2002 Strategic Initiative One
Update ACCESS Ohio

Many changes have occurred since 1995 when ODOT completed its Statewide Long-Range Transportation Plan, ACCESS Ohio. To address these changes, ODOT will update the long-range vision of Ohio's transportation system by updating ACCESS Ohio. ACCESS Ohio was completed in 1995 with the year 2020 as its planning horizon. Since 1995, ODOT has greatly improved its planning process which gives the department more insight into its 20-year needs. ODOT has recently improved its forecasting of bridge and pavement needs, it has conducted new corridor analyses, it has forecasted congestion trends and it is addressing Intelligent Transportation Systems. In addition, the many changes within the state, including increased traffic volumes and changes in population, require an updating of forecasts from 1995. For Ohio and ODOT to continue to receive federal approval of its State Transportation Improvement Program, the state is required to maintain a Statewide Long-Range Transportation Plan with a 20-year planning horizon reflecting current conditions.

Assistant Director Cash Misel and Deputy Director Matt Selhorst will be responsible for ownership of this initiative. Affected ODOT Central Office entities include offices of Planning, Production, Local Programs, Finance, and Highway Management. Other organizations include Ohio Rail Development Commission, Federal Highway Administration, Metropolitan Planning Organizations and the Governor's Office.

Goals

- Develop a Plan Update Advisory Team.
- Update ACCESS Ohio goals and guiding principles.
- Incorporate ODOT's system analysis of bridge and pavement needs.
- Review and incorporate urban areas' long-range modal plans.
- Update data based on new census results.
- Expand macro-corridor concepts and strategy for completion.
- Incorporate ODOT's financial forecasts.
2002 Strategic Initiative Two
Develop Strategies to Measure and Manage Congestion

In the past year, ODOT made significant gains on 2001's long-term initiative to Measure and Manage Congestion. The emphasis in the first year was on measuring congestion. The department’s planners now have a systematic analysis of how much congestion occurs in Ohio, where it occurs and how congestion may increase over time. Large strides were made on the first half of the initiative - that is in the measuring of congestion.

In 2002 and beyond, the initiative shifts to the much harder and longer-term effort of managing congestion. Clearly, an issue as large as congestion cannot be addressed in one year. Congestion will always be an issue and ODOT will be managing congestion forever. What is intended in the following year is to use the analysis of congestion produced last year to develop a comprehensive Ohio strategy to address and minimize congestion to the greatest extent possible. This strategy will drive many decisions including projects to be recommended to the Transportation Review Advisory Council (TRAC), basic ODOT approach to operational issues such as signal timing, ODOT's emphasis on managing accidents and ODOT's strategy for using transit.

In the past year, the Division of Planning conducted several related analyses to measure the extent of congestion in Ohio. These included:

- Agreeing with each regional Metropolitan Planning Organization on a common benchmark level of service from which to measure congestion. Now, ODOT can measure congestion in a common format across all 16 urbanized areas in Ohio;
- The division summarized how much congestion occurs in Ohio by analyzing system performance measures and each route’s “level of service.” It found 4 percent of Ohio’s freeways in Cleveland, Columbus and Cincinnati operate at Level of Service F and 4 percent operate at Level of Service E in the other urban areas;
- The division identified the top 100 most congested locations, so they can be addressed by studies to determine if they can be improved;
- The division determined it can use these measures to produce congestion updates for ODOT’s State of the Transportation System report to keep policy makers informed about congestion trends; and
- The analysis found widespread agreement that incidents such as weather, accidents and construction contribute to up to 40 percent of all motorist delay, supporting the need for “incident management” strategies.

The congestion analysis will fill a large gap in ODOT’s planning and project selection process. In 1995 ODOT adopted a strategic goal of having an “objective and criteria-driven project-selection process.” That initiative led to the creation of ODOT’s criteria-based TRAC, it led to ODOT improving its measuring of bridge and pavement deficiencies and it influenced ODOT to base most project decisions on objective, factual analysis. In 2000, ODOT updated the initiative to be “We will have a planning process that identifies strategies and projects to address evolving transportation needs.” One area where facts were lacking, was in the area of congestion. ODOT had good data on bridge and pavement conditions, but it lacked good data on the most congested locations in Ohio and how congestion trends will change over time. The analysis conducted in 2001 makes ODOT’s planning process and its project-selection process more objective and fact-based, in keeping with the department’s strategic goals.

