CLARK COUNTY, OHIO

INTERSTATE 70 CORRIDOR STUDY

prepared by
Clark County-Springfield Transportation Coordinating Committee
with
Ohio Department of Transportation
Office of Urban and Corridor Planning
and
District Seven

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The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established planning principles involving the alternative transportation investment analysis requirement for metropolitan area corridors or sub-areas where high cost or high impact transportation solutions are being considered. The U.S. Department of Transportation created the Major Investment Study (MIS) process in the final Metropolitan Planning rules issued October 28, 1993 for implementation of these principles. An MIS is performed where federal funds are potentially involved in the development and construction of major transportation projects of substantial cost and impact. The study defines a transportation system problem or deficiency, suggests possible alternative modal solutions, evaluates the alternatives, and recommends a preferred course of action. The purpose of an MIS is to provide the region's transportation decision makers with a tool to assist in evaluating alternatives to solve the defined problem and to refine the transportation plan. The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in June 1998. The Bill replaced the requirement for a stand-alone major investment study with a directive that such analyses, under the planning provisions of TEA-21 and the National Environmental Policy Act, are to be integrated.

INTRODUCTION

The Interstate, as it is currently configured through Clark County, is quickly becoming an outdated facility. The growth of interstate markets and the central location of this major corridor is important not only to the local economy, but to the state and the nation, as well. It is imperative to ensure this route does not become so congested as to be unusable in the future. A major investment study must be undertaken in order to ensure the best solutions are developed for the limited resources available. Additionally:

- The primary east-west vehicular route across Clark County, the state of Ohio and the nation is Interstate 70. As growth occurs and traffic increases along this extremely important corridor, it is apparent that the roadway designs of the 1950's and 1960's will no longer be sufficient to support the ever increasing needs of the traveling public.
- Interstate 70 is extremely important for the efficient movement of people and goods across the metropolitan planning area, especially for interstate and regional travel. It plays a key role in the development of transportation plans and occupies a primary point of emphasis in the Transportation Improvement Program.
- The agencies responsible for the completion of the Corridor Study are the Clark County-Springfield Transportation Coordinating Committee (TCC), which consists of the staff members of the metropolitan planning organization for the Springfield metropolitan area and the Ohio Department of Transportation .
- The goals of this MIS were to study the Interstate 70 Corridor with an eye to the future and to explore the possibilities for ensuring the adequacy of the corridor for the most efficient possible movement of people and goods.

- The Dayton/Springfield area was a non-attainment area for the pollutant ozone, as set forth in the 1990 Clean Air Act Amendments (CAAA). In July 1995, the area was redesignated to attainment status, and is now a maintenance area. As a consequence of this designation, any transportation improvement recommendation resulting from this MIS must meet the CAAA transportation conformity requirements. The conformity requirements involve a quantitative analysis of the regional emissions that are generated from vehicles traveling over the transportation network. The analysis must demonstrate that the total regional emissions are less than the emission budgets established in the State Implementation Plan for air quality.

PROBLEM STATEMENT

The basic problem which has been identified for the Interstate 70 corridor in Clark County is:

> The current traffic volumes, especially truck volumes, on some sections of Interstate 70 through Clark County, are at unacceptable levels of congestion, especially during the peak hours. Forecasted traffic volumes, based upon current growth rates and future development will result in additional portions of the route experiencing congestion and unacceptable levels of delay.

Study Area

The boundaries of the study area are as follows:

- West – State Route 235
- South – Clark County line/One mile south of Norfolk Southern Rail line
- East – State Route 56
- North – One mile north of US 40

Study Process

The Scoping/Pre-scoping Committee agreed that the study would identify alternatives for the corridor with the overall goal of improving mobility. Public meetings would be held to receive input from the traveling public.

Other studies which have recently been completed demonstrating need and transportation improvements in the study area are as follows:

- Traffic Efficiency and Flow Study (ODOT)
- Freight Study (Reebie & Associates/ODOT)
- Statewide Interstate Rehabilitation Study (ODOT)
- 3C Corridor Study (ORDC)
- Clark County-Springfield 2025 Long Range Transportation Plan

Map 1 Interstate 70 Study Area

The study process for this MIS is outlined below:

1. Examine previous studies that have documented travel demand within the corridor. A significant amount of recent work has examined transportation alternatives covering all or portions of the study area. The conclusions and recommendations from those studies could then be used as major inputs to select a preferred transportation alternative for the current study area.
2. Seek public input at public involvement meetings in the corridor.
3. Incorporate issues from the public involvement meetings into the study.
4. MIS Scoping Meeting to be held with the corridor stakeholders.
5. A preferred alternative to be developed and selected for the corridor by the stakeholders.
6. The process and procedures of the MIS will be distributed as an MIS publication for purposes of fulfilling the intent of the ISTEA legislation. This document describes the MIS process for the I-70 corridor.
7. MIS results will be presented to the Clark County-Springfield Transportation Coordinating Committee for formal adoption and incorporation into the Long Range Transportation Plan.

