



DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

David Silvester, District Engineer

Tracker

MEASURES OF DEPARTMENTAL PERFORMANCE



MoDOT customers expect transportation solutions delivered on time and within budget. We manage our projects to get them completed quickly and at the best possible value. We work with our transportation partners to leverage innovation in improving our products and how we work. We pledge to honor our commitments and deliver the best, most cost-effective solutions.

RESULT DRIVER:
David Silvester,
District Engineer

MEASUREMENT
DRIVER:
Renate Wilkinson,
Planning and Programming
Engineer

PURPOSE OF
THE MEASURE:
This measure determines
how close total project
completion costs are to the
programmed costs. The
programmed cost is consid-
ered the project budget.

MEASUREMENT
AND DATA
COLLECTION:
The completed project costs
are reported during the fis-
cal year in which the project
is completed. Positive
numbers indicate the final
(completed) cost was higher
than the programmed cost.
Road and bridge project
costs include design, right-
of-way purchases, utilities,
construction, inspection
and other miscellaneous
costs. The programmed
cost is based on the amount
included in the most re-
cently approved Statewide
Transportation Improvement
Program. Completed costs
include actual expendi-
tures. Multimodal and Local
Public Agency project costs
typically reflect state and/or
federal funds, but not local
funding contributed toward
projects.

DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

Percent of programmed project cost as compared to final project cost-4a

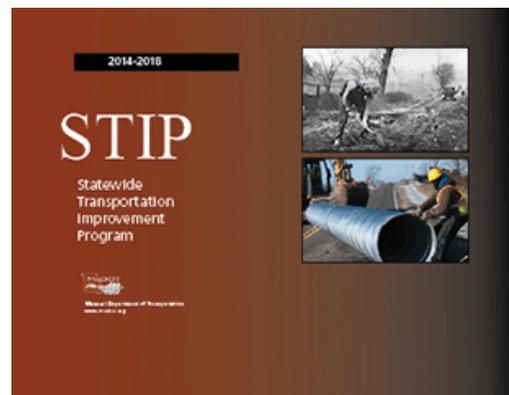
The focus on accurate program cost estimates has become increasingly important due to static transportation funding and increasing costs. The good news for MoDOT is that it received great project bids in recent years. As of September 30, 2013, 136 projects had been completed in FY2014 at a cost of \$373 million. This represents a deviation of -15.3 percent or \$67 million less than the programmed cost of \$440 million. Of the 136 projects completed, 76 percent were completed within or below budget. In comparison, 58 percent of projects were completed within or below budget as of the same date a year ago. The largest component of project savings comes from award savings, at 83 percent. Engineering and miscellaneous (right of way, utilities and other costs) savings represent 12 percent and 11 percent respectively. Savings during the construction phase are -6 percent.

One Multimodal project was completed for a cost of \$428,000, -14.5 percent or \$72,000 less than the programmed cost of \$500,000.

Also, 27 Local Public Agency projects were completed for a cost of \$27.8 million, -1.4 percent or \$379,000 less than the programmed cost of \$28.2 million.

For FY2013, the revised value is 601 completed road and bridge projects at a cost of \$1.137 billion. This represents a deviation of -12.8 percent or \$166 million less than the estimated cost of \$1.303 billion. These numbers have been revised slightly since July based on projects that had pending adjustments.

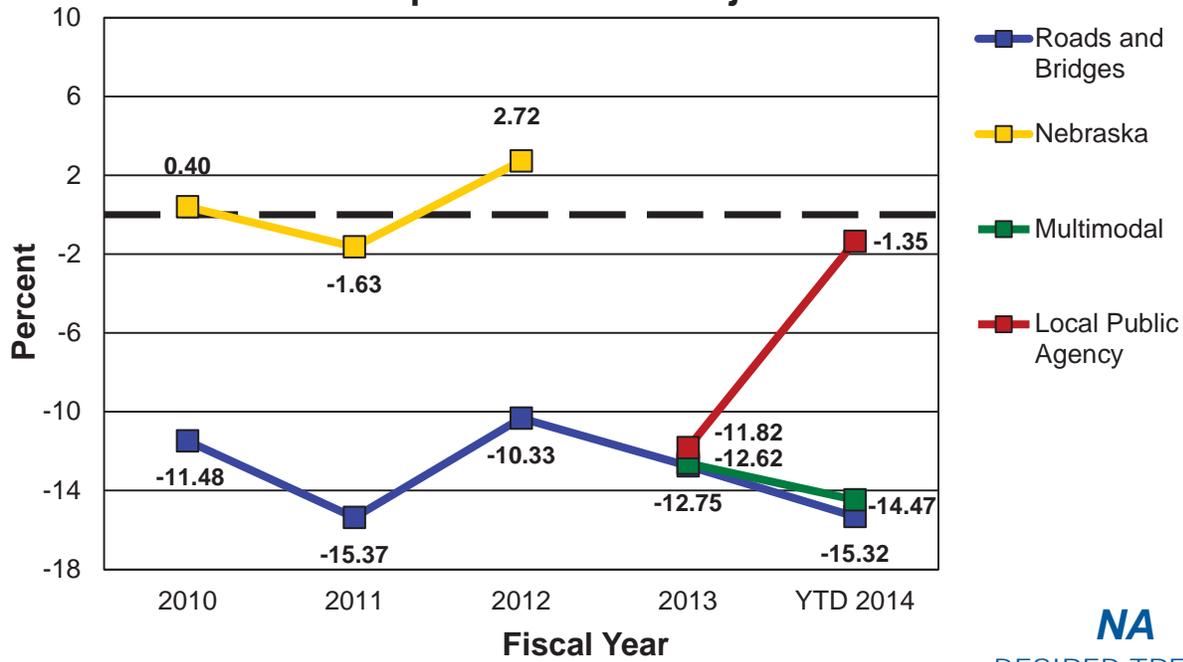
For road and bridge projects completed in the five-year period from 2009-2013, final costs of \$5.915 billion were within -9.4 percent of programmed costs, or \$613 million less than the programmed cost of \$6.528 billion.



MoDOT uses this historical data as a guide for programming future projects. In FY2014, MoDOT added 10 percent of available funding for highway and bridge construction awards or \$68.5 million worth of projects in anticipation of award savings. However, award savings for FY2014 through October totaled only \$4.5 million, \$14 million less than was anticipated.