Assistant Director Cash Misel and Deputy Directors Matt Selhorst and Bill Lozier will be responsible for ownership of this initiative. Other affected ODOT entities include: division of Highway Management, the offices of Traffic engineering and ITS Program Management, and all District Offices.

Goals
- ODOT will use 2001’s analysis as the basis for identifying highway and transit projects which should be funded by the TRAC and to determine which areas of congestion require further study to determine if they can be improved.

- ODOT will predict the amount that congestion will grow in 20 years.

- A statewide congestion analysis report will be completed which later will be included in ODOT’s State of the Transportation System report.

- ODOT will develop in the next year a formal “operational strategy” which leads the department into a new way of thinking that is of an active, hour-by-hour management of the urban system to maximize the use of existing capacity. These practices will include:
  
  - Continuing the expansion of “freeway service patrols” in Cuyahoga, Franklin and Hamilton counties which help motorists move stalled cars from freeways to prevent backups;
  
  - Complete the ODOT policy on Intelligent Transportation Systems which will use computerized monitoring of freeways to identify accidents and notify emergency personnel of the need to respond quickly to crash sites on freeways;
  
  - Continue encouraging law enforcement and local cities to adopt “incident management” best practices to clear accidents quickly;
  
  - To continue to emphasize ODOT’s maintenance of traffic efforts to keep construction zones moving; and
  
  - Continue emphasis on snow and ice excellence to minimize urban delay; Review policies and practices of traffic signal operation to ensure signal timings are optimized to move traffic efficiently; and ODOT thoroughly examines low-cost improvements such as turn lanes and signal timing to maximize capacity.

- Emphasizing with local governments the need to manage access – such as curb cuts – effectively so that roadways’ existing capacity can be preserved.
2002 Strategic Initiative Three
ODOT Will Develop a Modern, Customer-Friendly Project Management System

In 2001, ODOT adopted an initiative to replace PDMS, the Project Development Management System. The initiative resulted because as ODOT tried to improve its planning and project management processes the limitations of the old PDMS increasingly became an impediment. Accurate data about project costs and schedules were difficult to obtain. Users often developed informal, alternative project-tracking systems because PDMS did not meet their needs. Without an accurate, commonly used system it was difficult to track statewide projects, production milestones and costs. Planning suffered because it was difficult to forecast how much system improvement was being accomplished without accurately knowing which projects were occurring. The replacement of PDMS with a new system named Ellis was a 2001 initiative.

That initiative is being carried over into 2002. The process is difficult because the new system needs to automate many new business functions. New planning functions, new project-tracking practices and new fiscal management processes all have been developed in recent years and need to be incorporated into Ellis.

Ellis will be more than a project-tracking system. It will be a major management system linking ODOT’s new approaches to project delivery, planning, system forecasting and financial management. Ellis does none of these functions completely by itself but its data needs to be compatible for the other ODOT business practices to occur.

The scope of Phase 1 of Ellis has been revised as follows:

- “What If” scenarios will be incorporated into future phases of Ellis
- Direct links to certain systems such as the department’s current work plan development system will be incorporated into future phases of Ellis

In the past year the following has been accomplished:

- On August 30th and 31st three large “think tank” sessions were held with key system users to determine system requirements.
- Two high level district personnel (production and planning) were devoted to the project 100 percent of their time over a four-month period and continue to devote a significant amount of their time to assure district input.
- On January 17th 2001, the original think tank members and any system users were invited to a demonstration which provided a pictorial look at what the future Phase 1 implementation of Ellis might look like.
- A full-time project manager has been hired to assist in the deployment.
- DoIT hired four consultants to meet or beat the revised project delivery timeline.

Assistant Directors Tom McPherson and Cash Misel and Deputy Director Shobna Varma will be responsible for ownership of this initiative. Other affected ODOT Central Office entities include: the divisions of Information Technology, Planning, Production, Finance and the Program Managers.