Land Use Patterns and Trends

The current land use patterns and trends for the study area/region include both commercial and residential growth. Local land use policies are outlined in the Clark County Comprehensive Plan, which was adopted in 1999. It stresses the regional transportation network, linkages between the economy, land use and transportation, annexation, the cost of building and maintaining public infrastructure, urban sprawl, farmland preservation and other socio-economic issues.

Existing and Future Conditions

Interstate 70 is currently configured with 6 lanes from 0.51 miles east of the Montgomery County line to 0.2 miles west of the SR4 ramps. It is configured as 4 lanes throughout the rest of the study area. A project to extend the 6 lane section from 0.2 miles west of the SR4 ramps to the Enon Rd. ramps will be undertaken in SFY2002. There are 10 interchanges within the study area. Traffic counts were taken between each of these interchanges in 1998. There are 21 overpasses and 14 sets of bridges within the study area. A rest area is located at the Clark/Madison County line. This is one of only two rest areas in the western half of the state and is therefore very busy, primarily as a resting place for trucks.

Highways

- Interstate 70 is comprised of a 4.82 mile 6 lane section in the western quarter of the county and a 24.43 mile 4 lane section through the remainder of the county.

- The primary nature of trips on I-70 in the study area consists of through traffic which does not have either an origin or destination in Clark County.
- The 1998 ADT at 9 locations from west to east in the corridor is depicted on map 2 (See table 1 on page 21 for additional information.)
- The 1998 Level of Service of I-70 through the study area is C. Projected declining Level of Service for the year 2025 determinations are depicted in map 3

The parallel route, US40, is configured with 2 lanes from the western edge of the study area to its junction with SR4. It is configured as an urban primary arterial through the city of Springfield. It is then configured with 4 lanes with median to the eastern limit of the study area.

