



Legislative Fiscal Bureau

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May 9, 2001

Joint Committee on Finance

Paper #930

Computer Database Redesign (DOT -- Motor Vehicles)

[LFB 2001-03 Budget Summary: Page 669, #1]

CURRENT LAW

The Department of Transportation has been in the process of replacing the Division of Motor Vehicles' vehicle and driver record databases and application programs since 1989. The amount of base funding for the systems redesign effort varies depending upon the amount of other data processing that must be done to implement legislative changes, such as changes in motor vehicle laws, or perform system maintenance. DOT has 38.5 positions in DMV and the Division of Business Management and five contract programmers working on the redesign effort or other data processing, depending upon the relative workload. The total, annual salary and fringe benefits cost for these positions, plus contractor payments associated with the contract programmers, is \$3,632,500. The DOA mainframe rate charge cost associated with these programmers is \$1,028,100 annually.

GOVERNOR

Provide \$3,660,900 SEG in 2001-02 for computer programming and database redesign. This amount would be used as follows: (a) \$387,200 for data processing necessary to implement a provision of 1997 Act 27 that requires DOT to register automobiles for exactly one year beginning on the day that the vehicle was registered, instead of beginning either on the first day of the month the vehicle is registered or the first day of the following month; (b) \$273,700 for data processing necessary to implement 1999 Act 88, which requires DOT to include a place on vehicle registration and driver's license applications for applicants to request that their personal information not be released in lists of 10 or more records; and (c) \$3,000,000 for the ongoing redesign of the Division's driver and vehicle databases. The bill would place the \$3,000,000 for database redesign in unallotted reserve until the completion of a study of the Department's information technology needs.

DISCUSSION POINTS

1. The Division of Motor Vehicles began to replace the computer databases and application programs that are used to perform the automated functions of the Division in 1989, using federal funds provided by Congress for implementing a uniform commercial motor vehicle driver's licensing system. Since that time, DMV has used base resources and increases provided by the Legislature to continue the database redesign project. The bill would provide additional funding in 2001-02 to continue this effort, but would provide no funding in 2002-03, and so there would be no increase in the ongoing funding for the project.

2. DOT indicates that without additional, ongoing funding, the Division would continue to use base resources for redesign, but that maintaining the current systems and making modifications to implement legislative changes, such as changes to motor vehicle laws, would be of a higher priority than the redesign project. Because system maintenance and legislative changes generally consume a large portion of DOT's resources devoted to DMV data processing, DOT estimates that the redesign project will take approximately 20 more years to complete without additional funding increases.

3. DOT indicates that one of the reasons that the redesign process is expected to take 20 years to complete is that resources that had been devoted to or provided for the redesign process in the past have been diverted to make legislative changes and to maintain the system. For instance, implementing the provisions of 1999 Act 9 that require a graduated driver's licensing system for young drivers took about 500 programmer-days, at an estimated cost of \$235,100. Act 9 did not provide funding for this data processing, so base resources, which otherwise would have been used for the redesign project, were used instead. Similarly, preparing the Division's systems for the date recognition problems associated with the year 2000 cost about \$3,000,000, which also diverted resources from redesign. DOT expects programming resources will continue to be devoted to these types of changes in the future, accounting for the long time needed to complete the redesign project with base resources.

4. Another reason that the redesign is expected to take a long time to complete is the complexity of the system. The entire system is made up of about 7,100 computer programs, which control nearly every process within the Division. Over time, the system has become increasingly complex because modifications have been made regularly since the system was first created in the 1970s. A considerable amount of time spent redesigning the system will involve examining the code of numerous programs to determine what linkages may exist between programs and what changes are necessary to continue to allow different parts of the system to interact. Often changes that are made to one part of the system may cause unforeseen problems for other parts of the system that were created many years earlier, which can require a significant amount of time to correct.

5. The amount of programming needed to redesign DMV's computer systems is somewhat consistent with the resources needed to make modifications to computer systems in other agencies. It is estimated that DOR's integrated tax system (ITS), for instance, will cost \$59.4 million. DWD's kids information data system (KIDS) was developed at a cost of \$51.5 million. DOT has spent approximately \$14 million on the redesign project and estimates that the remaining

cost of the project will be between \$25 million and \$35 million.