Goals
The timeline for completion of Phase 1 of Ellis has been revised from statewide deployment of January 15, 2002 to:
- Requirements and data collection - completed
- Requirements modeling and validation - initially completed and under revision
- High level system design - August 22, 2001
- Construction - May 24, 2002
- Deployment and Training - June 7, 2002
- Statewide Deployment - August 15, 2002
2002 Strategic Initiative Four Re-Defining County Priorities

ODOT will in the next year refocus the activities of the county work force to emphasize 11 key functions. These 11 functions form the core of the counties’ efforts and they will give ODOT a common approach to improving basic roadway conditions statewide.

The 11 core functions are not new items. They are:

- Snow and Ice
- Preventive Maintenance
- Staffing Construction
- Maintaining Drainage
- Maintaining Signage
- Maintaining Pavements
- Maintaining Shoulders
- Removing Litter
- Maintaining Pavement Markings
- Maintaining Guardrail
- Vegetative Control

Although these functions are basic, ODOT has not defined them as the core mission of the counties nor has it set standards for what level of condition it wants for these items. This lack of standards became apparent with the initiatives in 2000 and 2001 to develop an annual work plan. These work plans were intended to address several goals - to keep the work force informed, to set clear goals and to measure accomplishments. The work plans have helped achieve those goals.

However, a review of the work plans show that counties and districts varied considerably. Some do a great deal of ditching and some did not. Others emphasize mowing while others emphasize guardrail. Not only did ODOT have variations in level of effort, ODOT lacked complete measures for what the level of condition it had for these items. For instance, until recently ODOT did not have an annual inventory of guardrail deficiencies, striping deficiencies or drainage deficiencies. ODOT had the Maintenance Quality System but it was based on sampling, and not on 100 percent inventories.

This new initiative will give ODOT an annual update on its conditions for eight basic roadway conditions. Based on the update, the counties, the districts and ODOT Central Office can determine if they are getting better or worse for basic items such as guardrail, shoulders, signing, striping and so on.

Assistant Director Mary Ellen Kimberlin, and Deputy Director Bill Lozier and Administrator Keith Swearingen will be responsible for the ownership of this initiative. Each district’s work plan, construction program, planning functions and highway management will be impacted by this initiative.

Goals

The Goals of the Initiative will be to get the conditions of each district to statewide averages or above for all eight roadway items within three years. The steps involved to achieve the goal will be:

- Each county will review its deficiencies in these basic roadway items.
- It will determine which areas need the greatest focus based on its deficiencies relative to all other counties and relative to the statewide condition goals.
- The county shall determine how much time needs to be devoted to snow and ice, construction inspection,
training and other functions.

- Based on the remaining work force hours, the county will prioritize its efforts and forecast how much progress its forces can achieve through force account work.

- If the condition levels cannot be improved within three years to achieve the statewide goals, the county forces should forecast how much progress can be added by help from district-wide crews, such as guardrail or ditching crews.

- Once the district help is added, if there still isn’t enough progress to achieve the goal within three years, the county and district need to consider letting contracts to bring conditions levels up to standard.

- Once up to standard, the county needs to have an on-going plan and production goals for ensuring the conditions remain at the statewide goal.
2002 Strategic Initiative Five
Build Bridges Faster, Smarter, Better

Since at least 1995, ODOT’s customer focus has led the department to improve its maintenance-of-traffic practices. Maintenance of traffic concerns are driven by ODOT’s desire to respond to the public and because of the department’s growing realization of the delay and inconvenience construction projects cause.

The magnitude of the delay caused by construction is greater in Ohio than in many states because of Ohio’s large transportation system. Ohio has the 10th largest highway network, the fifth highest volume of traffic, the fourth largest interstate network, the fourth largest amount of freight shipments and the second largest inventory of bridges.

As ODOT continually addresses its maintenance of traffic practices, the role of bridge construction continually stands out as a limitation. Generally, pavement activities move quickly, or at least temporary pavement can be laid to maintain traffic in construction zones. However, bridges generally can’t be easily widened and their typical construction techniques can be slow and time-consuming. Generally, the speed of the bridge repair is the limiting factor in the completion date of a project, and therefore the length of time traffic is affected. Considering Ohio has the second largest bridge inventory, if any state should excel at bridge construction practices, it should be Ohio.

ODOT’s plans, specification and construction techniques for bridges has not been thoroughly analyzed for many years. In the meantime, many advances in bridge construction techniques have occurred. Examples of new methods include: prefabricated bridges, prefabricated bridge decks, stay in place forms, expedited construction times, changes in concrete bridge sections to eliminate the need to place a separate wearing surface, use of new high performance materials, or utilization of innovative construction techniques and equipment.

