
Environmentally Responsible

*Tangible Result Driver – Dave Nichols,
Director of Program Delivery*

MoDOT takes great pride in being a good steward of the environment, both in the construction and operation of Missouri's transportation system and in the manner in which its employees complete their daily work. The department strives to protect, conserve, restore and enhance the environment while it plans, designs, builds, maintains and operates a complex transportation infrastructure.



Environmentally Responsible

Percent of projects completed without environmental violation

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Kathy Harvey, State Design Engineer

Purpose of the Measure:

This measure tracks environmental violations. MoDOT projects must comply with several environmental laws and regulations. In order to be in compliance, MoDOT makes commitments throughout the project development process that must be carried forward during construction and maintenance. In addition, the various permits obtained for projects also contain specific requirements for compliance. If a violation is noted, it can result in either a Letter of Warning or a Notice of Violation to MoDOT.

Measurement and Data Collection:

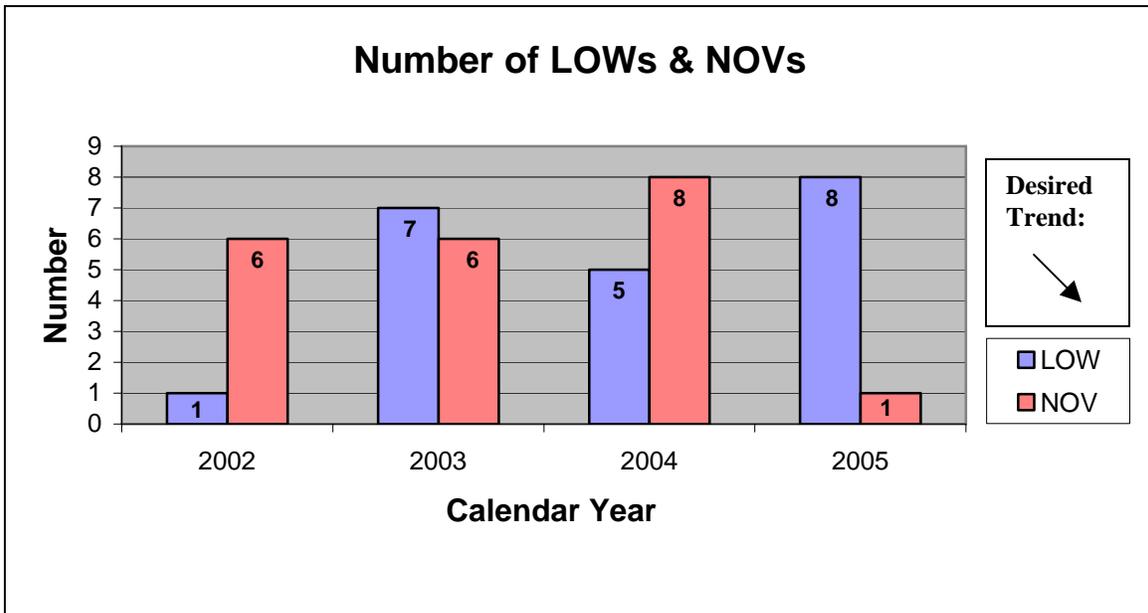
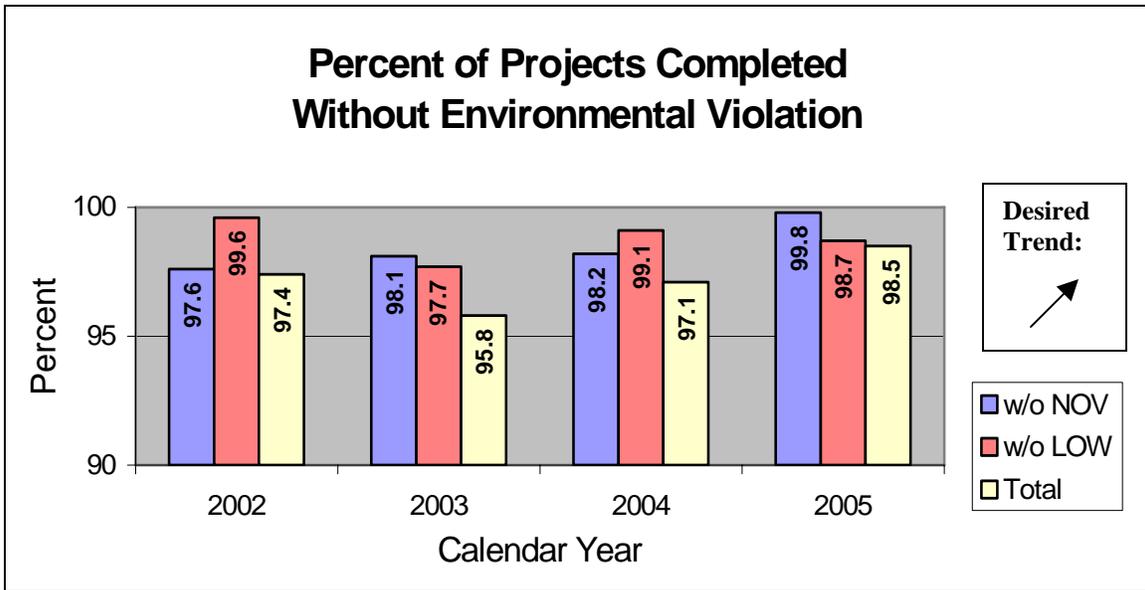
Both LOWs and NOVs are written correspondence to MoDOT from regulatory agencies, which are tracked in a MoDOT database by location or project number, as appropriate. Where tracked by project, the violations received may span several years. The first chart below is based on a calendar year of construction projects reported to be completed during that year and the number of violations received on those projects over the life of the project. The second chart is a report by calendar year of the LOWs and NOVs received by the department for any activity.

