

OHIO DEPARTMENT OF TRANSPORTATION

# BUSINESS PLAN

2006 & 2007

ADDENDUM

SEPTEMBER 2006

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## INTRODUCTION

The Ohio Department of Transportation is at the midpoint of its 2006-2007 biennial business plan, but vast increases in heavy highway construction prices have greatly skewed ODOT's original funding forecasts and rendered the 2006-2007 Business Plan obsolete. Because of this, ODOT is resubmitting its 2006-2007 Business Plan to reflect a mid course adjustment of budget and program goals.

In brief, highway construction costs increased almost 30 percent from 2003 to 2005, greatly diminishing the level of effort ODOT could sustain in paving, bridge repair and replacement and new construction programs. In addition, fuel tax revenue growth has slowed to zero after nearly two decades of steady growth.

This modification of the 2006-2007 Business Plan addresses the scope and magnitude of the construction cost inflation and revenue reductions facing ODOT and the efforts made to respond to the changes while still attempting to meet project delivery and system condition

goals. These efforts include:

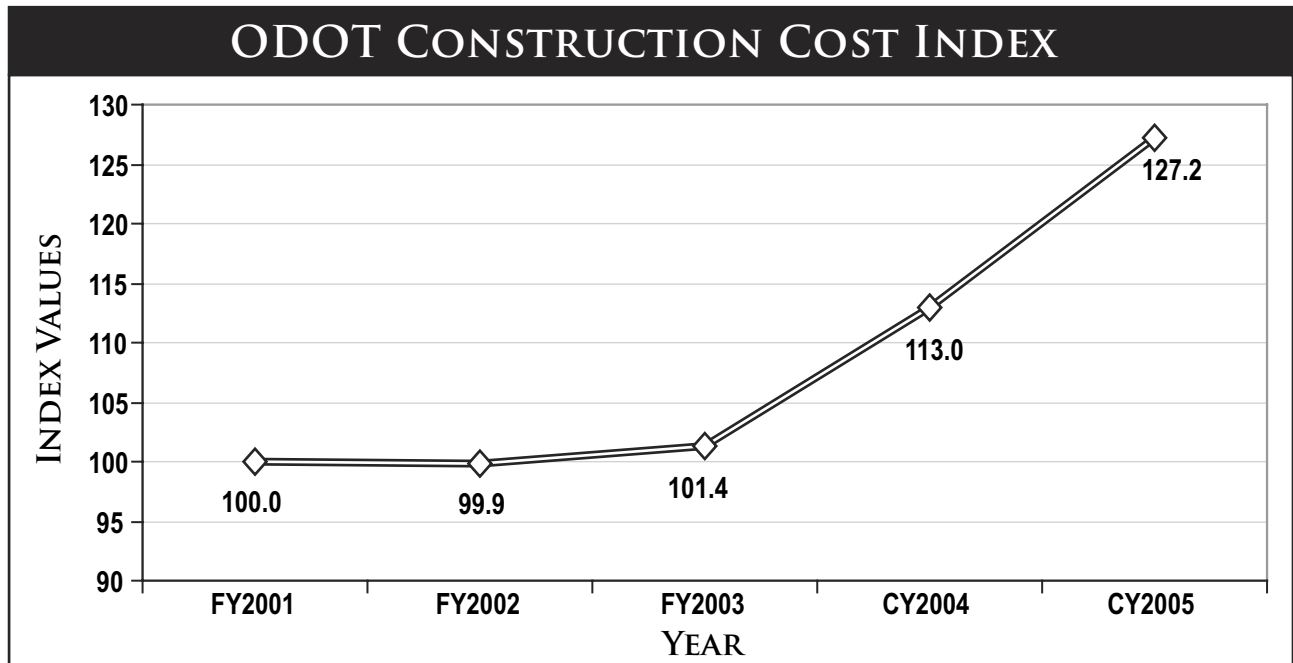
- Examining the budget for new areas of cost containment;
- Adjustment of program funding levels;
- Review and possible adjustment of system condition goals;
- Changes in project schedules, especially for Major New projects; and
- Finance options, including bond finance analysis.

With this as background, the rest of the document lays out the new Business Plan for the last year of the 2006-2007 biennium, including program and funding adjustments.



## HEAVY HIGHWAY CONSTRUCTION COST INFLATION, 2001 - 2005

After five years of stable and competitive project construction costs, ODOT experienced rapidly escalating costs beginning in 2003 and continuing through 2005 and even into the first half of 2006. As shown in the chart below, construction costs were stable from 2001 through 2003, but then increased rapidly in 2004 and 2005; cumulatively, this escalation was 27.2 percent more than 2001 costs.



There are myriad reasons for dramatic highway construction cost increases, all of which came together at roughly the same point in time. The root cause appears to be energy prices, which affect both material production and construction activities such as excavation, installing pipe, delivering materials and moving equipment.

World energy prices in general, and diesel fuel prices in particular, are affected by rising demand in developing countries such as China and India. At the same time, political unrest in oil producing regions such as the Mideast, Venezuela and parts of Africa have caused price instability. In the shorter term, U.S. oil refining capacity – already severely constrained – was further reduced by 2005 hurricane damage in the Gulf of Mexico.

Energy cost increases rippled through other construc-

tion products such as aggregate, cement and asphalt. Aggregate and cement production are both energy-intensive, and asphalt prices are directly tied to crude oil markets. Petrochemical price increases were passed through the production of plastic drainage pipe – another key highway cost component. Not to be ignored is the fuel-intensive nature of highway construction itself, for excavation, earth moving, grading and hauling.

The industry has also experienced tight supply and strong inflation in steel prices, mostly due to world demand, but these price increases, unlike construction prices overall, have seemed to moderate in 2006.

Construction price inflation became especially acute in 2005; while the general economy saw average inflation increase about 3 percent, highway construction