Assistant Director Mary Ellen Kimberlin and Deputy Director Bill Lozier will be responsible for ownership for this initiative. Affected Central Office ODOT entities include: divisions of Highway Operations, Production Management, Construction Management and offices of Structural Engineering and Construction Administration. Also all district offices of Production.

Goals

- Conduct a literature search and surveys of manufacturers, contractors and state DOTs to determine which rapid repair/construction methods are available, along with which methods have been successful.

- Collect cost and feasibility information on each method.

- Initiate sample projects with the most promising expeditious construction techniques and processes.

- Develop best practice guidance for the most expeditious/cost effective bridge construction techniques.

- Complete the initiative by June 2002.
2002 Strategic Initiative Six
ODOT Will Improve the Quality of Its Construction Plans

With the volume of projects necessary to maintain Ohio’s vast highway network it is critical the project development process be as efficient as possible. Modifications to project plans during construction can be costly and can cause delays and disruptions to the traveling public and local communities.

The establishment of “constructibility” reviews will ensure the department’s plans provide contractors with clear, concise information that can be used to prepare a competitive, cost effective bid. The constructibility review will be conducted by an ODOT team on all major new, multi-lane and complex projects of more than $25 million early in the design stages to ensure the projects are biddable, buildable, and cost effective.

The current project development process does not include the concepts of preliminary engineering and value engineering as part of the planning process and to the degree necessary during the environmental clearance process. Routinely, highway projects’ impacts to utilities, right of way acquisitions and environmental assessment circumstances are poorly defined until the project reaches the later stages of detailed design development. This has resulted in project delays due to late coordination and insufficient studies of impact areas.

Often the project development process is inadequate from a lack of participation by all affected ODOT units. Planning, design, construction, right of way, utilities and operations units all proceed linearly and do not work in a collaborative manner in all stages of plan development. Input from all groups early can avoid problems later in the process. “Full circle” project development teams are needed.

Assistant Directors Mary Ellen Kimberlin and Cash Misel and Deputy Directors Walid Gemayel and Rand Howard will be responsible for ownership of this initiative. Affected ODOT Central Office entities include: divisions of Construction Management, Contract Administration, Highway Operations Production Management, Roadway Engineering Services and offices of Construction Administration, Estimating, Structural Engineering, Traffic Engineering, Environmental Services, Real Estate. Also all district Planning, Production, Construction and Maintenance offices.

Goals

- Develop the composition and responsibilities of the constructibility review team, the frequency and location of reviews.

- Develop a constructibility review checklist to be used uniformly by all districts.

- Develop a measuring system to determine the effectiveness of constructibility reviews.

- Provide high quality and cost effective plans that can be constructed using standard construction methods, materials and techniques.

- Move value engineering and preliminary engineering earlier into the development process.

- Complete a new process by June 2002.
2002 Strategic Initiative Seven
ODOT Will Modernize Its Construction Administration Practices

Construction personnel in the past year have undertaken a landmark study of the best practices in six other states. Their goal was to determine what are the best state-of-the-art construction practices in other states and to adopt those practices that will significantly improve Ohio's construction processes. Although construction re-engineering is occurring later than in other areas such as planning, the construction analysis is the most thorough and ambitious benchmarking effort ODOT has undertaken. It will lead to a watershed in how ODOT inspects projects, tests materials, treats contractors and trains its personnel.

The analysis showed ODOT is very good in some areas. ODOT's construction engineering costs were among the lowest studied, which indicates our process is efficient. ODOT’s Construction Management System was the most comprehensive found. ODOT's flexible use of 1,000-hour transfer of highway workers was unique and very efficient. To the negative, however, ODOT had the least amount of training and professional development offered for construction personnel compared to any other state studied. Construction was very behind in “Partnering,” or the collaborative “win/win” approach to dealing with contractors. Construction materials testing practices were old-fashioned and out of data. ODOT's training for how to administer a contract was found to be lacking.