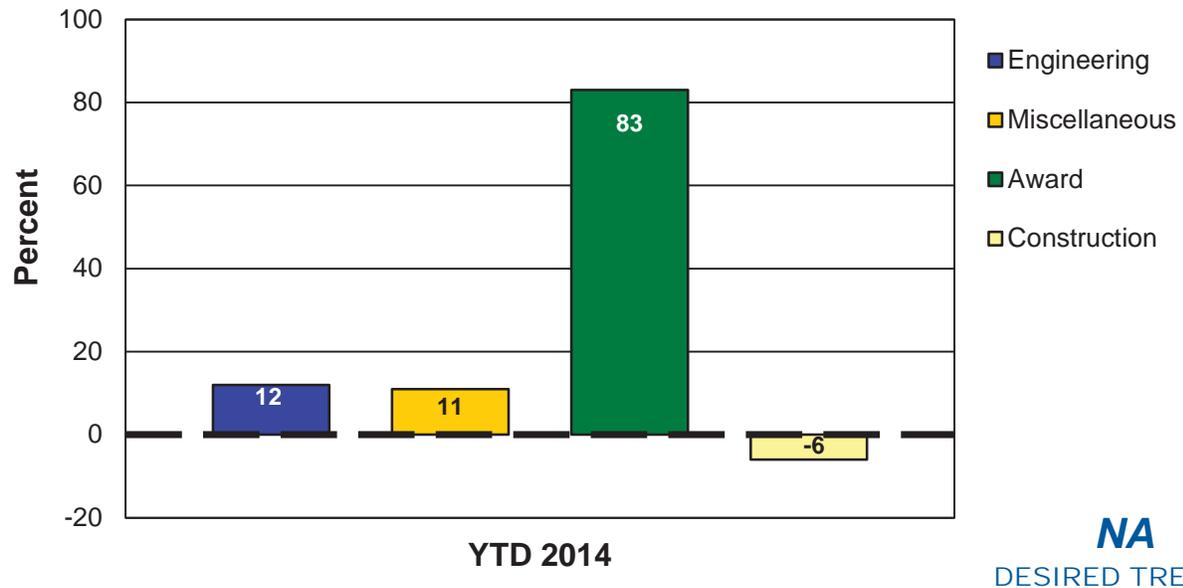
DELIVER TRANSPORTATION SOLUTIONS OF GREAT VALUE

Percent of Programmed Project Cost as Compared to Final Project Cost



Positive numbers indicate the final (completed) cost was higher than the programmed cost. Comparative data is from Nebraska Department of Roads, one-year schedule of highway improvement projects.

Composition of Savings



Miscellaneous includes right of way, utilities, and other

RESULT DRIVER:
David Silvester,
Central District Engineer

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MEASUREMENT DRIVER:

Jay Bestgen, Assistant
State Construction and
Materials Engineer

PURPOSE OF THE MEASURE:

This measure tracks the percentage of projects completed by the commitment date established in the contract. This includes MoDOT, local public agency and modal projects – rail, aviation, waterway and transit.

MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, the project manager collaborates with the project team to establish the project completion date, and the resident engineers use the SiteManager system to track and document the work. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance.

Percent of projects completed on time-4b

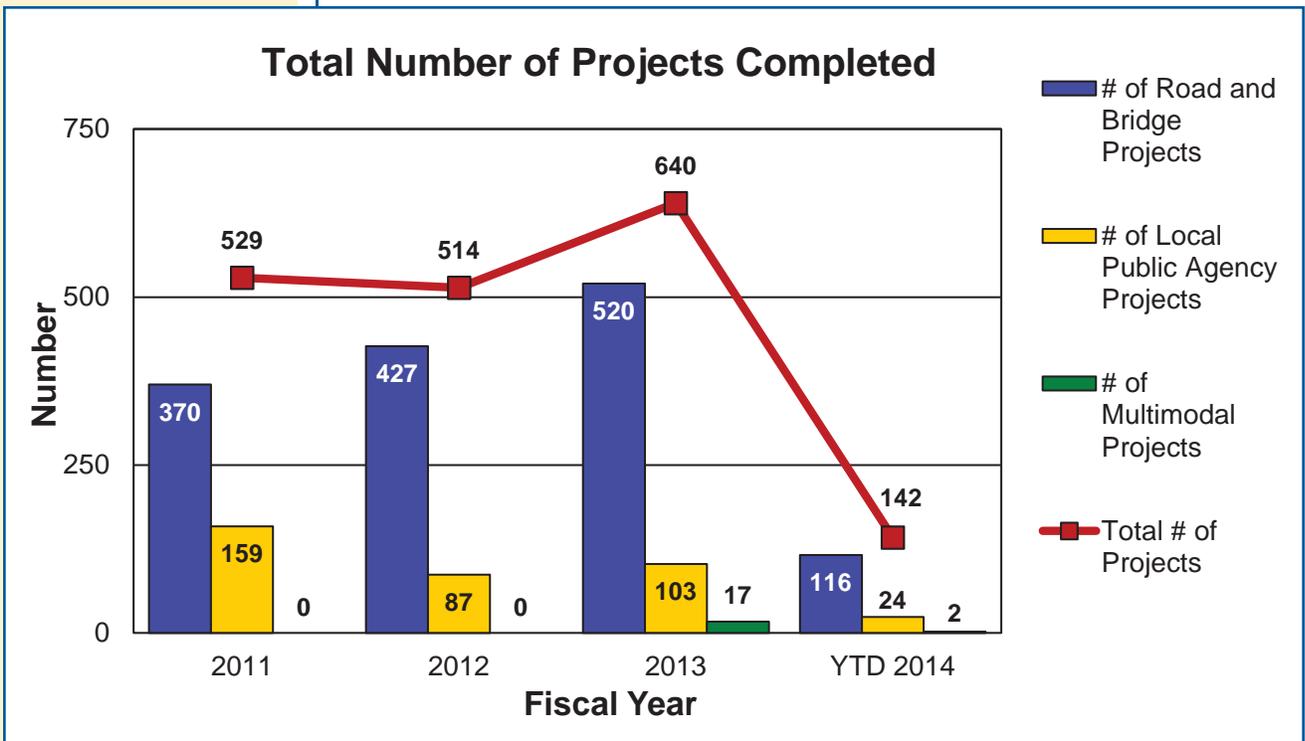
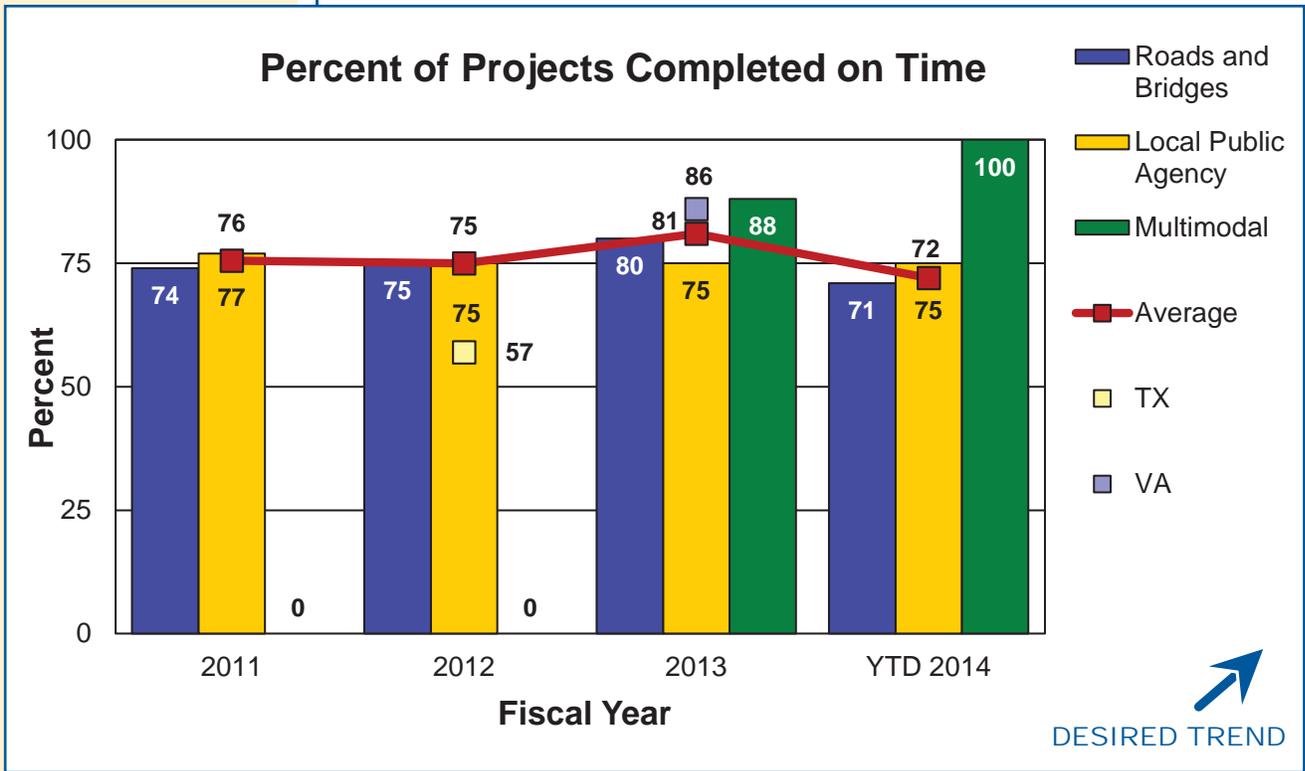
It is important to deliver improvements on time because MoDOT's customers expect and deserve to use transportation improvements quickly and with minimal impact to their lives. Delivering projects by the contract completion date is the target for all projects. However, sometimes it is necessary to extend the completion date due to increased work or unusual weather. There are also times when a contractor misses the project completion date. In the first quarter of fiscal year 2014, 72 percent of the projects were completed on or ahead of schedule.