## HEAVY HIGHWAY CONSTRUCTION COST INFLATION, 2001 - 2005 (CONTINUED)

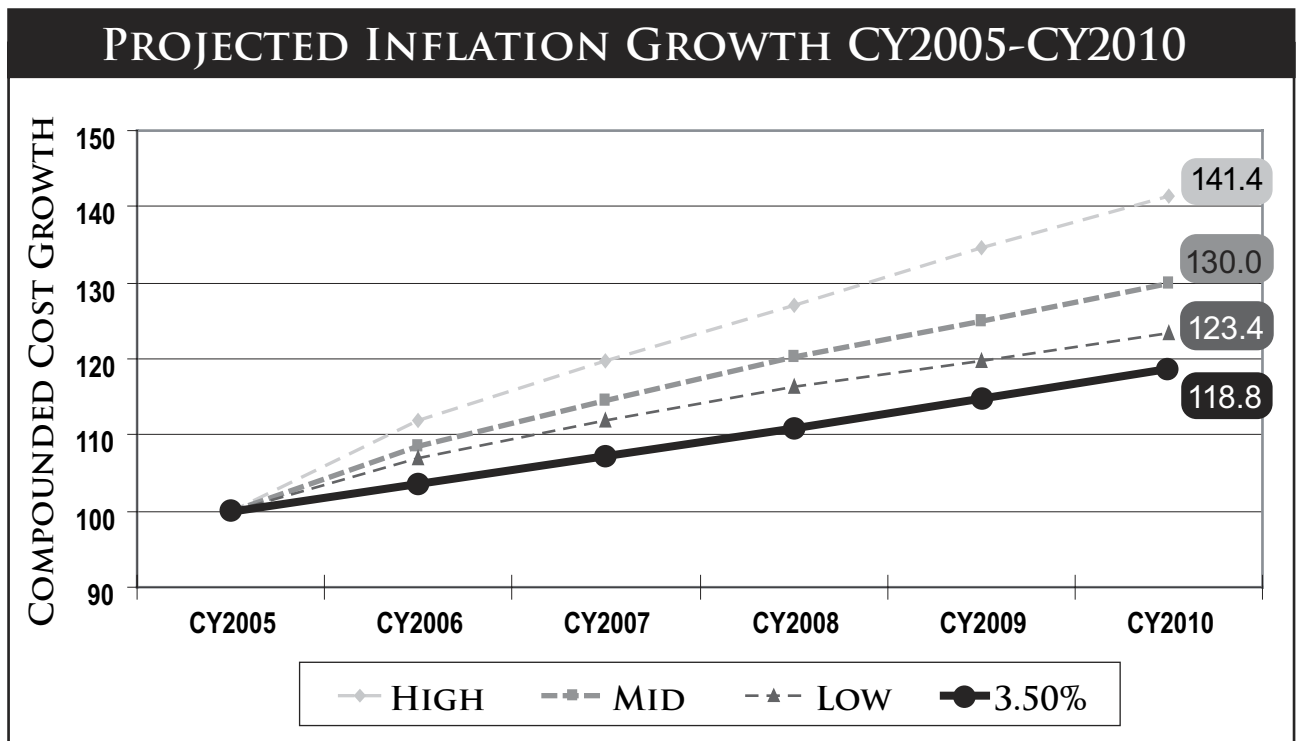
commodities (in Ohio, and in general throughout the nation) rose 11.1 percent from January 2005 to January of 2006.

For the most part, ODOT monitored the increases in construction costs in 2005, since basic commodity prices such as crude oil and steel have a history of fluctuation. There was no particular reason to assume that construction cost increases would be more permanent than in the past.

The price effects in SFY 2006 were not immediately clear because of a particular strategy ODOT uses to bid its program. ODOT intentionally schedules small first quarter bid lettings because it traditionally gets fewer bidders and therefore higher prices when projects are let to bid in the summer. For SFY 2006 the first and second quarter (that is, July 1 to December 30, 2005) program size was relatively modest and price hikes were not overly alarming. With the January 2006 start of the third quarter, ODOT was poised to bid 46 percent of its program, or \$678 million. As soon as January bids came in for major projects, it was clear that the price increases of 2004 and 2005 had not abated but had continued to increase.

It appears that the fuel, steel, cement and asphalt price increases were not attributable to short-term fluctuations caused by shortages, hurricanes, political unrest or other temporary factors. It appears that these new prices represent a permanent plateau which will be a higher baseline for even further inflationary increases throughout Calendar Year 2006 and beyond. A review of futures markets and construction industry literature does not produce confidence that prices will decline. ODOT had been planning for inflation cost increases of 3.5 percent annually and now has to adjust its program significantly.

In the following chart, the solid black line indicates the rate of inflation growth ODOT expected. Now, ODOT's internal analysis of future price increases indicates that even the most conservative inflation forecast exceeds ODOT's planned inflation rate. The most conservative rate indicates a 23 percent price increase by 2010 while the most liberal assumes a 41 percent increase. ODOT is assuming that the mid-range forecast of a 30 percent increase is the most probable. In other words, ODOT's new forecast calls for inflation to be 66 percent greater than previously planned for between 2006 and 2010.



## STATE AND FEDERAL REVENUE TRENDS

Historically, ODOT has experienced a growth in state motor fuel tax revenue of about 1 percent annually, and has fit this trend into past financial forecasts. Due in part to fuel cost escalations and other economic trends, state motor fuel tax growth has slowed to zero. On an annual revenue base of approximately \$1 billion, this represents a forecast reduction of about \$12 million annually.

The federal revenue picture is always more difficult to predict. Most troubling, the federal highway trust fund is forecasted to be insolvent by 2009 or 2010 – funds are being spent faster than revenue is being generated. In the next federal bill, lawmakers will need to either increase federal revenue or adjust program outlays.

ODOT has in the past seen federal revenue grow by about 5 percent annually. With the uncertainty of the federal trust fund solvency, ODOT will be much more conservative about federal revenue forecasts, which reduces the federal fund forecast in 2015 by about \$350 million.

The following table illustrates the dynamic nature of state and federal revenue assumptions (net of debt service). Under the slow growth assumption, state revenue remains flat and federal grows at 1 percent annually starting in 2010; under the moderate growth assumption, state revenue grows at 0.5 percent annually and federal revenue at 3 percent beginning in 2010; and in the last scenario, state revenue grows at its historic average of 1 percent annually, and federal at its historic average of 5 percent beginning in 2010.

### STATE AND FEDERAL REVENUE ASSUMPTIONS (IN MILLIONS)

	FISCAL YEAR								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>REVENUE UNDER A SLOW GROWTH ASSUMPTION</b>									
STATE	\$1,079	\$1,059	\$1,047	\$1,044	\$1,050	\$1,058	\$1,050	\$1,055	\$1,062
FEDERAL	\$1,150	\$1,193	\$1,176	\$1,158	\$1,173	\$1,191	\$1,197	\$1,202	\$1,206
<b>TOTAL REVENUE</b>	<b>\$2,229</b>	<b>\$2,252</b>	<b>\$2,224</b>	<b>\$2,202</b>	<b>\$2,222</b>	<b>\$2,249</b>	<b>\$2,247</b>	<b>\$2,257</b>	<b>\$2,268</b>
<b>REVENUE UNDER A MODERATE GROWTH ASSUMPTION</b>									
STATE	\$1,079	\$1,059	\$1,047	\$1,050	\$1,063	\$1,078	\$1,076	\$1,089	\$1,102
FEDERAL	\$1,150	\$1,193	\$1,176	\$1,184	\$1,225	\$1,271	\$1,306	\$1,341	\$1,376
<b>TOTAL REVENUE</b>	<b>\$2,229</b>	<b>\$2,252</b>	<b>\$2,224</b>	<b>\$2,234</b>	<b>\$2,288</b>	<b>\$2,349</b>	<b>\$2,382</b>	<b>\$2,430</b>	<b>\$2,478</b>
<b>REVENUE UNDER AN AGGRESSIVE GROWTH ASSUMPTION</b>									
STATE	\$1,079	\$1,059	\$1,047	\$1,057	\$1,077	\$1,098	\$1,104	\$1,123	\$1,143
FEDERAL	\$1,150	\$1,193	\$1,176	\$1,209	\$1,278	\$1,354	\$1,422	\$1,491	\$1,564
<b>TOTAL REVENUE</b>	<b>\$2,229</b>	<b>\$2,252</b>	<b>\$2,224</b>	<b>\$2,267</b>	<b>\$2,355</b>	<b>\$2,453</b>	<b>\$2,526</b>	<b>\$2,615</b>	<b>\$2,707</b>



## BACKGROUND: ODOT BUDGET PHILOSOPHY

By internal policy, ODOT has for the past 10 years attempted to budget in a manner which rationalizes and prioritizes program spending. To vastly oversimplify, ODOT's first priority is to fund basic departmental operations such as payroll and salt for snow and ice control, and its last priority is to fund new system capacity projects. A host of programs and budget priorities lie in between.