Improvement Status:

The first graph shows a relatively level trend line for the past four years, while the second graph shows a significant decline in the total number of NOVs received in 2005. Based on a few serious violations received in 2004, the department implemented several strategies to achieve a possible decrease in violations in 2005. An Environmental Quality Circle was formed in September 2004 that has completed the first phase of an environmental action plan for the department, which is being implemented. In addition, all department environmental staff has been consolidated into one unit that is resulting in improved efficiencies in the environmental area by providing the department with “one-stop shopping.”

Staff conducted national research to determine if an appropriate benchmark state exists. An appropriate benchmark state was not found. MoDOT believes that the benchmark to use is 0 percent NOVs. A small number of LOWs can be tolerated since they are by reference only warnings, but it is unacceptable to the department to have a violation. Regardless of what other states are doing, MoDOT has a zero-tolerance policy.

In 2005, MoDOT received one Notice of Violation and eight Letters of Warning. The LOWs were for three construction projects, two rest areas and three maintenance lots. The NOV was for a construction project. Based on the number of warnings received for the maintenance lots, the department is conducting an inspection of each maintenance lot which will be completed in the next few months. This survey will determine what actions, if any, are needed to avoid similar LOWs in the future that could lead to a NOV.



Environmentally Responsible

Number of projects on which MoDOT protects or restores sensitive species or habitat

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Gayle Unruh, Environmental & Historic Preservation Manager

Purpose of the Measure:

Missouri is home to many rare species of plants and animals, some of which are on the federal endangered species list. The Endangered Species Act of 1973 (as amended) prohibits harm or harassment of these species. Avoiding or minimizing harm to these species and protecting or restoring their habitat is a fundamental obligation of this organization. Avoidance and/or protection is the first goal of our efforts, but restoration is the minimum acceptable result.