MoDOT works to meet the original completion date by:

- Preparing accurate plans and quantities,
- Setting aggressive, but reasonable completion dates,
- Setting liquidated damages that reinforce completion date without undue bid risks,
- Discussing potential completion times with industry before setting, and
- Negotiating with contractor to maintain schedule.

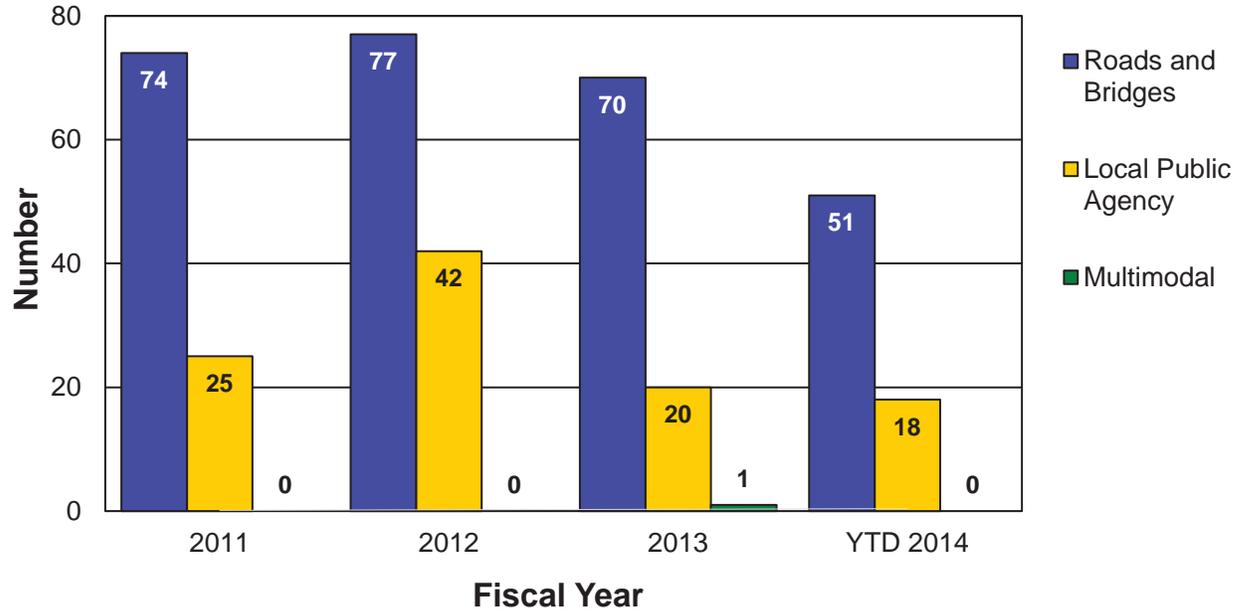


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Average Number of Days Completed Before Original Date



RESULT DRIVER:
David Silvester,
Central District Engineer

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MEASUREMENT DRIVER:

Jeremy Kampeter,
Construction Management
Systems Administrator

PURPOSE OF THE MEASURE:

This measure tracks the percentage difference of total construction payouts to the original contract award amounts. This indicates how many changes are made on projects after they are awarded to the contractor. This measure evaluates road, bridge, local public agency and multimodal projects – rail, aviation, waterway and transit.

