



Legislative Fiscal Bureau

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Joint Committee on Finance

Paper #779

Funding for Highway Program Engineering Consultants and Highway Program Rent Costs (DOT -- State Highway Program)

[LFB 2009-11 Budget Summary: Page 628, #7 & #8]

CURRENT LAW

The Department of Transportation (DOT) conducts design and construction engineering for state highway projects using a mix of Department staff and private engineering consultants. The cost for engineering is paid from the appropriations for the state highway improvement programs (state highway rehabilitation, major highway development, or southeast Wisconsin freeway rehabilitation).

DOT has a centralized management system for the administrative facilities used by all of its divisions. Rent and other facilities costs are paid from the departmental management and operations appropriation.

GOVERNOR

Reduce funding by \$11,682,400 SEG in 2009-10 and \$10,757,300 SEG in 2010-11 from the budget for engineering consultants in the state highway program.

Reduce funding by \$3,000,000 SEG annually in the appropriation for departmental management and operations to reflect the elimination of funding in the budget for the Division of Business Management for rental costs for facilities used by the state highway program.

DISCUSSION POINTS

1. This paper discusses two items in the bill that would have the effect of reducing funding for the state highway rehabilitation and major highway development programs. The first

item would be a direct funding reduction for design and construction engineering consultants of \$11,682,400 in 2009-10 and \$10,757,300 in 2010-11. Of these amounts, \$7,968,200 in 2009-10 and \$7,337,200 in 2010-11 would be from the appropriation for state highway rehabilitation and \$3,714,200 in 2009-10 and \$3,420,100 in 2010-11 would be from the appropriation for major highway development. The other item would indirectly impact the highway program funding by reducing DOT's departmental management and operations appropriation by \$3,000,000 annually for highway program-related rent and facilities costs, requiring those costs to be absorbed by the highway programs. The Department indicates that the facilities costs would be paid from the SEG appropriation for state highway rehabilitation, increasing the total impact on that program from the two items to \$10,968,200 in 2009-10 and \$10,337,200 in 2010-11.

2. The reduction in funding for engineering consultants would reduce the amount of project preparation work that can be done. The Department indicates, however, that the resulting level of funding would be sufficient to maintain the state highway programs at the proposed levels. In 2008-09, the Department's operating budget for the highway programs has approximately \$176 million for engineering consultants. Although the final level of funding for consultant engineers may vary depending upon the Department's allocation of resources within the highway programs, if the 2008-09 budget for consultant engineers is used as a base, the proposed reduction would amount to about 6% of that base. It is possible, however, that the Department could reallocate resources from other highway program areas to lessen the amount of this reduction, if necessary, to maintain an adequate level of resources for project delivery.

3. If, as the Department maintains, the reduced level of funding for consultant engineers would be sufficient to deliver the construction projects that can be funded at the proposed highway program funding levels, then the funding reduction for engineering consultants removes resources that could otherwise be reallocated for both design and construction of additional highway improvement projects. Consequently, although the proposed reduction may not limit the Department's ability to deliver a proposed level of construction, it would ultimately have the effect of reducing program output.

4. Similar to the reduction for engineering consultants, the reduction for rent and other facilities costs would ultimately reduce the amount of output in the state highway rehabilitation program, since those facilities costs are generally unavoidable under the program's current size and administrative configuration.

5. If the Committee decides to increase funding for the state highway rehabilitation and major highway development programs, one alternative would be to restore the funding reductions under these items. Separate decisions could be made to restore the engineering consultant funding for state highway rehabilitation [Alternative #2a], for major highway development [Alternative #2b], and for highway program rent and facilities costs [Alternative #2c].

6. As the size of the state highway programs has expanded over the past decade, the Department has relied increasingly on engineering consultants for both design and construction engineering, since the number of DOT engineering and related staff has generally declined. According to a 1997 audit by the Legislative Audit Bureau (LAB), in 1995-96, 60% of project

engineering was done by in-house staff and 40% was done by consultants. For 2007-08, DOT indicates that 34% of total highway engineering expenditures were for in-house staff and the remaining 66% were for consultants. While there may be some differences in the methodologies used by LAB and DOT, the overall downward trend is apparent.