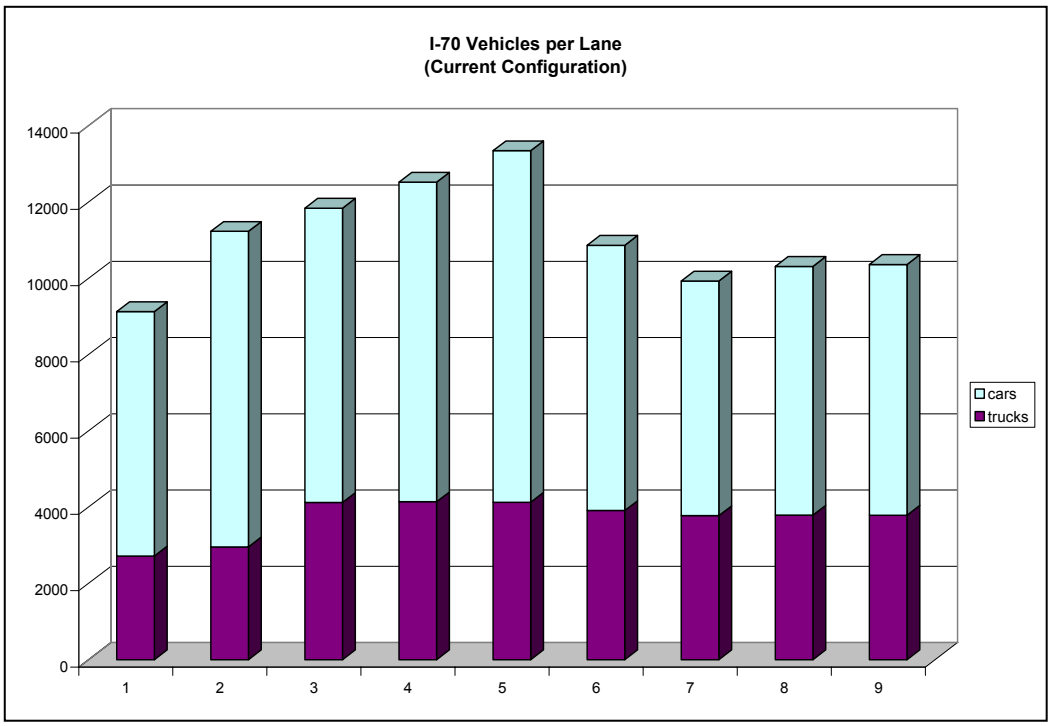

Chart 1 Interstate 70: 1998 Vehicles per Lane, Selected Locations

Transit

Transit is available only in the city of Springfield. It is limited to weekday daytime service. Comparable paratransit services are available throughout the urbanized area. Limited intercity bus service is available in the study area.

Map 2 Interstate 70: 1998 ADT at Selected Locations

COORDINATION ACTIVITIES

Federal planning regulations require Major Investment Studies to be conducted in cooperation with all parties (transportation stakeholders) potentially affected by transportation system investments. When an implementing agency wishes to initiate an MIS, a scoping meeting must be convened, with the regional transportation stakeholders to solicit their involvement in the MIS process. The scoping meeting is "to determine the extent of the analyses and agency roles in a cooperative process which involves the Metropolitan Planning Organization, the state DOT, public transit operators, environmental, resource, and permit agencies, local officials, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), and where appropriate community development organizations and other related agencies. This cooperative process shall establish the range of alternatives to be studied, such as alternative modes and technologies (including intelligent vehicle and highway systems), general alignment, number of lanes, the degree of demand management, and the operating characteristics." (Section 450.318 Metropolitan Planning Regulations, October 28, 1993).

Pre-Scope Meeting

This meeting was held on May 12, 2000, by what is generally considered to be a working group, although the working group is not a required component of the MIS process. Its members were also members of the Scoping Committee. They were from the following organizations: Clark County-Springfield TCC Staff, Ohio Department of Transportation Central Office and District 7 Planning and Environmental staff, Clark County Engineer, and Springfield City Engineer.

The MIS process was discussed and a course of action was established for the accomplishment of the study. The working group established the framework for the MIS and undertook a variety of activities, including the gathering of essential data and information, narrowing the number of alternatives to be analyzed for the MIS, utilizing the attached "Corridor Study Alternatives Work Sheet", conducting the alternatives analyses for the MIS, and other activities that were better accomplished by a small working group. Areas of responsibility were determined with TCC staff members taking the lead. The problem was defined and a formal statement adopted for recommendation.

Scoping Meetings

As cited above, Section 450.318 of the Metropolitan Planning Regulations of October 28, 1993 includes the following as members of a Scoping Committee:
"...the MPO, the State Department of Transportation, public transit operators, environmental, resource and permit agencies, local officials, the FHWA, the FTA,

Map 3 Interstate 70: Level of Service 2025

and where appropriate, community development agencies, major governmental housing bodies, and such other related agencies as may be impacted by the proposed scope of analysis." It goes on to say that a "...reasonable opportunity... shall be provided for citizens and interested parties including affected public agencies, representatives of transportation agency employees, and private providers of transportation to participate in the cooperative process."

The transportation stakeholders in Clark County were invited to attend meetings on August 16, 2000, October 25, 2000, March 9, 2001, and September 14, 2001 to review the MIS process, conclusions, and recommendations and to select a preferred alternative.

- August 16, 2000 Scoping Meeting

A Scoping Meeting was held on August 16, 2000, in the Springfield City Forum. Leaders from communities along the corridor were invited, along with Ohio Department of Transportation Central and District Seven Office's planning staffs, FHWA Ohio Division (representing FHWA and FTA, in this region), and TCC. Displays of the study area depicted railroad crossings, notable features, selected accident locations and car/truck ADT.

Discussion was led by Larry Himes, Transportation Director, TCC and Libby Rushley, ODOT Central Office of Urban and Corridor Planning. It was primarily centered on identifying the range of reasonably available modal alternatives for addressing the transportation system deficiencies identified in the I-70 MIS problem statement. The scoping meeting attendees overwhelmingly agreed that the MIS needed to evaluate the addition of a third I-70 mainline lane through the entire corridor. Ms. Rushley encouraged the scoping meeting attendees to include Travel Demand Management (TDM) strategies, highway operational improvements, and an analysis of transit alternatives in the MIS analysis. The scoping meeting attendees agreed to these suggestions.