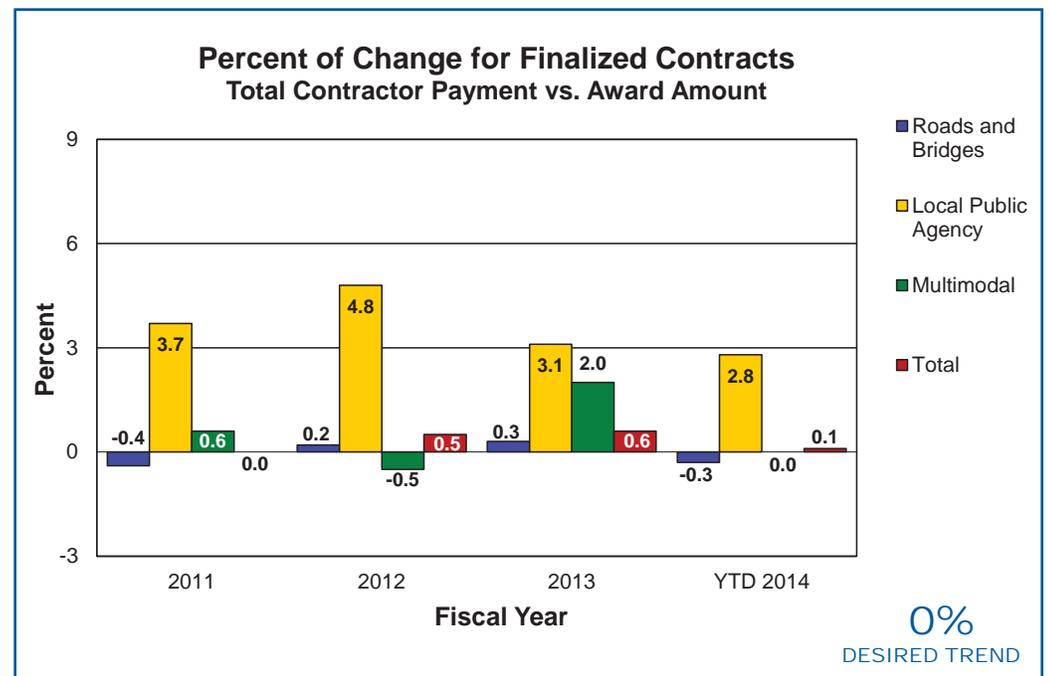
MEASUREMENT AND DATA COLLECTION:

For road and bridge projects, contractor payments are generated through MoDOT's SiteManager database and processed in the financial management system for payment. Change orders document the underrun/overrun of the original contract cost. Local public agencies and multimodal agencies use staff or consultant resources to set contract completion dates and track performance.

Percent of change for finalized contracts-4c

By limiting overruns on contracts, MoDOT can deliver more projects which leads to an overall improvement of the entire highway system. Placing a strong emphasis on constructing projects within budget coupled with the use of practical design and value engineering has contributed to limiting overruns on contracts. MoDOT's performance in the first quarter of fiscal year 2014 was 0.1 percent (\$323 million worth of projects completed \$209,000 over the award amount). Many factors can affect the ability to complete a project within 2 percent of the award amount.

With static transportation funding and increasing costs, MoDOT's focus on keeping final project costs within award amounts is more important than ever.



RESULT DRIVER:
David Silvester,
Central District Engineer

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MEASUREMENT DRIVER:
Angela Fuerst,
Transportation Project Manager

PURPOSE OF THE MEASURE:
This measure tracks the use of innovative contracting methods used on MoDOT projects including:

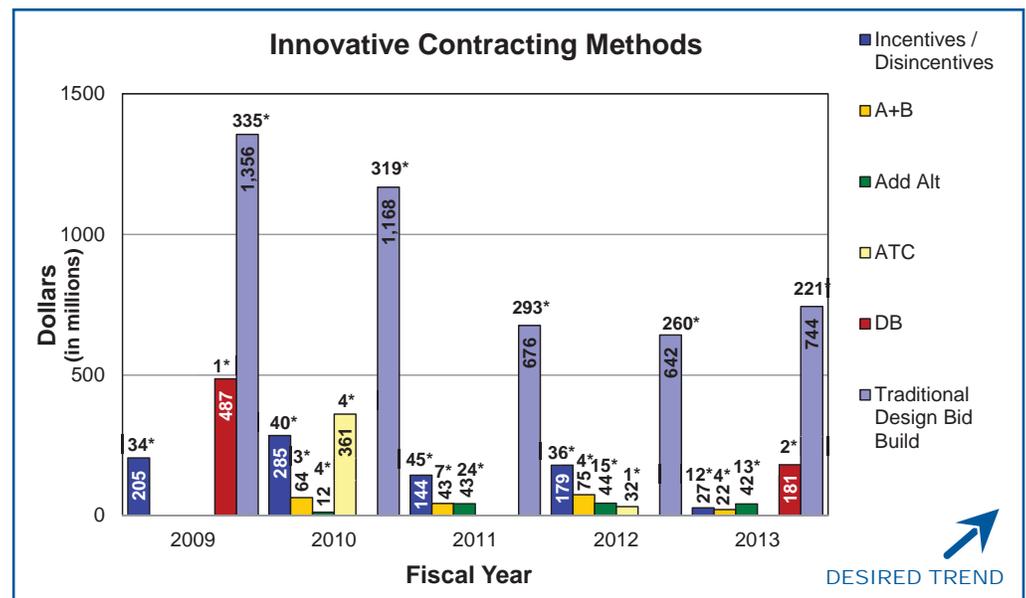
- Incentive/Disincentive Contracts,
- A + B Contracts,
- Add Alternate Contracts,
- Alternate Technical Concepts, and
- Design-Build Contracts

MEASUREMENT AND DATA COLLECTION:
MoDOT projects utilizing innovative contracting methods are reported during the fiscal year they are awarded. Contract award values are collected through MoDOT's SiteManager database, bid opening summaries and project records.

Innovative contracting methods-4d

With static transportation funding and increasing costs, MoDOT looks to implement non-traditional methods and practices in contract administration to improve efficiency, increase flexibility and maximize value for its customers. By allowing the use of innovative contracting tools, MoDOT is best able to meet each project's unique challenges and to provide the best-value solution to the needs being addressed. MoDOT uses innovative contracting to ensure that the public receives full value for every tax dollar invested in Missouri's transportation system.

Innovative contracting methods provide the ability to accelerate project delivery, reduce cost, improve quality and reduce impacts to the traveling public. In fiscal year 2013, MoDOT delivered 31 out of 252 projects using innovative contracting methods. The 31 projects totaled \$271.904 million out of the \$743.952 million program.



* Reflects total number of projects for each innovative contract method

RESULT DRIVER:
Dave Silvester,
District Engineer

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MEASUREMENT
DRIVER:
Llans Taylor,
Innovations Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the
use of value engineering
during design and construc-
tion on traditional MoDOT
projects including:
■ Value analysis during the
design phase, and
■ Construction value en-
gineering proposals during
the construction phase.

MEASUREMENT
AND DATA
COLLECTION:
Information on value
analysis during design is
gathered from MoDOT's
STIP Information Manage-
ment System application.
Construction value engi-
neering change proposal
information is gathered from
MoDOT's value engineering
change proposal database.