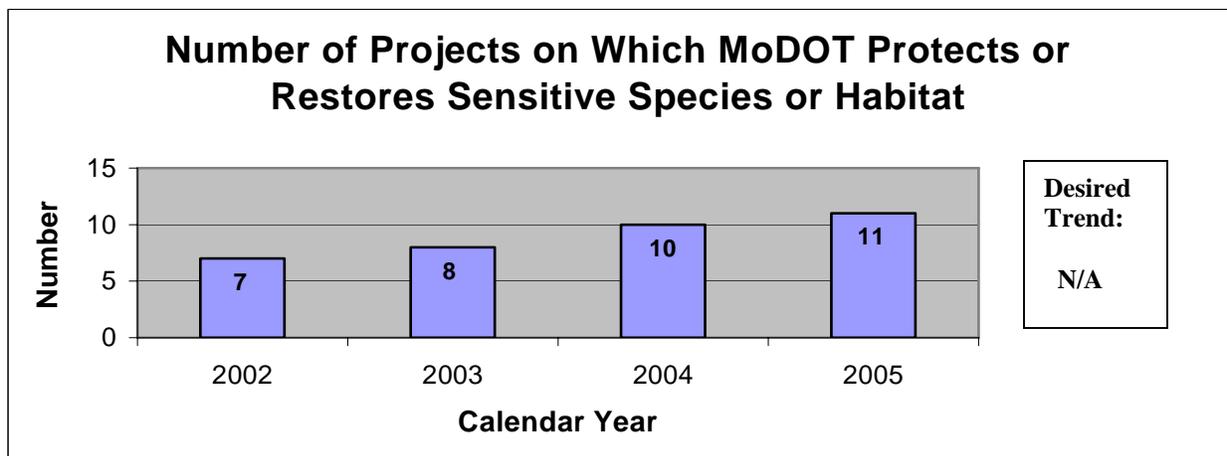
Measurement and Data Collection:

This measure is tracked annually by calendar year. On all MoDOT projects, the department investigates and informs the US Fish and Wildlife Service of any activity in the vicinity of a known threatened or endangered species or critical habitat. Through this consultation with them, primarily through letters, MoDOT has the data to report on this measure. Because this measure focuses on projects that protect or restore sensitive habitats that could not initially be avoided, many MoDOT projects are not included in this data.

Improvement Status:

There is no desired trend with this measure; the number reported will fluctuate depending on our program each year, type of projects being constructed, location and just the ability to make adjustments to avoid impact on sensitive species or habitat. It can be assumed that as MoDOT's program increases the number will go up.

During 2005, there were 11 projects where MoDOT protected or restored sensitive species or habitat. This included the following species: Ozark cavefish (three times), Missouri bladderpod, Indiana bat, gray bat (twice), pallid sturgeon, Ozark hellbender (twice), bald eagle, Hine's emerald dragonfly, *Boltonia decurrens*, and the Topeka shiner.



Environmentally Responsible

Ratio of acres of wetlands created compared to the number of acres of wetlands impacted

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Gayle Unruh, Environmental & Historic Preservation Manager

Purpose of the Measure:

Wetlands are a valuable resource in Missouri, having beneficial functions such as wildlife habitat, flood storage and water quality improvement. In addition to these benefits, it is required in the Clean Water Act that impacts to wetlands be avoided, minimized or that wetlands are recreated when a wetland is destroyed during a transportation project. The national goal set by the FHWA for recreating wetland is to construct 1.5 acres of wetland for every 1.0 acre of wetland impacted. Recreating wetlands at this ratio helps to offset the lost beneficial functions during the time it takes for a wetland to develop. This measure helps ensure that MoDOT is doing its part to maintain wetlands in Missouri.