Assistant Director Mary Ellen Kimberlin and Deputy Directors Walid Gemayel and Mark Kelsey will be responsible for ownership of this initiative. Affected ODOT entities include: Central Office divisions of Contract Administration, Construction Management, Highway Operations, and Information Technology; offices of Construction Administration, Structural Engineering, Materials Management, Traffic Engineering, Human Resources, and Labor Relations; and the Major Bridge and Multi-Lane program managers. Also all district Production, Highway Management, Construction, Materials, and Testing offices.

Goals
To address the documented lack of training for construction personnel the initiative will undertake the following steps:

- Develop a qualified and capable group of construction technicians to be utilized as a statewide core of specialists, to allow for better manpower utilization at district level and to assist in achieving consistency and uniformity in construction administration.

- Develop a formal training curriculum for inspectors and technicians.

- Provide a uniform advancement ladder that would be based on field experience, formal training, and proficiency testing.

- Update the way ODOT currently conducts construction inspection taking into account prioritization, while maintaining a critical inspection task list.

- Develop a construction project inspection and material control procedure that properly prioritizes resources based on the critical inspection tasks/items. This will include automating the inspection and documentation process to reduce errors, and capture critical information in a timely manner.

- Develop a manual for critical item inspection that reduces the need for full-time inspection of some work items, and a QC/QA approach for ensuring quality material. Quality Control/Quality Assurance specification procedures will place more documentation requirements on contractors, and quality assurance on ODOT.

- Continue utilizing highway workers to supplement inspection as needed.

- Achieve prompt finalization of construction projects.
• Optimize construction engineering and inspection (CE) costs.

• Increase the number of projects completed on time.
2002 Strategic Initiative Eight
Dramatically Change the Way ODOT Currently Tests and Accepts Materials

The construction study confirmed what construction personnel have suspected - that ODOT's material testing processes are very out of date compared to the private sector and to other states. Current materials acceptance concepts are based on ODOT performing process control, quality control, testing, and final verification acceptance of all materials components. This concept requires ODOT to provide the manpower and resources; make all decisions on materials quality; and accept responsibility for all phases of the material approval process. Other states and private companies have long been using a Quality Control/Quality Assurance (QC/QA) process to approve supplier's process and not testing each individual item or batch.

By using work force QC/QA concepts and certification programs for materials acceptance, ODOT can change its current role and more effectively use its work force. ODOT additionally gains the benefits of industry’s knowledge, expertise and ingenuity along with suppliers and contractors’ quality control programs.

Assistant Director Mary Ellen Kimberlin and Deputy Directors Walid Gemayel and Administrator of Materials Management Lloyd Welker will be responsible for ownership of this initiative. Affected ODOT entities include: Central Office divisions of Construction Management, Highway Operations, and Information Technology; offices of Construction Administration, Structural Engineering, Materials Management, Traffic Engineering, Human Resources, and Labor Relations; and the Major Bridge and Multi-Lane program managers. Also all district Production, Highway Management, Construction, Materials and Testing offices.

Goals

- Partner with FHWA and the industry to develop a QC/QA approach to utilize contractor developed mix designs and in-process quality control programs to ensure material quality.

- Partner with FHWA and the industry to establish certification programs for currently tested materials. Modify the existing CMS computer system and its testing component TAS to allow the use of certified materials.

- Form a team of ODOT contractors, materials and construction personnel to evaluate all materials processes for need, documentation requirements and computerization modifications with a goal of lowering current testing documentation by at least 50 percent.
2002 Strategic Initiative Nine
Develop Innovative Contracting Methods

The Office of Construction found that leading states use a variety of contracting methods to achieve various goals. ODOT uses primarily a design-bid-build process with set completion dates and traditional owner-oversight of all key decisions, materials and specifications. ODOT's contracting methods are sound and have served the state well in most instances. However, other states have an arsenal of contracting processes which they use for special circumstances when they want to encourage innovation, timeliness or other special outcomes. ODOT has experimented with some methods, such as design/build, but the construction study documented the department's methods are among the most limited.

This initiative will develop an array of contracting options which ODOT can use as needed to achieve special objectives.

Assistant Director Mary Ellen Kimberlin and Deputy Directors Walid Gemayel and Mark Kelsey will be responsible for ownership of this initiative. Affected ODOT entities include: Central Office divisions of Construction Management, Highway Operations, and Information Technology; offices of Construction Administration, Structural Engineering, Materials Management, Traffic Engineering, Human Resources, and Labor Relations; and the Major Bridge and Multi-Lane program managers. Also all district Production, Highway Management, Construction, Testing and Materials offices.