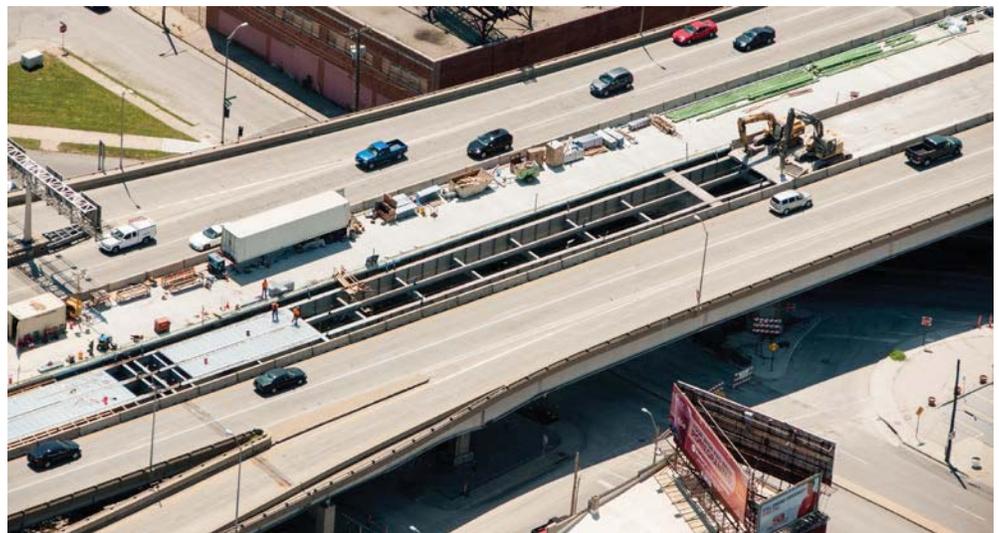
Value Engineering-4e

The goal of value engineering is to build the right project at the right time, meeting the project need with appropriate project scope. MoDOT uses the VE program to ensure the public receives full value for every tax dollar invested in Missouri's transportation system.

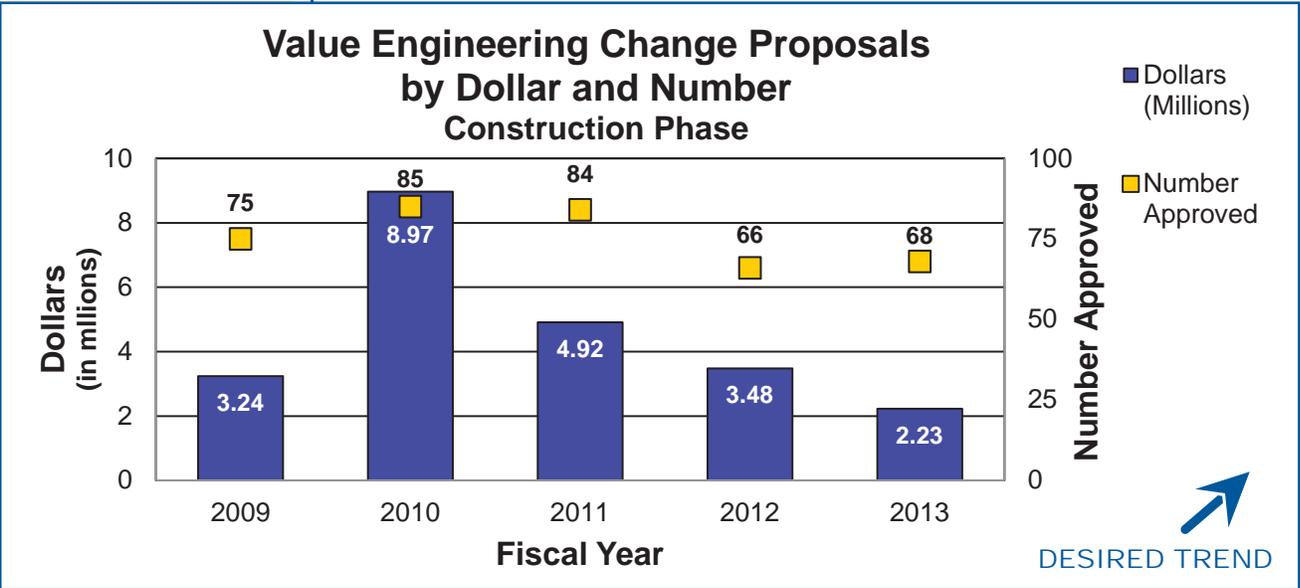
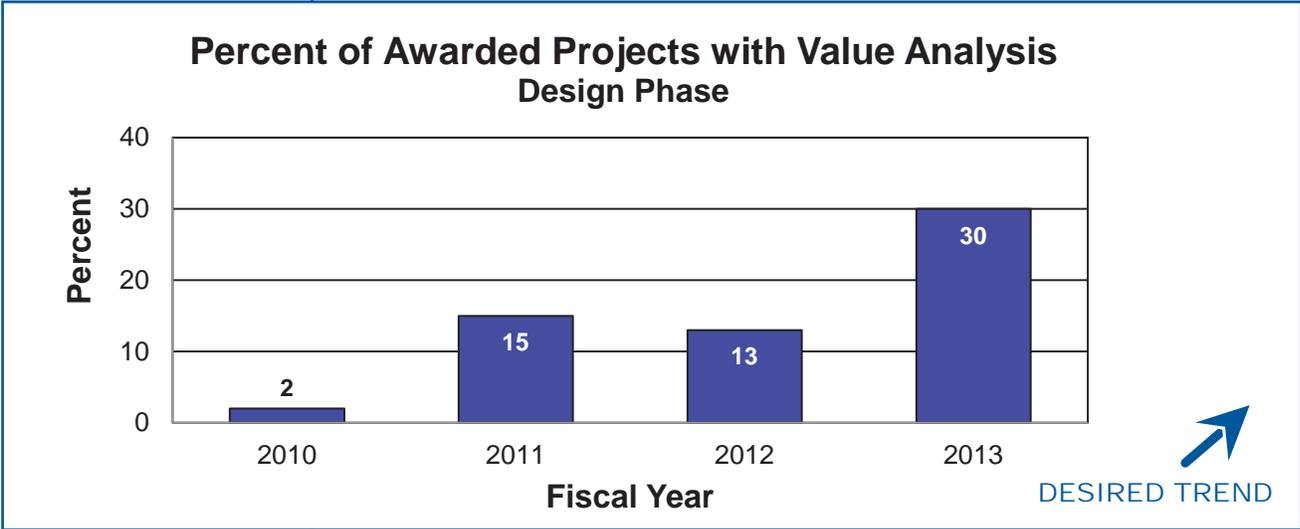
A value analysis is completed on many projects, which encompasses any specific, targeted process to improve the project value, including the formal VE study program. Tracking progress toward the goal of evaluating all projects for value allows MoDOT to accurately gage its performance. For fiscal year 2013, 30 percent of projects underwent some form of value analysis during the design phase.

During the construction phase, the Value Engineering Change Proposal process encourages contractors to submit proposals to deliver improved projects of the best attainable value. VECPs are submitted by the contractor after the contract has been awarded. If the proposal is accepted, the contractor receives a portion of the savings, up to a maximum of 50 percent. In fiscal year 2013, 68 VE proposals were approved resulting in MoDOT savings of \$2,226,000.

A successful VECP program will incorporate approved VECPs into future design plans, so MoDOT can realize 100 percent of the affiliated savings for future projects. VE changes implemented as MoDOT best practices are incorporated into MoDOT's Engineering Policy Guide.