A major concern voiced by several meeting attendees was the large percentage of trucks traversing this segment of I-70. Truck traffic is expected to continue to increase because of additional truck terminal activity in the corridor. Some commuters use this corridor, but it does not directly link with the downtown area, or the high retail area on the west side.

In summary, the scoping meeting attendees agreed this MIS will analyze the following modal alternatives to address the transportation deficiencies in the Clark County section of I-70:

1. The addition of a third Interstate mainline lane
2. Travel demand reduction and highway operational management strategies
3. Bus based public transportation service.

- October 25, 2000 Scoping Meeting

A Scoping Meeting was held on October 25, 2000, in the Springfield City Forum. Leaders from communities along the corridor were invited, along with Ohio Department of Transportation Central and District Seven Office's planning staffs, FHWA Ohio Division (representing FHWA and FTA), and TCC.

Discussion was led by Larry Himes, Transportation Director, TCC, Randy Chevalley, ODOT District 7 Planning Office and Libby Rushley, ODOT Central Office of Urban and Corridor Planning. Displays were available depicting level of service, TIP Projects and possible improvements within the corridor.

The draft "Corridor Study Alternatives Worksheet" was distributed for review and comment. Discussion followed and strategies were selected for quantitative analysis: these are the parallel arterial improvements and the general purpose lane addition. From the discussion of other possible improvements within the corridor the following were selected for quantitative analysis: I-70 additional lane, Burnett Road interchange, US40 access management and signal improvements, US40/US68/Upper Valley Pike interchange area, Leffel Lane extension.

The next phase of work consists of the analysis, refinement and evaluation of the alternatives.

- March 9, 2001 Scoping Meeting

A Scoping Meeting was held on March 9, 2001, in the Springfield City Forum. Leaders from communities along the corridor were invited, along with Ohio Department of Transportation Central and District Seven Office's planning staffs, FHWA Ohio Division (representing FHWA and FTA), and TCC.

Discussion was led by Larry Himes, Transportation Director, TCC; Randy Chevalley, ODOT District 7 Planning Office; and Libby Rushley, ODOT Central Office of Urban and Corridor Planning. Displays depicted the alternatives analyzed.

These included:

- I-70 additional lane
- Burnett Road interchange
- US40 access management and signal improvements
- US40/US68/Upper Valley Pike interchange area
- Leffel Lane extension.

It was determined that the Burnett Road interchange would require an Interchange Justification Study. The US40/US68/Upper Valley Pike interchange area also requires additional study beyond the scope of this MIS. Impacts on interstate congestion would be negligible with either of these options, as well as the Leffel Lane extension. While the US40 access management and signal improvements would definitely benefit traffic passing through the city of Springfield, those benefits would likely not be felt on the through interstate traffic.

Exploration of the additional lane will continue.

- September 14, 2001 Scoping Meeting

A Scoping Meeting was held on September 14, 2001, in the Springfield City Building Fourth Floor Conference Room. Leaders from communities along the corridor were invited, along with Ohio Department of Transportation Central Office and District Seven Office's planning staffs, FHWA Ohio Division (representing FHWA and FTA), and TCC. Discussion was led by Larry Himes, Transportation Director, TCC, Randy Chevalley, ODOT District 7 Planning Office and Libby Rushley, ODOT Central Office of Urban and Corridor Planning. Discussion centered on the finalization of the Major Investment Study. The preferred alternative for this study is the addition of a driving lane on those portions of the interstate which do not already have a six lane cross-section. The report will be submitted to the TCC for approval.

Public Involvement and Public Outreach Summary

- Public meetings were held on October 5, 2000, April 5, 2001, and February 7, 2002, for the purpose of presenting the findings and recommendations of the study of the I-70 corridor. These meetings were attended by over 110 people.
- All of these meetings were held in the "open house" format which allowed participants to engage in open dialogue concerning the findings and recommendations of the Scoping Committee.
- The transportation stakeholders reached consensus on the preferred alternative after review of public comment and made recommendations that the MIS document be updated to reflect this decision.

ALTERNATIVES

Alternative strategies and services have been analyzed for their impact on the corridor. These analyses were presented to the scoping committee to assist in the decision-making process. These included the No Build Alternative, Travel Demand Management, Transportation Systems Management, High Occupancy Vehicle Facilities, Transit, and Transportation Network Improvements. A worksheet is included that was used at various points to assess the feasibility of some of the most likely transportation alternatives.