7. Some have argued that the increased reliance on engineering consultants has unnecessarily increased costs in the highway program, citing a 2004 DOT study that concluded that the costs for design work done by consultant engineers are about 18% higher than designs done by DOT staff. In addition, on May 12, 2009, the Legislative Audit Bureau released findings of an analysis that found that retaining consultants for construction engineering was frequently more expensive than using in-house staff. Out of the 214 cost-benefit analyses done prior to hiring consultants between March, 2007, through June, 2008, LAB reported that 125 (58%) indicated that hiring the consultants would be more expensive than using in-house staff, yet in all these cases the Department retained consultants for the work. The Department indicated to LAB that consultants were retained in these cases because it did not have sufficient in-house staff to complete the work.

8. A 2008 report prepared by the U.S. Government Accountability Office (GAO) found that the recent trend toward increasing reliance on engineering consultants is common in many states. GAO noted that this trend may pose some problems if the level of engineering expertise in state highway departments erodes. Without adequate in-house expertise, it may be increasingly difficult for state staff to effectively oversee consultants' engineering work and provide transportation policy guidance on many technical as well as general issues.

9. GAO's report also reviewed several studies that compare the cost of conducting highway designs by engineering consultants with the cost of conducting design activities with in-house staff. GAO reports that most studies reached the conclusion that the cost of design engineering done by in-house staff is lower. However, the report notes that many of these studies have limitations that make it difficult to conduct a reliable cost comparison. Most notably, while the studies generally try to compare the costs for similar types of projects, there are likely systematic differences in the types of projects done by consultant engineers and those done by in-house staff. Specifically, consultant engineers are generally called upon for design engineering on more complex or specialized projects, the design for which should be expected to be more costly.

10. The Department's capacity to perform engineering tasks with state staff is limited by the number of engineering and associated positions that the Department has at any given time, limits that become tighter if some authorized positions are held vacant. On January 24, 2008, the Secretary of the Department of Administration instructed agencies to avoid filling "non-essential" position vacancies in response to the state's general fiscal condition, a directive that has contributed to an increase in the number of vacant positions involved in highway project engineering. The Department's Division of Transportation System Development has had an average of 111 position vacancies in 2008-09, which is 7.7% of the total number of authorized positions in the Division. While the DOA directive may allow some agencies to meet current general fund lapse requirements, in the case of DOT highway project development, the increasing number of vacancies likely has led to an increasing use of consultants.

11. If the Committee determines that the Department's capacity to perform highway engineering tasks with in-house staff should be increased, it may not be sufficient to increase the number of the Department's authorized engineering positions, since those positions would not necessarily be filled. However, the Department would be more likely to fill existing or additional positions if it was deemed necessary to meet a statutory requirement. The bill could be amended to create a requirement that a minimum specified percentage of total highway project engineering expenditures in each fiscal year be related to engineering services performed by in-house staff. The minimum percentage could be established at various levels, but one alternative would be to set it at 50%. This alternative could require the Department to promulgate an administrative rule establishing the methodology for measuring in-house and consultant expenditures. In order to account for short-term increases in the size of the program, an exception to this requirement could be provided in cases where the Department determines that the only way to develop designs for enough projects to use available funding would be to increase the use of engineering consultants above 50%, provided that the Department requests the additional positions in its next biennial budget request that are necessary to meet the 50% requirement [Alternative #B1].

12. The amount by which in-house staff capacity can be increased in the short term is somewhat limited by practical considerations. Most significantly, the Department indicates that it takes about three years for entry-level civil engineers to attain a level of experience that allows them to be fully utilized in the highway program. Consequently, any increase in positions in an attempt to raise the Department's in-house engineering capacity would result in a portion of program resources being devoted to training costs, although to the extent that the Department can hire employees with some experience, those costs would be lessened.

13. Given the limitations described in the previous point, it may not be feasible to significantly increase the percentage of design work done by DOT employees in one biennium. If, however, the Committee decides to increase the percentage of engineering work done by DOT's in-house staff over time, the alternative discussed in the previous points could provide additional engineering positions in the current budget, but delay requiring that a 50% in-house goal be met until the end of the 2011-13 biennium. With such a statutory requirement, the Department may be required to request additional positions as needed to attain and maintain the in-house percentage.