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Value Engineering Changes Implemented as Best Practice

UNDER DEVELOPMENT

RESULT DRIVER:
David Silvester,
District Engineer

MEASUREMENT
DRIVER:
Natalie Roark,
Bidding and Contract
Services Engineer

PURPOSE OF
THE MEASURE:
This measure tracks the
costs to construct a variety
of common highway and
bridge construction proj-
ects including the costs for
equipment, labor and fringe
benefits and materials to
construct a project.

MEASUREMENT
AND DATA
COLLECTION:
Data is collected from
MoDOT bid opening prices.
Construction costs for 1992
are used for comparison
because that was the year
Missouri's fuel tax increased
to the current rate of 17
cents per gallon. Costs for
chip seal and minor road
one-inch asphalt resurfacing
include the pavement,
traffic control and temporary
pavement marking. Costs
for major highway and
interstate asphalt resurfacing
include the pavement,
traffic control, permanent
pavement marking, rumble
strips, pavement repair,
guardrail and signing. New
two-lane and four-lane con-
struction costs include grad-
ing, drainage, pavement,
bridge and all incidental
costs. The average cost
per square-foot of bridge is
tabulated and applied to the
area of the average bridge
on the state system to sim-
plify comparison.

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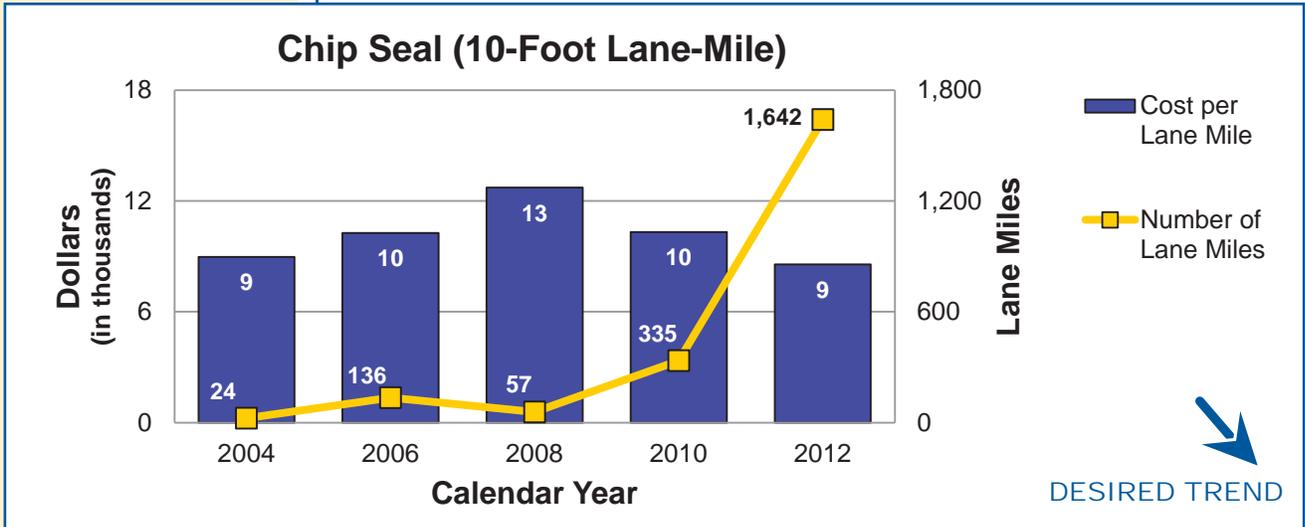
Average highway lane-mile and bridge construction costs-4f

A great many factors affect the cost of road and bridge projects, some that can be managed by MoDOT and others that are affected by the economy. For example, minor road asphalt resurfacing costs have increased in recent years due to a combination of increased fuel, oil and material costs. Overall, asphalt resurfacing costs on major highways and interstates have remained relatively stable largely due to increased use of recycled material and in-creased competition.

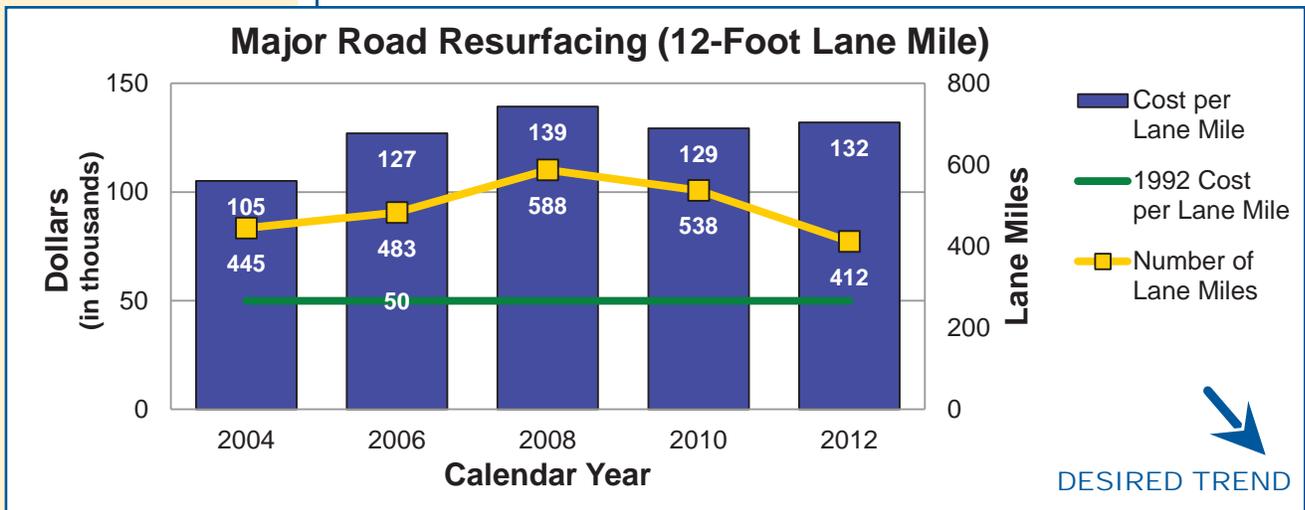
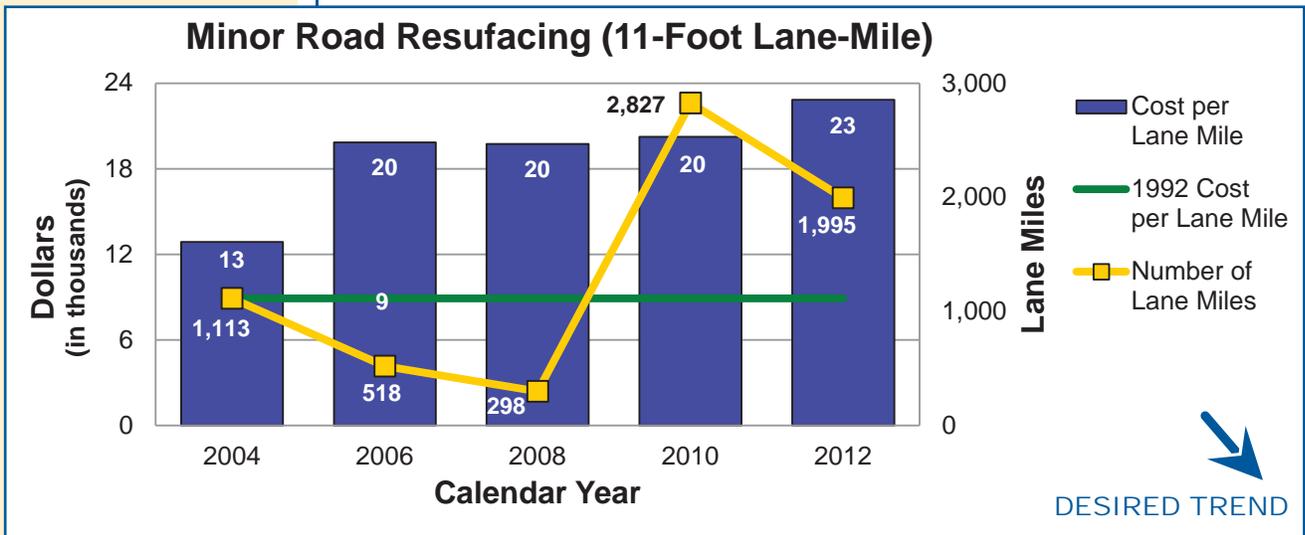
The good news is MoDOT is benefiting from more competition for its contracted projects. Less work in cities, counties and surrounding states and a shift in contractors to highway construction resulted in increased competi-tion. Although equipment, material and labor costs increased due to the economic downturn, MoDOT experienced only a slight increase in overall construction costs. With MoDOT's construction program having dropped by about half, contractors are aggressively bidding on all types of projects with even more competition being seen on the limited number of complex two- and four-lane projects. MoDOT also allows flexibility and encourages innovation for the contractor and strategically schedules its bid openings to spread out the amount of work and financial obligation for the bidders.