ODOT's Pro Forma budget (see Pages 8-9 in the center of this document) reflects its budgeting process and priorities. The top portion of the Pro Forma represents revenue sources from the state motor fuel tax, federal apportionments and miscellaneous sources.

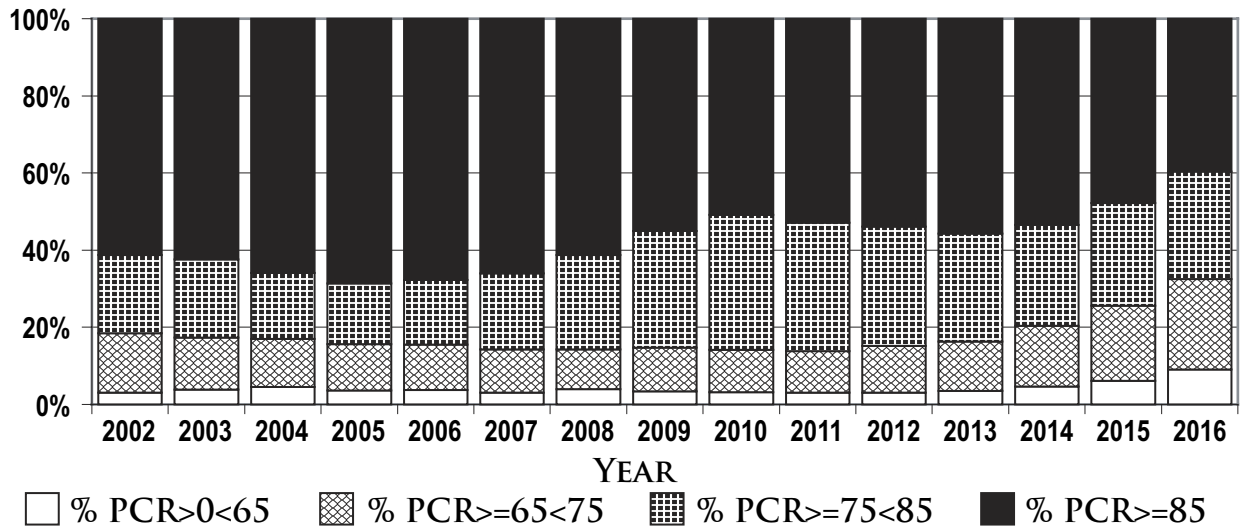
The next section of the Pro Forma outlines the department's \$750 million operating budget. ODOT's first priority is to keep the department operating by providing the most basic level of service for customers: for example, routine roadway maintenance, traffic signal maintenance and repair, guardrail, pavement marking, sign replacement and materials and equipment for snow and ice season. By policy ODOT has held operating cost growth to less than 2 percent annually and staff levels are not to exceed 6,031 employees.

After routine operations are funded, ODOT next funds about \$800 million in system preservation programs, such as pavement resurfacing and bridge repair and

replacement. The bulk of these funds are for district pavement and bridge projects, with the allocation calibrated to fund the level of effort necessary to sustain system conditions at an acceptable level in each district. There are also programs to fund the complete reconstruction of freeway pavement and rehabilitation or replacement of major bridges which are too expensive for district offices to repair with their allocation. Without this constant and sustained level of funding, the transportation system would fall into a state of disrepair.

ODOT's pavement funding is goal-driven and calibrated to sustain a low and predictable level of deficiencies. For freeway pavement, the goal is to have at least 90 percent of the system at a pavement condition rating of 65 or better. For urban and general (two-lane) system pavements, the condition threshold is 55 or better. The program is funded at a level which allows district offices to pave enough roads every year to meet and sustain the goal.

### ODOT PRIORITY SYSTEM PAVEMENTS 2002 - 2016



A PAVEMENT CONDITION RATING (PCR) GREATER THAN 65 IS CONSIDERED ACCEPTABLE FOR FREEWAY PAVEMENT

ODOT tracks two dynamic factors to forecast pavement conditions. Inspectors evaluate the state’s pavements annually and update its condition, rating it on a pavement condition rating scale that tops out at 100; this data is uploaded to a program management system, which records the rating and forecasts the pavement’s degradation in future years. The second dynamic factor is project information. The program management system records the pavement and bridge projects that will be performed in current and future years and calculates the miles of pavement that will improve after a paving project. The program management system combines the two dynamic factors – pavement condition rating and degradation, and future project information – to forecast pavement conditions in future years.

For illustration, the chart on Page 5 shows priority (i.e., freeway) pavement condition ratings starting at 2002 and forecasted through 2016. The black and shaded bands show acceptable pavement, and illustrate that 96 to 97 percent of the pavement inventory will meet acceptable condition ratings, which is well above the goal of 90 percent.

Like pavements, ODOT manages bridges based on performance goals. The department conducts annual bridge inspections and rates bridges in four categories: general appraisal, floor conditions, wearing surface and paint condition. Each of the four factors has its own goal which all districts are striving to meet. The statewide goal for each factor in 2006, with actual performance, is shown in the table below.

As with pavements, ODOT’s program management system tracks bridge conditions and their forecasted degradation and calculates the effect of future projects on improving the state’s bridge inventory. With current funding levels, the forecast shows ODOT continuing to meet its high level of bridge conditions.

After system preservation, safety is the department’s next priority. ODOT funds about \$70 million annually in safety projects such as intersection improvements, traffic signals, turn lanes and other roadway modifications. The

BRIDGE CONDITION GOALS		
RATING FACTOR	2006 GOAL*	2006 ACTUAL
General Appraisal	95.5 %	97.94 %
Floor Conditions	94.5 %	96.44 %
Wearing Surface	96.5 %	97.15 %
Paint Condition	88.0 %	92.99 %
*Percent of total bridge inventory, measured in deck area, which meets or exceeds acceptable conditions.		

safety program is also goal driven, with the department having specific long term safety improvement objectives, such as reducing the crash fatality rate from 1.31 per 100 million vehicle miles traveled, to 1.0 by 2008.

After safety, the department funds about \$175 million in miscellaneous statewide programs, such as railroad warning devices, rest areas, noise walls, Amish buggy lanes and park road paving projects.

Next in terms of budget priority, ODOT allocates approximately \$275 million to local programs such as Metropolitan Planning Organizations and county bridge and paving projects. Much of this funding is federal and is mandated to be spent for such local priorities, so there is relatively little discretion in the level of spending.