14. The Department indicates that the addition of 50 positions in one biennium would not create unmanageable training or other personnel issues. To substitute for services currently done by consultants, a variety of position types would be required. In addition to civil engineers of various classifications, the Department's ability to replace work currently done by consultants would depend on the addition of positions related to real estate, environmental review, planning, and various other technical design tasks. In its 2007-09 budget request, the Department requested 25 positions of 11 different classifications to increase its in-house design capacity for southeast Wisconsin freeway rehabilitation projects, a request that was not included in the final bill. One alternative would be to provide 50 positions with the same ratio of those 11 position types as the Department had requested.

15. The salary, fringe benefits, and other support costs for the 50 positions under the

alternative described in the previous points would be \$2,641,200 in 2009-10 and \$3,471,700 in 2010-11. The Committee could reallocate funding from amounts provided for engineering consultants, to reflect the intent to shift a portion of the current design work from consultants to in-house staff. This decision could be made independently of the decision to restore the engineering consultant funding, as discussed in this paper.

16. Although the previous points present an alternative consistent with the argument that state staff can conduct highway engineering activities at a lower cost than consultants, a counter argument can also be made. The Department's 2004 study, referenced above, compared the actual cost of designs completed with in-house staff with those done by consultants for all state highway improvement projects over a four-year period. As such, the design-related costs for in-house staff reflected the average salary and overhead costs and the average productivity for state staff over that period. However, as noted above, DOT indicates that entry-level engineers may require up to three years to become fully productive, meaning that their productivity in relation to their cost may be lower than for the average DOT engineer. Consequently, whereas the price paid for designs prepared by consultants will generally reflect any training-related costs (including the "cost" associated with the reduced productivity of inexperienced engineers), DOT's in-house costs for any point in time may not reflect the costs associated with inexperience if the number of entry-level, in-house engineers is relatively few at that time. If the Committee provides new positions and requires the Department to reach a statutory minimum for in-house engineering, the cost of producing a given amount of engineering services by in-house staff may be higher in the short run than the same amount produced by consultants because of the training costs associated with the new employees.

ALTERNATIVES

A. Highway Program Funding Items

1. Approve the Governor's recommendation to reduce funding by \$11,682,400 SEG in 2009-10 and \$10,757,300 SEG in 2010-11 from the budget for engineering consultants in the state highway program and reduce funding by \$3,000,000 SEG annually in the appropriation for departmental management and operations to reflect the elimination of funding in the budget for the Division of Business Management for rental costs for facilities used by the state highway program.

2. Modify the Governor's recommendation by adopting one or more of the following alternatives:

a. Provide \$7,968,200 SEG in 2009-10 and \$7,337,200 SEG in 2010-11 to restore funding for design engineering in the appropriation for state highway rehabilitation.

ALT A2a	Change to Bill Funding
SEG	\$15,305,400

b. Provide \$3,714,200 SEG in 2009-10 and \$3,420,100 SEG in 2010-11 to restore funding for design engineering in the appropriation for major highway development.

ALT A2b	Change to Bill Funding
SEG	\$7,134,300

c. Provide \$3,000,000 SEG annually in the appropriation for departmental management and operations to restore funding for rent and other facilities costs related to highway program administrative facilities.

ALT A2c	Change to Bill Funding
SEG	\$6,000,000

B. Highway Program Engineering Positions

1. Provide 50 positions annually (27.5 SEG and 22.5 FED) for highway design functions and require that at least 50% of highway engineering expenditures be for engineering activities conducted by Department staff by July 1, 2013, and annually thereafter. Require the Department to promulgate an administrative rule establishing the methodology for measuring in-house and consultant expenditures. Specify that the Department may use engineering consultants for more than 50% of project engineering work if the Department determines that the only way to develop designs for enough projects to use available highway program funding would be to increase the use of engineering consultants above 50%, provided that the Department requests any additional positions in its next biennial budget request that are necessary to meet the 50% in-house engineering requirement. Reallocate \$2,641,200 in 2009-10 and \$3,471,700 in 2010-11 from the Department's budget for engineering consultants to provide funding for salary, fringe benefits, and other support costs associated with the 50 positions.

ALT B1	Change to Bill Positions
SEG	27.50
FED	<u>22.50</u>
Total	50.00

2. Maintain current law.

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