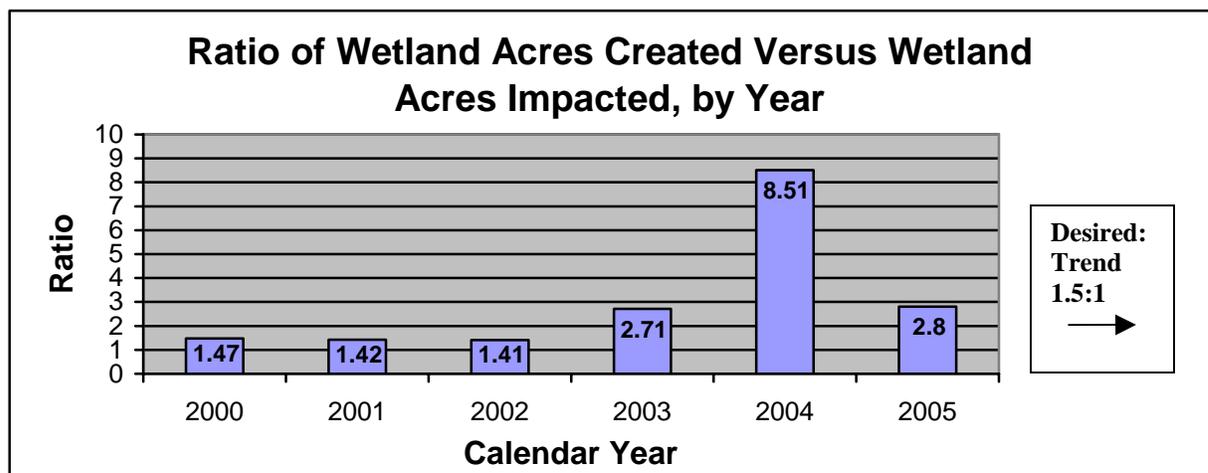
Measurement and Data Collection:

Acres of impact will be taken from Clean Water Act permits by project and compared to acres of wetland constructed, taken from roadway design plans or mapped wetland areas recreated by MoDOT or wetland mitigation purchased from a commercial wetland bank. Impacts may occur in a different year from the mitigation, so for the purposes of this measure, the timeframe for the reporting is when the mitigation construction is complete based on a calendar year.

Since this measure is also tracked by other states through FHWA, MoDOT contacted FHWA to find out which states are successful at meeting the 1.5 to 1 ratio. Most of the states queried said that the biggest factor in successfully meeting the ratio is in the use of wetland mitigation banks. They had greater control over achieving their target ratios and had better wetland success when they had mitigation banks in place. MoDOT has a final statewide wetland mitigation banking agreement. Two wetland banks are in the planning stages for proposal to the regulating agencies.

Improvement Status:

MoDOT improved in 2005 by replacing wetlands at a rate of 2.8 to 1. Statewide training targeting the interpretation and attention paid to wetland development plans was conducted with construction inspectors and resident engineers to help achieve this improvement. However, additional wetland was created to mitigate for a business allowed to place a driveway in MoDOT wetland mitigation. This mitigation for an encroachment in previously established mitigation accounts for 0.8 to 1 of the ratio total. MoDOT is placing all mitigation on as-built plans and incorporating the locations of mitigation in the Realty Asset Inventory to keep this type of violation from happening in the future.



Environmentally Responsible

Percent of air quality days that meet Environmental Protection Agency standards by metropolitan area

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Mabelle Watkins, Transportation Planning Director

Purpose of the Measure:

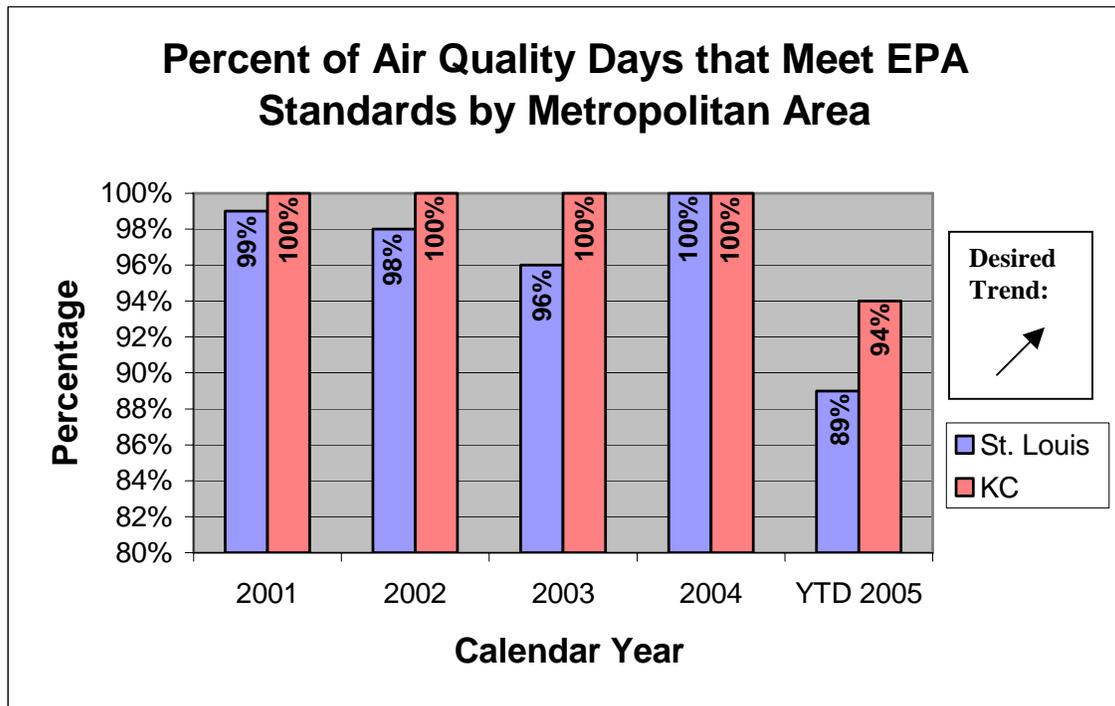
This measure tracks MoDOT's role in improving the air quality of Missouri's metro areas. The Environmental Protection Agency (EPA) approves state plans to improve air quality. MoDOT makes every effort to design and build roads that meet air quality standards and do not violate the EPA-approved plans.

Measurement and Data Collection:

EPA establishes several air quality standards for the United States. The ground level ozone standard affects Missouri. Ozone readings are collected in Kansas City and St. Louis during the ozone season – April through October. The data contained in the table below reflects the available percentage of days, by metro area, that met the EPA's ground level ozone standard. The data for the 2005 ozone season is now included.

Improvement Status:

MoDOT's efforts coupled with milder than normal weather in 2004 contributed to 100 percent positive air quality days as measured by EPA standards. Changes to more strict EPA standards and warmer than normal weather during the 2005 ozone season have contributed to a reduction in the percentage of positive air quality days. MoDOT continues to serve on the Air Quality Forum Committee in Kansas City and the Air Quality Advisory Committee in St. Louis. Staff attends monthly meetings to review these committees' programs and ensure that both regions continually work to improve the air quality of Missouri citizens. Both Kansas City and St. Louis have implemented programs that help with traffic congestion, enhance Missouri's bicycle/pedestrian programs and ensure transit agencies can provide the services their cities need.



Environmentally Responsible

Percent of alternative fuel consumed

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Dave DeWitt, Deputy Administrative Officer

Purpose of the Measure:

This measure tracks the use of alternative fuels. It shows MoDOT's contribution toward environmental responsibility and conservation of resources.