Finally, the last budget priority of ODOT is to fund the Major New Program, which funds capacity addition projects costing more than \$5 million. In 2003, Gov. Bob Taft announced his Jobs and Progress Plan, which laid out \$5 billion in Major New project spending over a 10 year period for projects such as Interstate 75 in Dayton and Cincinnati, the Interstate 70/71 split reconstruction in Columbus, Interstate 75/475 in Toledo, the Central Interchange in Akron, and the Innerbelt reconstruction in Cleveland.

The Major New construction program is the only true discretionary portion of the department’s budget. Even without a Major New Program, ODOT can continue to plow snow, repair pavement and guardrail and preserve its system through repaving projects and bridge replacements. By making Major New construction its lowest priority, the department emphasizes a system preservation mindset. However, by virtue of being the lowest priority, the Major New construction program bears the burden of absorbing the brunt of the impact if revenue decreases, or – as is the case now – if other costs un-

expectedly increase. ODOT asserts that this philosophy is the most fiscally prudent manner to maintain its vast transportation network. On the downside, cutbacks in the Major New Program mean that important congestion and safety projects will be deferred.



## OPTIONS FOR ODOT TO RESPOND TO CONSTRUCTION COST INFLATION

Faced with new fiscal realities, ODOT needed significant cost savings and/or project deferrals to offset rapid construction cost escalation. No permanent source of additional revenue is likely for ODOT before SFY 2009 because federal funding is set through 2009 and there is no likelihood that Congress will re-open the program before then. Similarly any state revenue increase for ODOT is implausible considering the recent fuel tax increase and the other financial pressures upon Ohio.

There were a few more fiscal options available for ODOT program outlays. The department first evaluated programs for potential cost savings. With inflation severely affecting pavement and bridge preservation programs, such cost savings were limited to Operating Funds (e.g., payroll, research, buildings, equipment). The Major Rehabilitation, Major Bridge and Major New Programs were examined primarily for project phasing, deferral or scope reduction, since these programs are also severely affected by inflation. Beyond program cost adjustments (up, in this case, for inflation), ODOT considered the program outcomes. Conceivably, the department could lower pavement and bridge condition goals, but endeavored to review program funding with the intention of maintaining existing condition levels.

As a policy decision, ODOT did not reduce Safety, Local Programs or Miscellaneous Statewide Programs. The Miscellaneous Programs include the Rail Overpass Program, Railroad Lights and Gates, Bike Paths, Amish Buggy Paths, paving in Metro Parks and repair for flood emergencies. Cutting any one of those small programs provides little in the way of savings and creates a difficult policy confrontation with program sponsors.

As far as significant financial opportunities, bond finance was the final option for consideration. As with most programs and finance options, bond finance has practical and legal constraints. While the most important constraint is ODOT's policy for debt limitation, an additional consideration was the potential advantage of borrowing at low interest rates in an environment of high cost inflation. That is, in an environment of rapidly escalating construction costs, it can be advantageous to borrow at current, relatively low interest rates. The analysis and conclusions are discussed in the bond finance section below.

### OPERATING COST ADJUSTMENT (PAY ROLL, STATE PLANNING AND RESEARCH, FACILITIES, EQUIPMENT, BUILDINGS, MAINTENANCE CONTRACTS)

While the 2006 – 2007 Business Plan held operating costs to prudent levels, the financial crisis precipitated by construction cost inflation provided an opportunity to further scrutinize outlays. Large staff cuts were not deemed possible because ODOT already cut staff in the 1990s from 7,800 to 6,031 and further large reductions in staff would cut into essential personnel needed for snow and ice routes and basic project oversight. Staff reduction below 6,031 people would not be realistic without a noticeable reduction in basic services.

A review of payroll outlays provided another source of cost savings. The biennial business plan showed payroll rising 5 percent annually after holding flat for nearly eight years during a period of staff reductions. Even though FY 2006 scheduled pay raises supported the 5 percent, the department's overall actual salaries in 2006 only grew about 2 percent due to the dynamics of employee turnover, changes with Fringe Benefits, etc. Therefore using the lower 2006 actual as a base netted the \$40 million savings, cumulatively, from revised estimates for state fiscal year 2007 – 2010.

The State Planning and Research (SPR) Program was another area to review in terms of changes from the Business Plan. The SPR Program is a mandated set aside of federal highway funds, and its mandated growth has far outstripped planning and research needs in recent years. ODOT has used the funds strategically to advance critical congestion and safety studies. With acute

*continues on page 10*



# PRO FORMA

The Pro Forma budget provides ODOT's revenue and outlay assumptions through state fiscal year 2015. While the Pro Forma is a greatly simplified view of ODOT's financial projections, there are hundreds of implicit assumptions and analyses that make up each line item, from staffing assumptions to pavement degradation rates. This adopted Pro Forma represents the most conservative financial assumptions for the department, and many dynamic factors could improve the forecast for the better. These factors include world energy markets and their impact on fuel prices, and thus motor fuel tax revenue, and construction inflation. Also, the Pro Forma assumes that ODOT's pavement and bridges will degrade at a constant rate over the forecast period, when in fact ODOT is constantly improving materials specifications and construction techniques, which will probably increase the life of pavement and bridges over time and thus reduce their cost to maintain. There are notes on key line items in the Pro Forma budget, which explain the underlying assumptions to the most dynamic financial factors.

