consultant's equal 9.1 percent and in-house design equals 2.4 percent.

Maine: Our analysis shows this varies depending on the project.

Missouri: Depends on type and size of project - 10 to 15 percent. We often retain all environmental and permitting work and right-of-way acquisition on projects. In-house 10 percent.

Ohio: Across all projects, 60.11 percent of the cost is for consultants.

Does your state use consultants for construction engineering (CE)?

Michigan: Yes

Arkansas: Yes

Delaware: Yes

Florida: Yes

Georgia: Yes

Idaho: Yes

Maine: Yes

Missouri: Yes

Montana: Currently developing policies and procedures to do this.

Ohio: Yes

If so, what percentage of the work is completed by consultants (versus in-house)?

Michigan: The construction engineering for each project is usually a combination of in-house and consultant activities.

Arkansas: The percentage varies and is dependent on ability of ArDOT staff to provide the staffing necessary for the construction schedule. For federal FY Oct. 1, 2016 to Sept. 30, 2017, the construction engineering and inspection (CE&I) task order agreements issued during this time totaled \$15,044,456. Billings during this timeframe for these CE&I task orders was less than 34.8 percent of the contract value.

Delaware: We mix consultant inspection staff with department inspectors, so it is difficult to say. Almost every project has some consultant help to administer the contract.

Florida: Approximately 82 percent of the CE&I work in the July 1, 2017, Adopted Five-Year Work Program for FY 2017-18 through FY 2021-22 is planned to be performed by consultants and 18 percent with in-house forces.

Georgia: 65 percent.

Idaho: Of total construction engineering, 64 percent is completed by consultants.

Maine: Completed by consultants, about 75 percent.

Missouri: 5 percent consulting and increasing.

Montana: Very little at this time; primarily used for specialty inspections or review of shop drawings.

Ohio: 5 percent of projects use consultants.

What is the average share of the total construction costs for consultant construction engineering versus in-house CE?

Michigan: As noted above, consultants and in-house CE is usually blended on each project. Each project is independent based on the characteristics of the CE needs for that project.

Delaware: A vast majority of the CE phase costs are attributable to consultants.

Florida: The Five-Year Work Program averages \$393 million per year for CE&I work performed by consultants and \$85 million per year with in-house forces.

Georgia: 45 percent.

Idaho: Of the total project costs, consultant construction engineering is 4.7 percent. In-house construction engineering is 2.6 percent.

Maine: Our analysis shows this varies depending on the project.

Missouri: We do not have enough data for a good comparison. Just starting to utilize consultants for construction.

Ohio: Across all projects, 2.91 percent of the cost is for consultants.