Goals

- Incorporate innovative contracting methods to reduce traffic congestion and contract time, and to enhance project quality.

- Create a multi-disciplinary team to develop and implement a Value Engineering (VE) feedback loop to incorporate acceptable VE proposals in ODOT's standard drawings and plans prior to bidding.

- Create a multi-disciplinary team to study the following innovative contracting methods and develop new ones:
  - Setting of project completion dates;
  - No excuse bonus lump sum contracts;
  - A+B contracting, or the bidding both of cost (A) and the time to complete the project (B) considered;
  - A+B-C bidding, or the bidding of project cost (A), plus warranty (B) for the lowest cost, (-C);
  - Liquidated savings, which is a bonus provision equivalent to the liquidated damages;
  - Lane and ramp rental, which gives the contractor only limited days to close ramps or lanes without a penalty, which amounts to a "rental" of the lane or ramp; and
  - Incentive/disincentive, which rewards early completion and penalizes late completion.
2002 Strategic Initiative Ten
Expand Partnering

The department identified contractor partnering as a 2001 strategic initiative. While progress was made on implementing the initiative, it was not completed. The new initiative includes partnering with contractors, consultants and the Federal Highway Administration to improve quality, expedite the project development process and reduce disputes.

The multi-state construction study revealed that other states are far advanced of ODOT in terms of partnering. Other states and private owners have documented that a cooperative relationship based on a shared set of goals for a construction project leads to faster construction and fewer claims.

Partnering is an agreement among the stakeholders that outlines responsibility, lines of communication and a commitment to shared expectation of success. The partnering process gathers all stakeholders together, early in the project, to establish a protocol for communication through a formal agreement. Partnering seeks a win-win situation for ODOT and other stakeholders and is intended to become a standard practice.

Assistant Director Mary Ellen Kimberlin and Deputy Director Walid Gemayel are responsible for ownership of the initiative. Affected ODOT entities include representatives from the Planning, Production, Real Estate and Construction offices. Other stakeholders may include FHWA, consultants, utilities, regulatory agencies, local governments, MPOs and contractors.

Goals

- Complete projects on or before the contact completion date.
- Increase value engineering savings.
- Reduce the number of change orders and construction claims.
- Identify district projects this year with intent to partner all jobs in the future.
- Establish training for all levels of the project administration staff to educate personnel on the initiative.
- Create measurements to track success.
- By the end of FY 2002 the Central Office partnering coordinator will develop a report outlining recommendations.
2002 Strategic Initiative Eleven
ODOT Will Continue to Emphasize Its Snow and Ice Initiative

Snow and ice control will always be a priority for the department. Enhancing the department’s operations in this effort was part of ODOT’s 2001 Strategic Initiatives. This year it remains an initiative with a different focus – to evaluate and implement new materials and technology into the department’s snow and ice control activities.

Through the use of ODOT’s snow spotters program, comprehensive training and thorough equipment checks the department has improved this important operation. ODOT has consistently been commended for its effectiveness in ensuring Ohio’s highways are safe for travel during the winter. However, with increasing demands on time and resources ODOT must continue to search for innovative methods to improve its efficiency in this area.

The department will focus its efforts this year on expanding the use of technology to battle snow and ice. By increasing the use of site-specific information delivered by pavement sensors ODOT will be able to adjust its activities based on data. This data will enable ODOT to improve the efficiency of its work force and materials and maximize the cost effectiveness of the department’s snow and ice control activities.

Last year’s initiative concentrated on increase material options for specific conditions, making operational decisions utilizing pavement conditions and weather information, creating a specific statewide level of service, formalizing a process to equate equipment, facilities and staffing levels for long-range planning and updating snow and ice manuals to include best practices and provide training.

Assistant Director Mary Ellen Kimberlin will be responsible for ownership of this initiative. Affected ODOT entities include: the Division of Highway Operations, Office of Maintenance Administration, and districts.

Goals

- Implementation of material evaluation and treatment guidelines.
- Implementation of complete pavement/weather sensor evaluation and recommend deployment strategy.
- Implementation of computer routing software evaluation and implement resource analysis.
- Implementation of evaluation all equipment for road condition reporting and operational management.