## OHIO DEPARTMENT OF TRANSPORTATION 2005 - 2015 CONSERVATIVE HIGHWAY FUNDING AND PROGRAM FORECAST (IN MILLIONS)

UPDATED: SEPTEMBER 6, 2006

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>1 Revenue Source:</b>											
* State Motor Fuel Tax to ODOT (0% MF growth 2007-2015)	\$1,000	\$1,122	\$1,108	\$1,103	\$1,100	\$1,097	\$1,094	\$1,091	\$1,089	\$1,086	\$1,084
2 Truck Registration Fees, Truck Fuel Use Tax - 1% growth 2007 - 2015	\$123	\$110	\$119	\$121	\$122	\$124	\$125	\$126	\$127	\$129	\$130
4 Interest Income	\$9	\$10	\$18	\$18	\$18	\$19	\$19	\$19	\$19	\$19	\$19
5 Other Misc Income (Vanity Fee Income to ODPS 2006)	\$30	\$18	\$24	\$24	\$24	\$24	\$25	\$25	\$25	\$25	\$26
6 Total State Revenue	\$1,163	\$1,260	\$1,268	\$1,266	\$1,265	\$1,263	\$1,262	\$1,261	\$1,261	\$1,259	\$1,259
7 Turnpike Supplemental Funding	(\$23)										
8 State Bond Debt Service (assumes 4.5% interest)	(\$152)	(\$170)	(\$189)	(\$198)	(\$199)	(\$193)	(\$182)	(\$169)	(\$176)	(\$167)	(\$158)
9 State portion of GARVEE Debt Service (assumes 4.5% interest)	\$0	\$0	\$0	(\$9)	(\$19)	(\$26)	(\$31)	(\$33)	(\$35)	(\$37)	(\$39)
10 Total State revenue used to pay debt service	(\$152)	(\$170)	(\$189)	(\$207)	(\$217)	(\$219)	(\$212)	(\$202)	(\$210)	(\$204)	(\$197)
11 Total State Revenue Available to ODOT	\$987	\$1,091	\$1,079	\$1,059	\$1,047	\$1,044	\$1,050	\$1,058	\$1,050	\$1,055	\$1,062
* 12 SAFETEA-LU Federal Core Formula - @ 89% Ob Limit thru 2009, 1% growth after 2009	\$953	\$995	\$1,113	\$1,170	\$1,182	\$1,194	\$1,206	\$1,218	\$1,230	\$1,243	\$1,255
13 SAFETEA-LU Appalachian Development Program - 1% growth after 2009	\$17	\$17	\$18	\$18	\$18	\$18	\$19	\$19	\$19	\$19	\$19
14 SAFETEA-LU High Priority - (05 - 06 Actual, 2007-2009 @ 91% Ob Limit)	\$79	\$80	\$84	\$84	\$84	\$85	\$86	\$87	\$88	\$89	\$90
15 SAFETEA-LU Earmarks (05 - 06 Actual, 2007-2009 @ 91% Ob Limit)	\$8	\$17	\$21	\$21	\$17						
16 Formula ob limit used to cover Delta of actual ob limit to 91% for HP and EIM	\$6	\$4	\$0	\$0	\$0						
17 Annual Appropriations Earmarks (100% Ob Limit)	\$38	\$22									
18 Federal Emergency Funding	\$100	\$38	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10
19 Total Federal	\$1,200	\$1,174	\$1,247	\$1,304	\$1,312	\$1,308	\$1,321	\$1,334	\$1,347	\$1,361	\$1,374
20 Federal portion of GARVEE Debt Service (assumes 4.5% interest)	(\$78)	(\$76)	(\$97)	(\$111)	(\$136)	(\$150)	(\$148)	(\$143)	(\$150)	(\$159)	(\$168)
21 Total Federal Revenue Available for ODOT Programs	\$1,122	\$1,098	\$1,150	\$1,193	\$1,176	\$1,158	\$1,173	\$1,191	\$1,197	\$1,202	\$1,206
22 Total State and Federal Revenue	\$2,110	\$2,189	\$2,229	\$2,252	\$2,224	\$2,202	\$2,222	\$2,249	\$2,247	\$2,257	\$2,268
23 Payroll - 2007 thru 2015 - 5% growth	\$405	\$424	\$445	\$466	\$489	\$512	\$537	\$562	\$589	\$618	\$647
24 Routine Roadway Maintenance Contracts - 2% growth	\$59	\$60	\$61	\$63	\$64	\$65	\$66	\$68	\$69	\$71	\$72
25 Operating, Salt, Equipment - 2007 thru 2015 - 2% growth	\$151	\$154	\$147	\$146	\$149	\$153	\$159	\$162	\$165	\$168	\$172
26 Planning & Research 2.66% of Previous Yr Total Federal Core	\$30	\$27	\$27	\$30	\$30	\$31	\$32	\$32	\$32	\$33	\$33
27 Ohio Building Authority & Hilltop Debt Service	\$17	\$17	\$15	\$14	\$8	\$7	\$5	\$3	\$0	\$0	\$0
28 Lands & Building Maintenance	\$24	\$24	\$25	\$26	\$26	\$27	\$28	\$28	\$29	\$29	\$30
29 Lands & Building - Major New	\$7	\$7	\$11	\$11	\$11	\$11	\$8	\$8	\$8	\$8	\$8
30 Total Operating	\$692	\$715	\$730	\$755	\$777	\$806	\$834	\$863	\$893	\$926	\$962
31 General Allocation	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20	\$20
32 General System Two-Lane Pavements	\$93	\$93	\$108	\$113	\$179	\$186	\$147	\$149	\$150	\$152	\$154
33 Percent of System at acceptable level				98%		97%		97%		97%	
34 Major Two-Lane repair		\$5	\$15	\$15	\$15	\$15					
35 Priority System Freeway Routine Maintenance	\$179	\$179	\$217	\$228	\$192	\$199	\$143	\$145	\$146	\$148	\$149
36 Percent of System at acceptable level				96%		97.0%		97%		97%	
37 Priority System Freeway Pavement Rehab and Replacement	\$150	\$192	\$150	\$150	\$150	\$150	\$172	\$173	\$175	\$176	\$178
38 Urban Pavements (State Routes in Cities)	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$35
39 Percent of System at acceptable level				96%		95.0%		90%		90%	
40 Total Pavement Programs	\$477	\$524	\$545	\$561	\$591	\$605	\$517	\$522	\$527	\$531	\$536
41 Projected Shortfall for Pavement Program							(\$139)	(\$152)	(\$167)	(\$182)	(\$198)
42 District Bridge Repair, Replacement and Maintenance	\$141	\$141	\$170	\$179	\$187	\$197	\$145	\$147	\$148	\$150	\$151
43 Percent of Bridges at acceptable level of General Appraisal				98%		98%		97%		97%	