6. DOT has identified several reasons for replacing the old system. First, the old databases and programs have become difficult to maintain. While these databases were innovative for the 1970s, they are of a type that is no longer used and, therefore, unfamiliar to most programmers. Similarly, the application programs are in a computer language called Assembler that is difficult to use and no longer widely taught. The new systems, in contrast, use common database programs and programming languages.

7. Secondly, while the old systems were built to efficiently process information, they are difficult to modify. As the overall system has been modified over a period of 20 years to 30 years, it has become very complex and increasingly difficult to make further modifications. In contrast, the new system is being built to be easily modified. For instance, creating a "charge code" to track a new traffic offense as the result of legislation takes about 160 days of programming using the old system, but will take only about a week with the new system, changing the total cost from about \$90,000 to \$3,000. Modifying the vehicle registration system to account for a new, revenue-producing license plate, such as the Ducks Unlimited plate, takes about 330 days of programming using the old system at a cost of about \$166,000, but only about 30 days under the new system at a cost of about \$15,000. DOT indicates that most routine changes could be done in about one-third of the time under the new system, compared to the old system. Currently, most legislative changes must be done in both systems, since both are still operational.

8. Another advantage cited by DOT to replacing the old system is that the new system has or will lead to several process improvements that can reduce the amount of time required to complete certain transactions. For instance, under the new system, traffic citations and court-ordered license suspensions can be transmitted to DOT electronically from those courts that are equipped to do so, which, in most cases, means that driver records get updated automatically and that no further processing is required by DMV staff. Currently, the City of Milwaukee submits about 128,000 traffic citations electronically each year and will soon begin submitting their license suspension orders electronically, with a volume estimated at about 10,000 annually. Each suspension submitted electronically is expected to save about \$4 worth of staff time. DOT indicates that process improvements like these are part of the reason that the Division has been able to keep pace with a 20% increase in workload over the past decade even while the Division's staff level has declined by nearly 5%.

9. In its budget request, DOT had asked for \$3,000,000 annually to hire contract programmers in order to accelerate the redesign project. The bill, however, would provide \$3,000,000 in 2001-02 only, which may have disadvantages from a programming efficiency perspective. DOT indicates that it typically takes several months for contract programmers to become familiar with the Department's systems and the programming tasks that need to be performed. For this reason, the amount of useful programming from a contract programmer can be maximized if programmers can be retained for a long time after they become familiar with the redesign project. The one-time nature of the bill's funding would not allow DOT to retain the programmers for very long after the training period.

10. If the \$3,000,000 provided in the first year of the biennium were divided evenly between both years, and the funding was provided on an ongoing basis, DOT would hire fewer programmers, but would be able to retain them beyond the 2001-03 biennium, which would allow the Department to take advantage of their experience beyond the first year. DOT indicates that the redesign project would take about 11 years to complete with this level of additional, ongoing funding.

11. In its budget request, DOT had proposed that \$1,000,000 of the \$3,000,000 requested for the redesign project in the first year be used for a consultant study of the Department's computer systems, designed to help the Department to efficiently manage all of its computer resources. The consultant would make recommendations related to the DMV redesign project as well as computer systems in other program areas, such as state highways or State Patrol communications. DOT believes that the consultant would help the Department determine, among other things, what computer technologies could best improve the Department's operations.

12. The bill would place the \$3,000,000 provided for the redesign project in unallotted reserve. The Executive Budget Book indicates that the Governor is requesting that DOT conduct a study like the one proposed in the Department's budget request, although it does not specify how much of the \$3,000,000 provided for the redesign project should be used for the study. DOA indicates that a portion of the funding would be released for the study and the remainder would be released upon completion of the study. The amounts released for the study would be determined based on the proposals that DOT would receive from potential study consultants.

13. DOT indicates that about \$50 million is spent each year for Department-wide services and products related to information technology. In addition, DOT estimates that the total cost to complete the DMV redesign project would be \$25 million to \$35 million. Given the large investment in computer resources, both currently and anticipated in the future, the proposed study may be justified to allow the best management of those resources. A \$1,000,000 investment in a consultant study may allow DOT to save more than that amount in the future, either by avoiding investment in unproductive technology or by making recommended process improvements in various program areas.

14. The \$1,000,000 for the study could be provided for DOT's Division of Business Management, instead of for DMV, to reflect the intent that the study examine Department-wide computer resources.