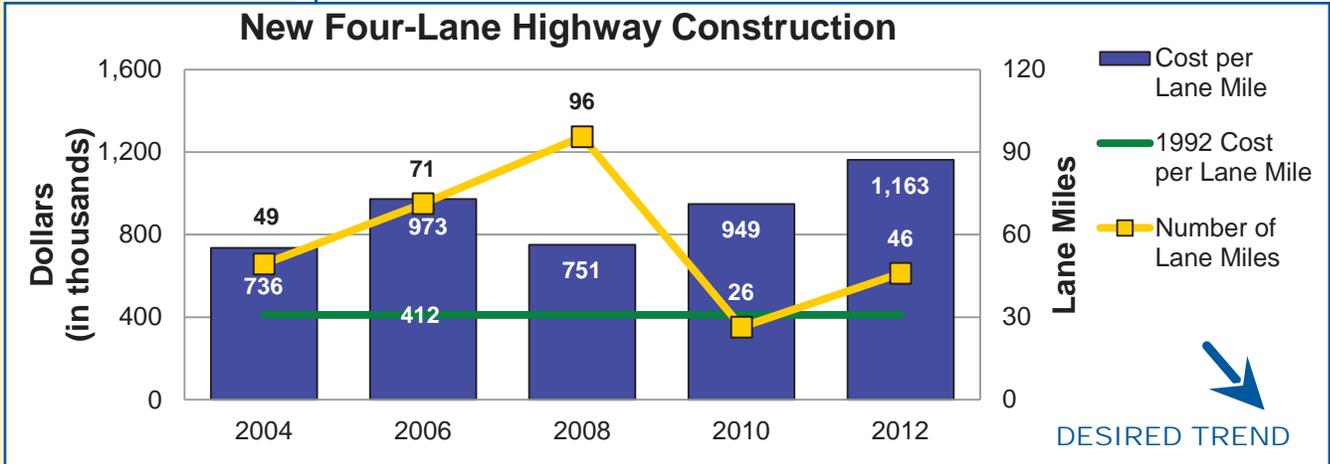
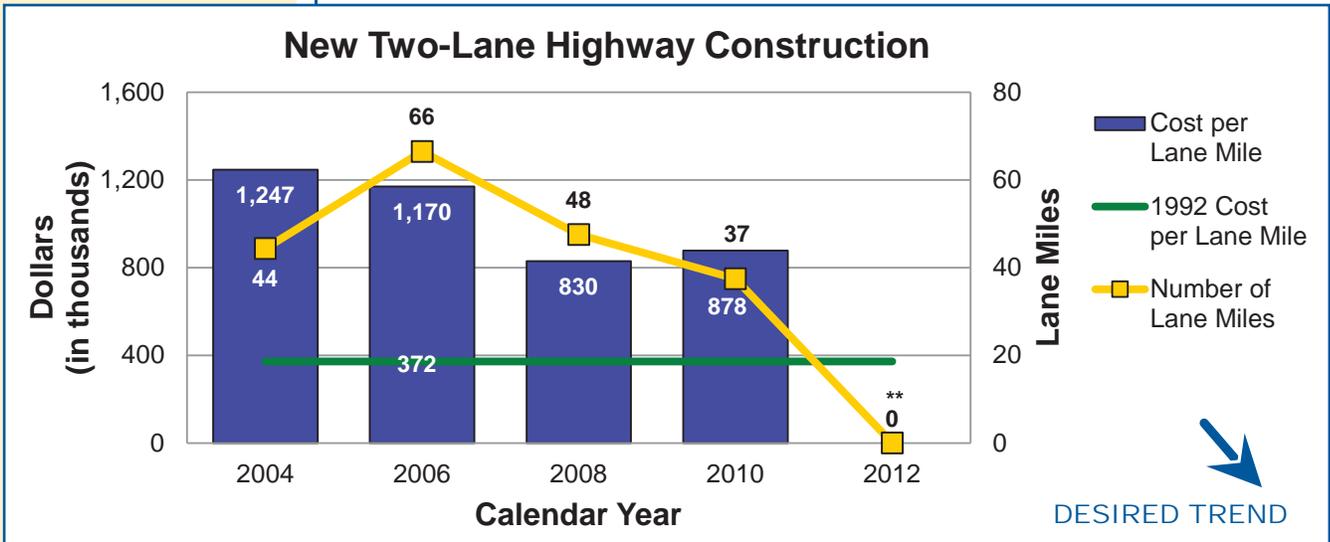
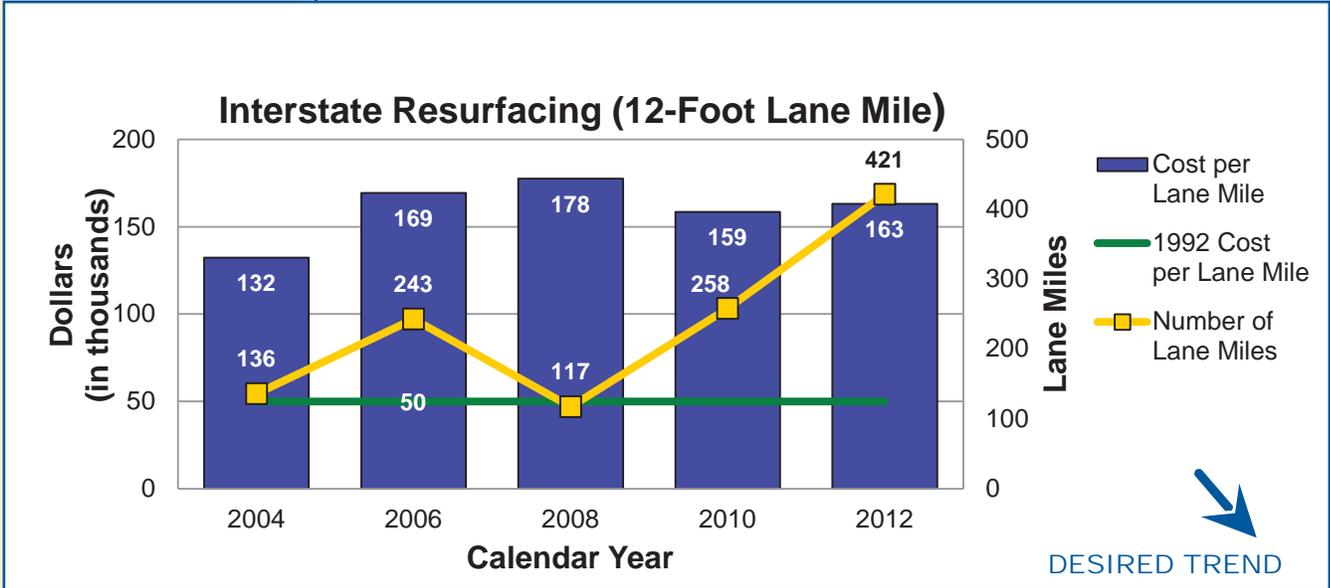
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