44	Major, High-Cost Bridge Replacement and Maintenance	\$80	\$117	\$60	\$60	\$61	\$62	\$62	\$62	\$63	\$64	\$64
45	Total Bridge Programs	\$221	\$258	\$230	\$239	\$248	\$258	\$207	\$209	\$211	\$214	\$215
46	Projected Shortfall for Bridge Program							(\$48)	(\$52)	(\$58)	(\$34)	(\$40)
47	Safety - 2% growth 2009 - 2015	\$64	\$64	\$64	\$64	\$65	\$67	\$68	\$69	\$71	\$72	\$74
48	Safety Enforcement & Education With \$2M Turnpike Patrol	\$2	\$2	\$6	\$6	\$6	\$6	\$2	\$2	\$2	\$2	\$2
49	High Priority & Earmarks for Safety J&P (\$26m at 91% Ob Limit 2005-2009)	\$4	\$5	\$5	\$5	\$5	\$5					
50	Total Safety Programs	\$70	\$71	\$75	\$75	\$76	\$73	\$70	\$71	\$73	\$74	\$76
51	Rail Overpass Program (2001 thru 2010)	\$12	\$12	\$12	\$12	\$12	\$12	\$0	\$0	\$0	\$0	\$0
52	Rail Lights and Gates (Level Funding)	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15	\$15
53	Sides, Slips, and Mine Subsidence - 2% growth 2011 - 2015	\$12	\$14	\$16	\$16	\$16	\$16	\$16	\$16	\$17	\$17	\$18
54	Rest Areas - 2% growth 2011 - 2015	\$8	\$8	\$10	\$10	\$10	\$10	\$8	\$9	\$9	\$9	\$9
55	Noise Wall Retro-Fit of Existing Sites	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$6
56	ODNR / Metro Park Paving Program	\$7	\$7	\$7	\$7	\$7	\$7	\$7	\$8	\$8	\$8	\$8
57	Miscellaneous Statewide Programs	\$5	\$12	\$12	\$12	\$12	\$12	\$13	\$13	\$13	\$14	\$14
58	Amish Buggy Lanes	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1
59	Emergency Program	\$121	\$86	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11
60	Appalachian Development Program	\$17	\$17	\$18	\$18	\$18	\$18	\$19	\$19	\$19	\$19	\$19
61	Annual Appropriations Earmarks	\$38	\$22									
62	Other Federal SAFETEA-LU Earmarks (\$351m @ 91% Ob Limit 2005-2009)	\$64	\$64	\$65	\$64	\$64	\$61	\$58	\$61	\$65	\$67	\$65
63	Total Statewide ODOT Programs	\$305	\$264	\$172	\$171	\$172	\$167	\$154	\$158	\$163	\$166	\$165
64	Local Programs Grown at same rate as Federal Core Formula											
65	Metropolitan Planning Organizations - Urban (15% of Federal Core Formula)	\$157	\$148	\$167	\$176	\$178	\$180	\$182	\$184	\$186	\$187	\$189
66	County Bridge and Surface Programs (5% of Federal Core Beg/2006)	\$51	\$50	\$56	\$58	\$59	\$60	\$60	\$61	\$62	\$62	\$63
67	Local Major Bridge Program	\$25	\$25	\$25	\$25	\$25	\$25	\$0	\$0	\$0	\$0	\$0
68	Enhancements, Bike Trails, etc (capped at \$11m)	\$14	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11
69	Small Cities Program (\$8 M cap through 2009, 7% of Federal Core thereafter)	\$8	\$8	\$8	\$8	\$8	\$8	\$8	\$9	\$9	\$9	\$9
70	City Bridge Program (\$8 M cap through 2009, 7% of Federal Core thereafter)	\$8	\$8	\$8	\$8	\$8	\$8	\$8	\$9	\$9	\$9	\$9
71	Safe Route to Schools	\$1	\$3	\$4	\$5	\$6	\$6	\$6	\$6	\$6	\$6	\$6
72	Total Local System Preservation Programs	\$264	\$253	\$279	\$292	\$295	\$268	\$270	\$273	\$275	\$278	\$281
73	Core Jobs and Progress Major New Program	\$509	\$740	\$923	\$879	\$791	\$473	\$472	\$474	\$477	\$478	\$475
74	SAFETEA-LU Federal Shortfall	(\$68)	(\$67)	(\$42)	(\$43)	(\$45)	(\$21)	(\$20)	(\$19)	(\$17)	(\$17)	(\$22)
75	Reduction due to State Revenue shortfall											
76	Reduction due to increased debt service											
77	Reduction to cover increased preservation less operating savings											
78	Subtotal Core Major New Program	\$441	\$673	\$798	\$710	\$554	\$204	\$311	\$297	\$289	\$279	\$266
79	Earmarks for Major New Program (\$75 @ 91% Ob Limit)	\$13	\$13	\$13	\$14	\$14	\$14	\$27	\$28	\$23	\$22	\$25
80	Cleveland Innerbelt HP & Earmarks (\$107 @ 91% Ob Limit)	\$12	\$19	\$23	\$23	\$19	\$19					
81	Total Major New Program	\$465	\$705	\$834	\$747	\$588	\$231	\$339	\$323	\$312	\$301	\$291
82	Total ODOT Highway Construction Programs	\$1,802	\$2,074	\$2,135	\$2,084	\$1,969	\$1,601	\$1,556	\$1,556	\$1,561	\$1,564	\$1,564
83	Estimated State Bonds Required	\$114	\$183	\$311	\$111	\$112	\$94	\$63	\$60	\$80	\$93	\$120
84	State Debt Service % of Total State Revenue	13.1%	13.5%	14.9%	15.6%	15.7%	15.3%	14.4%	13.4%	13.9%	13.3%	12.5%
85	Estimated Federal Bonds Required	\$0	\$143	\$274	\$436	\$370	\$71	\$65	\$69	\$86	\$100	\$97
86	Federal Debt Service % of Total Federal Revenue	6.5%	6.5%	7.8%	9.2%	11.8%	13.5%	13.5%	13.2%	13.7%	14.4%	15.1%
87	Total State & Federal Debt Service	(\$230)	(\$246)	(\$286)	(\$318)	(\$353)	(\$369)	(\$361)	(\$346)	(\$361)	(\$363)	(\$365)
88	Additional Bonds needed to balance program	\$0	(\$0)	(\$0)	\$0	\$0	\$0	(\$0)	\$0	\$0	(\$0)	\$0
89	State Revenue Available for State Projects	\$365	\$446	\$420	\$380	\$350	\$321	\$301	\$284	\$249	\$224	\$198
90	Federal Revenue Available for State Projects (omits local)	\$789	\$775	\$800	\$826	\$801	\$808	\$817	\$830	\$830	\$829	\$828
91	% State of Total State Projects	32%	37%	34%	32%	30%	28%	27%	26%	23%	21%	19%
92	State and Federal Revenue Available for Major New	\$81	\$105	\$198	\$160	\$65	\$26	\$171	\$154	\$105	\$68	\$34
93	Operating and Prior Year Carry Forward from Other Programs	\$80	\$66	\$52	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40
94	Remaining State Revenue in excess of Budget from 2004/2005	\$100	\$40									
95	Reserve for Emergency Projects until additional ER is available	\$70										
96	Major New Carry Forward From Previous Year Budget (less Bonds)	\$90	\$98									
97	Cleveland Innerbelt Carryforward	\$0	\$12	\$31	\$54	\$78	\$97					

\* Line 2: Assumes no growth in State MFT through the forecast period as opposed to the one percent rate of growth experienced during the past decade.  
 Line 12: Assumes a one percent growth in federal revenue 2010 - 2015 as opposed to the five percent rate of growth experienced from 1998 - 2009 in TEA-21 and SAFETEA-LU.  
 Lines 41 and 46: The deficit is based on planning level cost estimates, with current rate of degradation forecast to 2015.  
 \*\* The total affect to local programs from SAFETEA-LU federal shortfall was approximately \$146 million.

*continued from page 7*

fiscal constraints, ODOT decided to redirect balances in the SPR program and reduce annual expenditures, which resulted in \$43 million worth of savings from 2007 – 2010.

A final area for savings was outlays for buildings and equipment purchases. ODOT identified about \$6 million in annual savings for equipment, or about \$18 million 2008 – 2010.

Thus the total four years of operating savings amounted to about \$105 million between 2007 and 2010, which could be used to offset other program increases and/or help to finance additional bonding.

### MAJOR BRIDGE

The Major Bridge Program, at about \$60 million a year, was generally in balance with the exception of the Ironton-Russell bridge replacement project. At the \$80 million planning allocation, or the \$110 million construction bid, the Ironton-Russell Bridge significantly skewed the major bridge funding program. Rather than awarding the project, ODOT determined that redesign could save a significant amount of funding. The decision was made to not award the bid and instead fund a \$1 million minor rehabilitation project which was expected to extend the structure’s usable life at least five years. During this time, a new design could be readied for bidding, sometime beyond 2012. While the decision will save tens of millions of dollars, the Major Bridge Program will require rebalancing to accommodate the Ironton-Russell project after 2012.