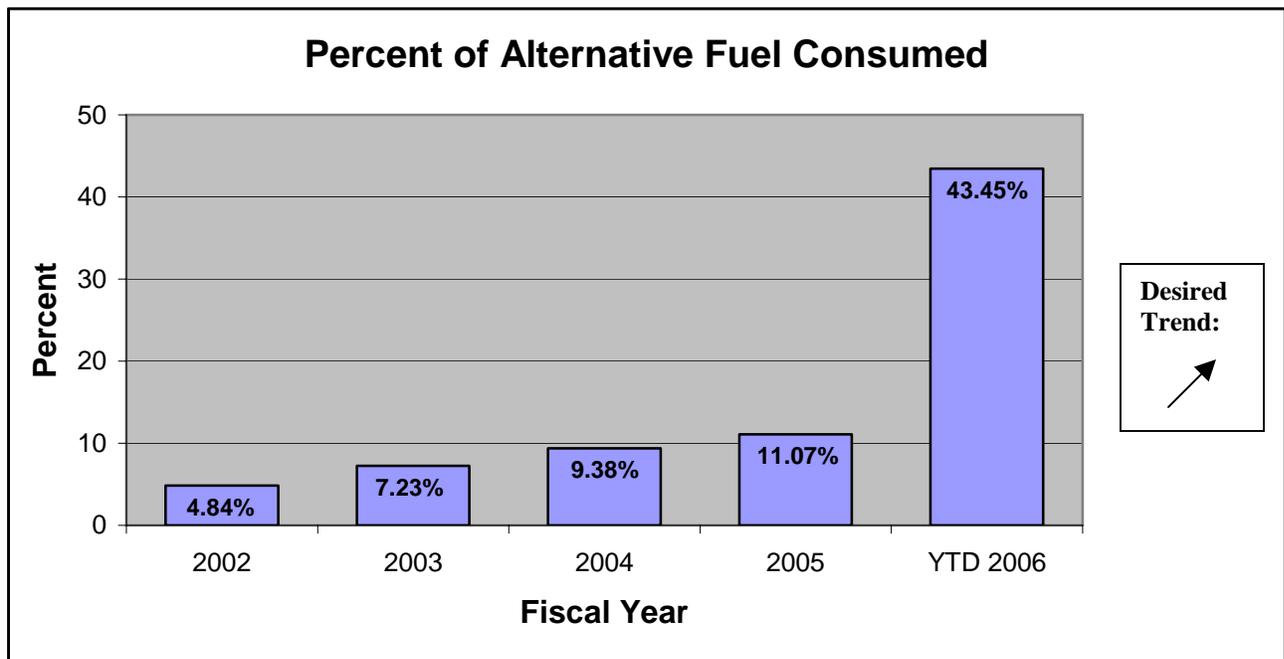
Measurement and Data Collection:

Alternative fuel is E-85 and biodiesel. When a user pumps fuel into a MoDOT vehicle or piece of equipment, that usage by gallon and by fuel type is captured in the SAM II system. Reports are generated to extract the number of gallons used from that system.

Improvement Status:

There was a significant increase in the usage of biodiesel during the first two quarters. This is a result of MoDOT partnering with the Missouri Soybean Association to educate our employees and our fuel vendors. Vendors were trained on MoDOT's requirements and our employees gained knowledge about using the product. This effort eliminated some of the myths regarding biodiesel and resulted in our employees building strong relationships with our vendors. Availability of biodiesel continues to be a problem in the south central and southeast districts of the state. Public meetings were held with fuel vendors in these districts and will improve availability. Until we are guaranteed that the use of biodiesel will not cause interruptions to winter operations, we will pilot usage in two districts.

Currently the department operates two E-85 bulk fuel stations and is planning to install others in District 4 and District 7 in FY 07.



Environmentally Responsible

Number of historic resources avoided or protected as compared to those mitigated

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Bob Reeder, Historic Preservation Coordinator

Purpose of the Measure:

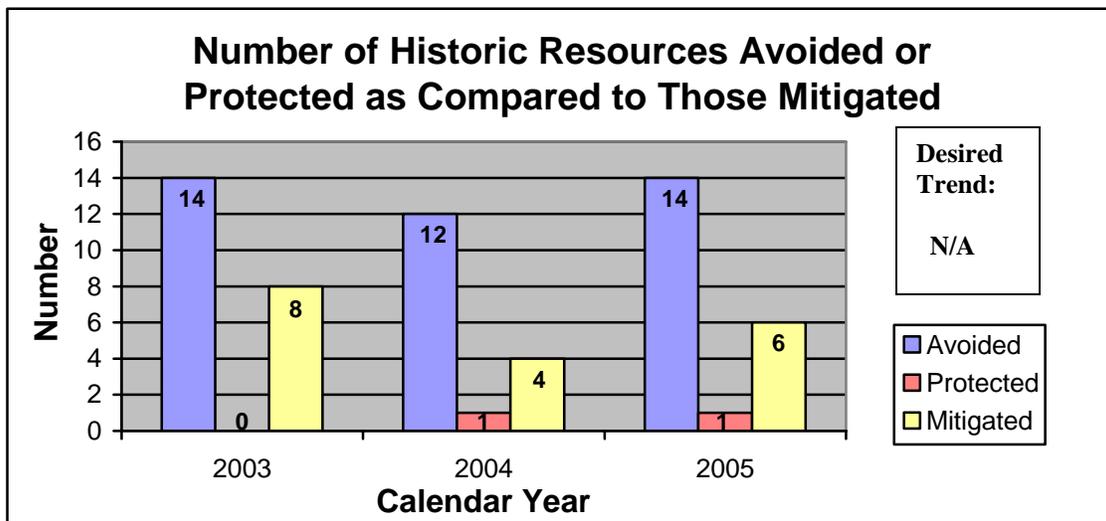
Federal historic preservation laws relating to federally-funded projects, gaining public and agency support for particular projects, and general environmental stewardship require MoDOT to avoid, minimize, or mitigate project impacts to historic buildings and bridges whenever feasible. Compiling information about projects impacts to important cultural resources provides a measure of MoDOT’s success at avoiding, protecting, or mitigating project impacts to important cultural resources.

Measurement and Data Collection:

Data collection begins at the approved Conceptual Plans stage. As project design plans and right of way plans are prepared by the district, department staff track the number of historic resources in project footprints and the number of resources that can be avoided or protected by MoDOT revising the design of a project versus the number of resources MoDOT can not avoid and must be mitigated. The data include only historic resources identified as potentially affected by projects after the conceptual plan stage. The data do not include historic resources avoided during early project planning or those avoided during consideration of different alignments during NEPA studies.

Improvement Status:

MoDOT’s overall success at minimizing and avoiding project impacts to historic resources is illustrated by only six historic resources being impacted by any MoDOT project during 2005 and ultimately requiring mitigation. Very early project design efforts to lessen project impacts to significant historic resources were successful, resulting in only 21resources remaining in project footprints at the conceptual plans stage. MoDOT continued efforts to reduce project impacts to historic resources during final design of the projects and 14 of the 21 resources were subsequently avoided. One resource could not be avoided but is protected or preserved in the project footprint. Only six historic resources could not be avoided and required mitigation. Four of the resources were older bridges requiring replacement and two were historic buildings. MoDOT’s goal is to maximize the number of historic resources avoided and to minimize the number of resources impacted and mitigated. This measure has no overall desired trend. For any year, data for the measure will vary due the number of projects in the MoDOT program and the specific nature of those projects; however, the overall effectiveness of MoDOT’s historic preservation efforts is reflected by all of MoDOT’s activities requiring the mitigation of only six historic resources during 2005.



Environmentally Responsible

Number of trees planted compared to number of acres cleared

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Jerry Hirtz, Technical Support Engineer, Construction & Materials

Purpose of the Measure:

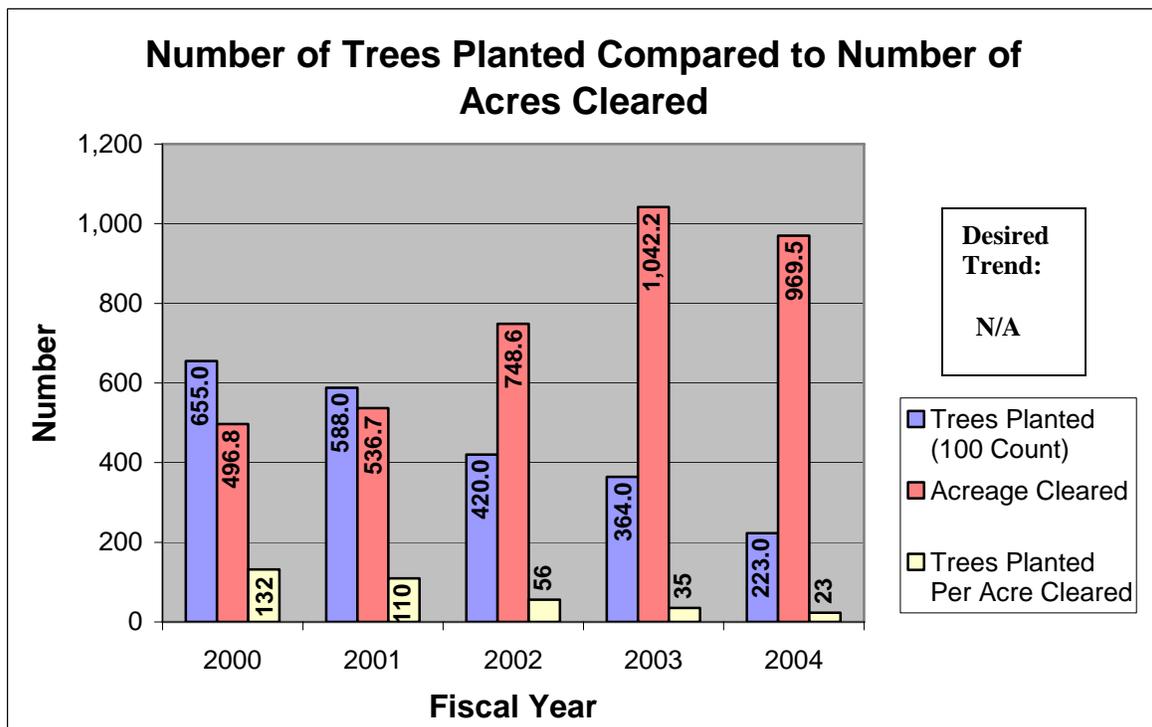
This measure tracks MoDOT's effort to replace trees removed as a result of clearing operations on its construction projects.

Measurement and Data Collection:

MoDOT has committed to plant two trees for each six-inch-or-larger tree removed by construction operations. This measure is an annual measure. YTD counts cannot project a yearly total as tree removal numbers vary with the letting of grading contracts. MoDOT documents acreage cleared through its contract administration processes and a record is maintained of trees ordered each year for spring planting. In the future, this measure will be amended to compare trees planted to trees removed as the data becomes available.

Improvement Status:

Over the past several years, areas cleared for construction have steadily increased and the number of trees planted has decreased. Close monitoring has allowed staff to better assess how MoDOT is meeting its tree replacement obligations and should improve the previous deficiency.



Environmentally Responsible

Number of tons of recycled/waste materials used in construction projects

Result Driver: Dave Nichols, Director of Program Delivery

Measurement Driver: Joe Schroer, Field Materials Engineer

Purpose of the Measure:

This measure tracks MoDOT's efforts to be environmentally conscious while being fiscally responsible through the use of recycled/waste material when applicable.

Measurement and Data Collection:

The number of tons of recycled/waste material used in construction projects is measured through MoDOT's construction management database which tracks material incorporated into projects. Data is collected on an annual basis.

Improvement Status:

Available data from 2004 and 2005 has been included. The data for 2005 shows that the amount of recycled/waste material incorporated into projects during 2005 surpassed the amount used in 2004. Project specifications were revised to allow a greater amount of recycled materials in asphalt and concrete mixtures. An increase due to the Smooth Roads Initiative program accounts for such a large increase in hot mix asphalt as contractors have used these materials to augment virgin aggregate shortages. We continue to evaluate materials provided by contractors and modify specifications to allow acceptable materials. Contractor successes are being passed on to encourage use.