15. The budget bill would create a Department of Electronic Government (DEG). Although some of the new Department's duties would be transferred from DOA's Division of Technology Management and other agencies, DEG would have new duties and authority that may evolve over the next several years if the Department is created. One of the duties of DEG may be to coordinate studies like the one proposed by DOT, to allow all agencies to take advantage of consultant services. Consequently, the proposed DOT study could be delayed to allow DEG to develop a statewide strategy for managing computer resources. If the Committee determines that the study should not be done or should be delayed, the funding provided by the bill could be placed in DMV's supplies and services line, instead of in unallotted reserve, to allow DOT to use the

funding immediately for the redesign project.

16. One reason that the budget bill would only provide one-time funding and would request a computer systems study may be the uncertainty associated with the benefits and costs of the redesign project. This uncertainty may be decreased if DOT were required to prepare a biennial report, to be presented to the Joint Committee on Finance and the standing committees of the Legislature dealing with transportation issues, on the progress being made on the redesign project and goals of the project in the upcoming years. This would provide those committees and the full Legislature with more information to make decisions on the level of funding that should be devoted to computer programming in the Division, including information on whether savings generated from process efficiencies should be reallocated to the project.

17. The bill would also provide funding that DOT requested to implement two motor vehicle law changes that were required by previous legislation. In 2001-02, \$387,200 would be provided to implement a provision of 1997 Act 27 that requires DOT to register vehicles for exactly one year beginning on the day that the vehicle was registered, instead of beginning on the first day of either the current month or the following month, depending upon when the vehicle was first operated in the state. Also in the first year, \$273,700 would be provided to implement 1999 Act 88, which requires DOT to include a place on vehicle registration and driver's license applications for applicants to request that their personal information not be released in lists of 10 or more records. If these amounts are not provided, DOT would have to do the data processing necessary to implement these provisions using base resources that are currently devoted to either the redesign project or other base activities.

ALTERNATIVES

1. Approve the Governor's recommendation to provide the following amounts in 2001-02: (a) \$387,200 SEG for data processing necessary to implement a provision of 1997 Act 27 that requires DOT to register automobiles for exactly one year beginning on the day that the vehicle was registered, instead of beginning either on the first day of the month the vehicle is registered or the first day of the following month; (b) \$273,700 SEG for data processing necessary to implement 1999 Act 88, which requires DOT to include a place on vehicle registration and driver's license applications for applicants to request that their personal information not be released in lists of 10 or more records; and (c) \$3,000,000 SEG in unallotted reserve for a study of DOT's computer systems and for the redesign of the Division of Motor Vehicles' databases.

2. Modify the Governor's recommendation by shifting \$1,500,000 SEG from 2001-02 to 2002-03 to provide ongoing funding for the redesign of the Division of Motor Vehicles' driver and vehicle databases and transferring \$1,000,000 SEG in 2001-02 from the Division of Motor Vehicles to the Division of Business Management for a consultant study of DOT's computer systems. Under this alternative, the remaining funding for the redesign project (\$500,000 SEG in 2001-02 and \$1,500,000 SEG in 2002-03) would be placed in unallotted reserve pending the completion of the consultant study.

3. Modify the Governor's recommendation by shifting \$1,500,000 SEG from 2001-02 to 2002-03 to provide ongoing funding for the redesign of the Division of Motor Vehicles' driver and vehicle databases. Require DOT to prepare an report by January 30, 2002, and biennially thereafter, to be presented to the Joint Committee on Finance and the Senate and Assembly committees that deal with transportation issues, on the progress of the redesign of the DMV's databases. Specify that the report must include a discussion of the following: (a) portions of the redesign project that have been completed; (b) portions of the redesign project that will be completed in the near future; (c) process changes that have been made possible by recent progress on the redesign project or may be possible in the near future; and (d) any recommendations of funding changes or legislation that may facilitate the redesign project or process improvements. Under this alternative, no funding would be provided for a study of DOT's computer systems.

4. Modify the Governor's recommendation by deleting the \$3,000,000 SEG in 2001-02 for a study of DOT's computer systems and the redesign of the Division of Motor Vehicles' database. Under this alternative, funding would be provided to implement earlier legislative actions, but the redesign project would have to proceed using only base resources.

Alternative 4	SEG
2001-03 FUNDING (Change to Bill)	- \$3,000,000

5. Maintain current law.

Alternative 5	SEG
2001-03 FUNDING (Change to Bill)	- \$3,660,900

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