### FREEWAY PAVEMENT MAJOR REHABILITATION PROGRAM

After adjusting project costs for inflation, the Major Rehabilitation Program was \$200 million out of balance, cumulatively, between 2007 and 2012. Two projects were re-scoped as minor rehabilitation and one project was moved beyond 2012, which brought the program back to its \$150 million annual budget mark.

### DISTRICT PRESERVATION

Bridges and pavements were only budgeted for modest 2 percent rates of growth in ODOT’s original 10-year fiscal plan, which clearly was inadequate given inflation. However, it was not fiscally prudent to automatically assume that bridge and pavement budgets had to rise commensurate with the construction cost inflation rate. Inherent in those budgets are costs for engineering, planning studies, right of way and other expenditures which are not rising as rapidly as material costs. ODOT “scrubbed” its data more closely in order to not overstate the magnitude of the increase needed.

Thus the district allocation program was examined in great detail. It was determined that about 85 percent of the district allocation spending went to some type of capital or maintenance item. Therefore, the inflation rates applied to District Preservation were divided into two categories:

- The 85 percent of the District Preservation program that went to capital items was grown by a rate of inflation for the period 2007-2010; and
- The 15 percent of the District Preservation program that did not go to contracts was grown by 3 percent annually. This 15 percent included preliminary engineering, right of way, task orders, bridge inspection and other items not as significantly affected by materials costs.

It was then observed that a simple rate-of-inflation escalation of the District Preservation Program led to some anomalies for three reasons. First, district allocations were scheduled for major adjustment in the 2009-2010 biennium; second, some districts were well above their condition goals and would continue to meet their goal even without an additional increase for inflation. Third, even with an increase for inflation some districts were going to fall short of their bridge or pavement goals. Therefore, the rate of growth for each District’s 85 percent of their allocation was categorized in three ways:

- Districts that were forecast to just meet their goal were grown by approximately 30 percent cumulatively by 2010 to account for inflation;
- Districts there were forecast to be well above their bridge and pavement goals were grown by approximately 20 percent between 2007 and 2010;
- Districts that were forecast to not meet their goals were



grown by 30 percent plus an additional increment to treat the bridges and pavements necessary to meet the goal.

In total, this increase in District Preservation funding required about \$455 million in additional spending between 2007 and 2010. The pavement and bridge preservation programs are fully funded through 2010. As seen in the Budget Pro Forma (on Pages 8-9), there are system preservation shortfalls for 2011-2015. The department will continue to monitor pavement and bridge conditions and the level of effort needed to sustain the goals. If the conditions track as projected in the Pro Forma, the additional funds will be needed to maintain the percent of acceptable pavement and bridge conditions.

### LOCAL PROGRAMS

Local programs experienced the same construction inflation as ODOT. Since ODOT passes through more than \$275 million annually in federal funds to local governments for transportation projects, the department has a keen interest in assuring that local governments are aware of the new price inflation and are adequately planning for it. ODOT took the following steps to assist local governments in accurately estimating project costs:

- The department held a statewide briefing for local governments and their consultants on April 19, 2006 in Columbus to explain our inflation forecast;
- ODOT provided Web links to updated unit price costs which can be used by local governments to update their estimates; and
- ODOT wrote to every sponsor of a local-federal project and invited them to meet with the district staff for specific guidance on how to update the estimate for their project.

### MAJOR NEW PROGRAM

The Major New Program has, since its origins in 1996, funded all significant new capacity projects in Ohio. In 2003, Gov. Bob Taft announced the Jobs and Progress Plan, which planned to use new state and federal revenue to fund a 10 year, \$5 billion Major New Program.

With construction prices about 30 percent higher than anticipated when the Jobs and Progress Plan was pro-

posed, the cost of Major New projects increased about \$700 million from 2007 – 2010. Moreover, inflation necessitated an increase in bridge and pavement preservation program funding of about \$455 million over the same period. With no offsetting revenue increases or cost decreases, ODOT budget policy would dictate that the Major New Program absorb all the impact of recent construction inflation.

While cutting the Major New construction budget would be in keeping with ODOT budget policy, such a cutback would have significant societal costs. The Major New Program funds projects which address freeway locations with high congestion and accident rates. Congestion delays are a significant cost burden to commuter and freight traffic, and crashes create a significant societal burden in terms of property damage cost, health care and fatalities. Thus, ODOT undertook concurrent analyses of all programs to minimize inflationary impact, increase revenue through bonding if appropriate, and only then to cut back on Major New spending. In summary for the 2007 – 2010 period, ODOT:

- Identified \$105 million in Operating Program savings;
- Determined that Bridge and Pavement Preservation Programs required an additional \$455 million in spending;
- Determined that the Major New projects scheduled for 2007 – 2010 required an additional \$700 million; and
- Reviewed options for increased bond financing to close the gap caused by the construction inflation outlined above.

To mitigate the impact of construction cost inflation on the Major New Program, ODOT took the following steps:

- Cancelled the widening of Interstate 70 in Clark County, saving \$54 million;
- Deferred, at least until 2012, the widening of Interstate 75 in Toledo, which deferred \$120 million;
- Cancelled funding for a transit bus/train station in Columbus, after the area transit authority cancelled plans to build a light rail line; this saved \$13.1 million;
- Cancelled the upgrade for the State Route 237 interchange serving Cleveland-Hopkins Airport, due partially to ongoing changes in the Airport's master plan. This saved \$12 million;
- Changed the schedule and sequence of the Interstate 270/U.S. Route 23 interchange upgrade in Franklin

County, moving projects which were scheduled for 2009 and 2011, to 2011 and 2013, which deferred in total \$121 million;

- Delayed funding for Interstate 275/State Route 32 interchange in Clermont County from 2010 to 2011, deferring \$49 million; and
- Delayed funding for Interstate 75 in Hamilton County from 2010 to 2012, deferring \$80 million.

Despite these cutbacks, the Jobs and Progress Plan will still provide an average \$410 million Major New Construction program from 2007 – 2015. Most of the major projects still remain in the program and the program still represents an unprecedented improvement to the transportation network.

The biggest effect of these actions was to over-program the Major New Program in 2010 and 2011 and add no new projects in 2012. The Transportation Review Advisory Council’s standard business practice is to over-program by 20 percent, because experience shows that

project development is overly optimistic and construction planning estimates are overly pessimistic. With this revised Major New project schedule, the program is over-committed by \$1.0 billion cumulative through 2012, or 38 percent over budget.

Significant action will have to occur in 2010 and beyond to reconcile this deficit, and options for those actions are discussed in the summary section below.

It was deemed unwise to adjust Major New project schedules any more, because many of the large urban interstate reconstruction projects are still under development. For example, I-75 in Hamilton County has not determined a preferred alternative; no structure type has yet been determined for the Cleveland Innerbelt; and local agencies in Columbus have not yet agreed on reconstruction options for the 70/71 split. In summary, complex urban projects often face issues which delay some phases, which in turn reduces the fiscal impact of over-programming Major New funds.