Alternatives Analyses Discussions

Each of the alternatives were explored as a possible remedy for the problem as follows:

- No Build
- Travel Demand Management (TDM)
  - Rideshare
  - Guaranteed Ride Home
  - Park and Ride Facilities
  - Compressed Work Week, Flexible Work Hours & Telecommuting

Nontraditional Transportation Modes

- Transportation Systems Management (TSM)
  - Access Management
  - Intelligent Transportation Systems (ITS)
  - Traffic Control Measures
  - High Occupancy Vehicle Lanes
  - Transit
  - Transportation Network Improvements
- General Purpose Through Lanes

No Build

The No Build alternative would involve retaining the existing four-lane roadway with no improvements other than routine maintenance. As discussed in the Existing Conditions section, some sections of I-70 in Clark County will be operating at LOS F. As traffic volumes continue to increase, congestion, travel time, and accident rates will also increase. Map 3 demonstrates the projected level of service for I-70 for the year 2025 (these are shown on the existing geometry of two lanes in each direction on I-70). Traffic volumes on I-70 are projected to surpass 70,000 Average Daily Traffic (ADT) for some segments by the year 2025, with truck volumes in excess of 15,300 per day, exceeding the I-70 design capacity. For these reasons, it has been determined that the No Build alternative is not desirable.

Travel Demand Management (TDM)

Alternatives to driving alone are being examined, on a more regular basis, to reduce congestion and improve mobility. The process of reducing the amount of vehicle travel is called Transportation Demand Management (TDM). TDM strategies encourage the use of alternatives to driving alone or changing the time of day of the trips. These strategies increase the awareness of the options that are available for making a trip. Most of the time personal vehicle travel is the only means considered for making a trip. Implementation of TDM strategies increase the options available for making a trip. Implementing TDM's may include the following actions:

- Assuring transit serves the person's residence and destination, whether a work trip, a shopping trip, or another type of trip;
- Informing persons of other people who live near them and work near them which might lead to ridesharing;
- Providing the opportunity to telecommute if one's job is adaptable to telecommuting;
- Instituting alternative or flexible work hours to make it more convenient to use transit, a rideshare arrangement or to travel during less congested hours;
- Providing and maintaining sidewalks and bicycle facilities for short trips.

Incentives or disincentives can be provided which encourage the switch from single occupant vehicle (SOV). These TDM strategies include parking fees, vehicle operating cost increases, or subsidies for using non-SOV modes. If properly packaged, these incentives can benefit employers as well as the employees who choose to not use an SOV.

TDM strategies focus primarily on reducing work travel. It is easiest to focus strategies on work trips because they are made at regular times of day and have consistent destinations. The peak congestion periods usually occur during the morning and afternoon work commute times. Approximately one-third of vehicle miles of travel (VMT) are the result of work trips. During peak periods, 50 percent or more of the traffic is work-commute travel. Focusing TDM strategies on work trips provides options for the single largest segment of travel and the travel that contributes over half of the peak-period congestion. Certain TDM strategies can also reduce other travel as well. Bicycle and pedestrian facilities as well as transit service serve more than just work trips.

Rideshare

As a part of our region's transportation planning program, the Rideshare Program cites a commitment to the national objectives of energy conservation, improved air quality, reduced traffic congestion and lower commuting costs. It offers a variety of programs and services including carpool and vanpool assistance, guaranteed ride home programs, transit authority general route and park-and-ride information, and employer programs and services. The program works with companies and organizations to promote ridesharing and provide services including computerized ridematching services, vanpool operations, organizing in-house rideshare campaigns and administering employee transportation surveys.

Ridesharing promotions often target work shifts because the majority of traffic congestion, air quality, and safety problems occur during peak hour travel. While this TDM strategy may not target the study corridor specifically, carpools and vanpools may use the corridor. Historically, a successful rideshare program by itself will not provide sufficient relief from the current and projected congestion levels. However, a rideshare program can provide an effective supplement to a preferred alternative in relieving congestion levels.

Guaranteed Ride Home

One drawback of ridesharing or using transit is the possibility that a commuter will be stranded due to an emergency or an unplanned schedule change. This could

cause a person to miss the bus or his/her rideshare arrangement. A guaranteed ride home program raises the comfort level of ridesharers by providing transportation home should such a schedule change arise. The TCC administers a guaranteed ride home program. There is no cost to sign up for the program.