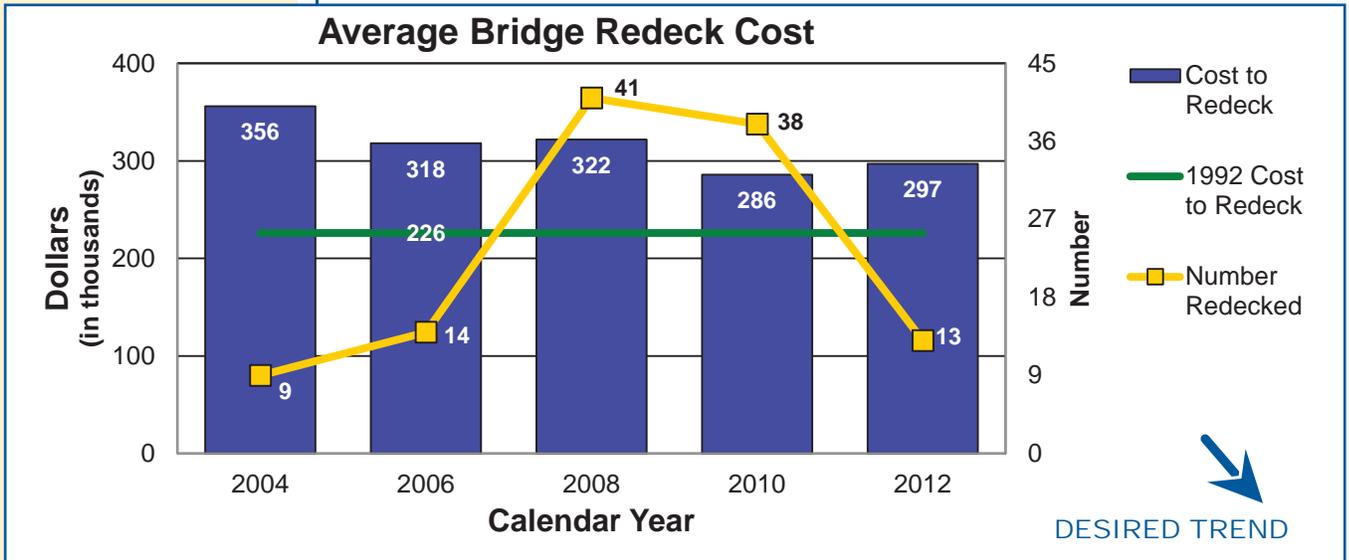
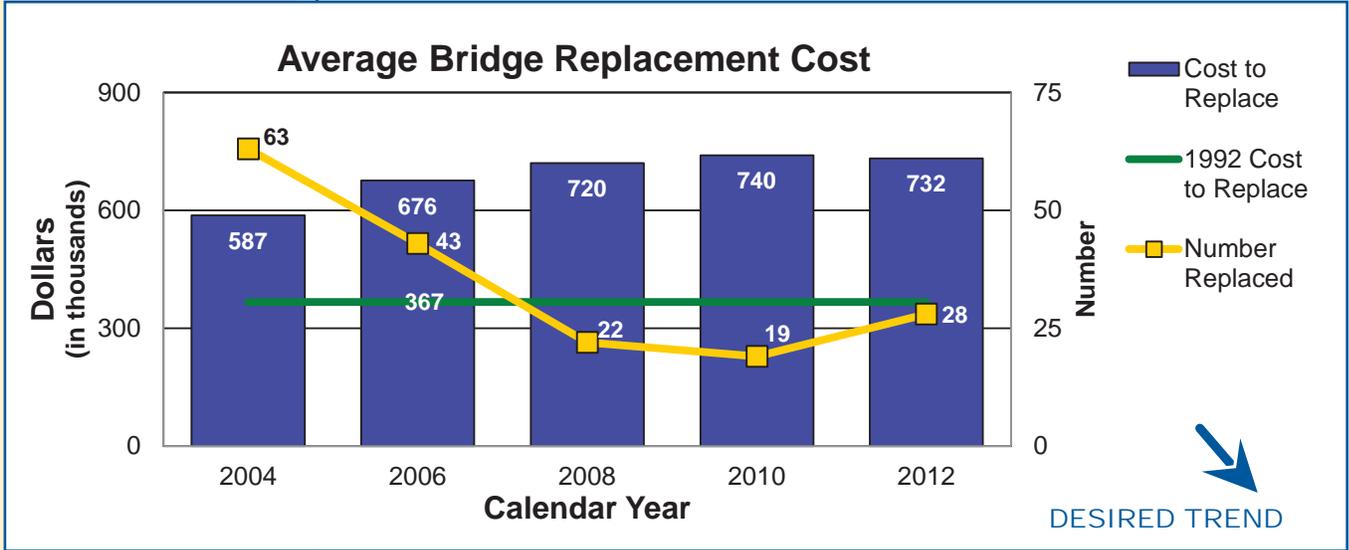
Note: No contract chip seal projects in 1992.



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