## CLOSING THE GAP: BOND FINANCE OPTIONS

While the department identified total operating cost savings of \$105 million, the district preservation program required an additional \$455 million over the 2007 – 2010 period, and Major New project costs increased \$700 million, still leaving a significant shortfall. If other finance options were not available, this entire burden would fall on the Major New construction program, which led ODOT to analyze various bond finance options.

The issuance of bonds is a routine financing tool for transportation agencies. ODOT has traditionally used a portion of its state and federal cash flow to service debt finance instruments. By policy, ODOT managed its debt at generally conservative levels: debt service is no more than 20 percent of state revenue and no more than 10 percent of federal revenue. This policy is about average nationally. A recent survey showed that state DOT's have outstanding debt ranging from a low of \$3.7 million to a high of \$10.6 billion; ODOT's current outstanding debt is \$1.4 billion. As a percent of total revenue, state DOT debt ranges from a low of 2 percent to a high of 25 percent.

The 2006 – 2007 Business Plan originally showed debt at 11.8 to 14 percent of state revenue, and 7 to 9.3 percent of federal revenue, which provided some limited flexibility.

While the flexibility to issue more debt is somewhat constrained by ODOT's debt ceiling policy, there is also the real potential of not being able to finance projects in future years due to inflation. This paradox created an important policy consideration: if construction inflation exceeded the interest rate of bond debt, the better policy choice could be an issuance of more bonds in the near term, because inflation would make deferred projects even more expensive in the future. With this background ODOT analyzed the option of issuing additional highway bonds to determine when construction inflation exceeded borrowing costs and what level of borrowing would be financially prudent.

A financial model was prepared to compare various combinations of inflation versus interest rates. Based on the two variables and adjusting both to present values, the model identified how far into the future projects would need to be deferred before construction inflation exceeds the borrowing costs of bonds issued in 2007.

Using the assumption that construction inflation would be 5 percent in 2007 and 4 percent for every year following, and a borrowing interest rate of 3.9 percent, total present value interest costs from bonds issued in 2007 would be less than the present value of construction inflation by 2012.

In other words, in an environment of high inflation and low interest rates, the cost of inflation exceeds the cost of borrowing. In a high inflationary environment, rising construction costs severely erode future spending power, thus making it impossible to finance some projects. If affordable, the strategic use of bonds – issued at favorable interest rates – could allow ODOT to maintain a greater portion of its construction program. ODOT notes that this is a one-to-one comparison of bond finance costs versus inflation costs; what the analysis does not take into account is the public benefit of safety and capacity projects, such as the cost of motorist delay and the societal cost of traffic crashes and fatalities. Were these issues quantified, it would be even more beneficial to issue bonds. The next question then is to determine the amount of bond financing which is affordable.

To determine the level of bonding that would be financially prudent, ODOT analyzed four alternatives of state and federal bond finance, at differing amounts and debt service ratios. The most beneficial was the issuance of \$600 million in GARVEE bonds, which could remain within a 15 percent annual debt service to federal revenue ratio. The funding raises the Major New budget to an average of \$750 million for the three years 2008 through 2010 and even when reduced by the added debt service, still leaves more than \$400 million a year for the following 10 years.

Notably, this strategy departs from ODOT's established policy of limiting bond debt service to 10 percent of federal revenue. The department feels this strategy is

justified for the following reasons. First, construction inflation has been extraordinary and requires significant policy responses if Ohio expects to build projects and realize the safety and congestion mitigation benefits of its program. Also, a 15 percent debt service ceiling is not overly aggressive compared to peer states, and the debt

service on \$600 million in bonds was deemed affordable. Finally, the strategy calls for issuing the GARVEE bonds in 2007, 2008 and 2009; if financial conditions change, one or more of these debt issuances can be cancelled, if it is in the public interest to do so.



## SUMMARY

Construction inflation and flat revenue growth greatly skewed ODOT's financial forecast from the original 2006 – 2007 Business Plan. Tied to crude oil prices, these inflationary impacts do not appear to be temporary, but rather a new and higher plateau which has eroded the department's buying power. The effects of this inflation are serious, including:

- Inflating bridge and pavement preservation costs by \$455 million from 2007 – 2010;
- Inflating the cost of projects in the Major Freeway Pavement Rehabilitation Program by about \$200 million over the same period;
- Inflating the cost of the Ironton-Russell Bridge replacement project to more than \$100 million, necessitating its redesign and deferral past 2012; and
- Inflating the Major New Construction Program by \$700 million from 2007 – 2012.

ODOT can manage the financial changes in 2007, the last year of the biennium. Cost savings, additional borrowing and some project deferrals are adequate to balance the 2007 budget.

However, the trends of inflation, stagnant state revenue and uncertain future federal revenue create unprecedented financial uncertainty for the period of SFYs 2008 through 2015. This uncertainty will require ODOT to monitor key variables quarterly and to make project and program adjustments for the next several years until inflation and future federal revenue become more certain. The critical variables to be monitored will include:

- The actual rates of inflation experienced by bid lettings compared to the projected inflation rate which ODOT assumed;
- Actual rate of pavement and bridge degradation as opposed to the forecasted degradation rates. ODOT is constantly upgrading its pavement maintenance practices, its construction specifications and its inspection practices to increase pavement performance and longevity. Success may require less-than-projected pavement expenditures in future years;
- State revenue may rebound if fuel prices stabilize. Even a modest increase of 1 percent would produce approximately \$12 million more annually;
- Federal revenue assumptions are based on forecasts, which are more volatile than are state motor fuel tax predictions. The current budget forecast includes a

very modest 1 percent annual growth assumption after 2010, when a new federal transportation bill is enacted. Past increases have been about 5 percent annually; and

- The actual versus forecasted costs of major projects. ODOT is constantly monitoring and adjusting projects scopes to keep them within budget.

These variables prevent ODOT from having the stable and predictable fiscal plan that the Jobs and Progress Plan anticipated when it was first proposed in 2003. Although ODOT's program is large and ambitious it will have more volatility than anticipated when it was developed.

In 2011 and beyond, ODOT has used planning level projections to forecast its budget for bridge and pavement preservation programs, and thus might be understating budgetary needs in these programs. Also in 2011 and beyond, the Major New Program is significantly over-programmed, though that is not extraordinary, and the uncertainty of project development schedules may work to the advantage of program balances. Still, the new administration must be aware of the potential need to adjust the department's budget by \$500 million or more, in 2011 and after.

However, managing budgetary scarcity is commonplace for public agencies. In 2000 to 2003, ODOT forecast the complete exhaustion of the Major New Program and in fact did not accept new project applications for two years. This period of scarcity prompted a successful state and federal legislative agenda which will fund \$410 to \$500 million in Major New projects through 2015.

With inflation, the succeeding administration will face similar budget challenges after 2009 which will require policy responses. Most notably, the federal highway trust fund is insolvent after 2010 and congressional commissions are already working on the next genera-

tion of transportation funding and reauthorization of the federal-aid program. With guidance and input from the next administration, federal transportation aid could change dramatically in order to meet budgetary chal-

lenges. Other innovative financing techniques could be authorized. And actions could be taken by the General Assembly to respond to inflationary impacts.