The impacts of a Guaranteed Ride Home program on VMT are difficult to quantify. Guaranteed ride home works in conjunction with other ridesharing strategies to increase the effectiveness of the programs.

Park and Ride Facilities

Park and Ride facilities provide a location where motorists can park their vehicles to form carpools or vanpools. There are facilities within the corridor located at the SR 54 and SR72 interchanges.

Compressed Work Weeks, Flexible Work Hours, and Telecommuting

Flexible work hours, as well as staggered work hours and compressed work weeks could be initiated by employers with no other support. Flexible work hours provide the opportunity to alter individual starting and ending times to better match transit schedules or ridesharing arrangements. Staggered work hours alter the standard starting and ending times for all or groups of employees which allow the employees to make trips outside of the peak periods. Compressed work weeks lengthen the work day, shifting one or more of the trips outside of the peak period and reducing the number of trips per week the employee makes to work. These strategies have been implemented by Wright Patterson Air Force Base for many of their employees.

Implementation of these strategies primarily shifts VMT from peak periods to off-peak periods. Therefore, total VMT per day is not significantly decreased. These strategies are best suited for areas with short peak periods. As the congested peak period becomes longer, it may not be possible to adjust work times enough so travel takes place during a less congested time.

Telecommuting allows an employee to work from home, eliminating the need to make the trip to work. As with alternative work schedules, telecommuting's effectiveness depends on the number of employees eligible to telecommute.

Nontraditional Transportation Modes

Nontraditional Transportation Modes, such as bicycling and walking, are often overlooked as viable commuter alternatives in the United States. A regional bicycle transportation plan may serve as a tool to assist bicyclists, organizations, and

communities in bicycle facility planning. The plan should serve as a guide for future facility improvements for local jurisdictions. The plan should be consulted and bicycle facilities incorporated, when appropriate, during land development and roadway improvements. It should be the overall framework for a bikeway system that integrates and enhances the local and regional transportation systems. The plan should identify north-south and east-west corridors that serve the region and provide connectivity to transit, park-and-ride lots, major traffic generators, activity centers, and communities.

The impact of bicycle facilities on corridor congestion is difficult to quantify and probably minimal. However, safe biking environments increase mobility for some segments of the population and provide another travel option for the corridor. When linked to transit facilities, improving bicycle facilities can further encourage transit use. To create a biking environment, it is not necessary to build bike paths and bike lanes throughout the corridor. Steps, however, should be taken to consider designs which facilitate bike use and provide locations to park bikes. Pedestrian facilities provide another option to trip makers. The choice to walk can be made for all trip purposes. Pedestrian facilities can also influence transit usage. At least one end of a transit trip includes a pedestrian trip. Without adequate pedestrian facilities to and from transit stops, transit will not be used. Pedestrian trips currently account for a small percentage of corridor trips.

The impacts on corridor congestion and mobility through improvements to pedestrian facilities cannot be quantified. The expected impacts would be slight and would not eliminate the need to make the majority of the trips via motorized vehicles. These improvements encourage pedestrian trips, increase pedestrian safety and promote transit use.

TDM strategies, such as alternative work hours, telecommuting, and parking management are employer-based. While these strategies may be further initiated at some future time by employers in the region, they are not expected to have significant impact on the corridor. The percentage of through and truck trips in the corridor suggests that employer-based TDM measures will not sufficiently reduce work trips enough to mitigate peak hour congestion through the corridor. Therefore, these strategies are not alternatives which solve the capacity problem in this corridor.

Transportation Systems Management (TSM)

The TDM strategies discussed earlier dealt with vehicle reduction measures.

Other operational improvement strategies include Transportation System Management (TSM) measures which relate to capacity enhancement. These TSM measures can range from relatively minor expenditures (with little or no construction) to those involving major expenditures and construction. There is a variety of options available which can be implemented in the corridor to increase capacity. Access Management, Intelligent Transportation Systems, and Traffic Control Measures are three such activities which are being promoted in the corridor.

Access Management

Access Management is a systematic process to maintain the safe, efficient use of a road while providing necessary and appropriate access to adjacent land. All roads are arranged in a hierarchy based on their function. Access levels are defined for the frequency, spacing, and type of access permitted and are adjusted for each class to maintain the desired traffic flow characteristics of capacity, operating speed, and safety. Higher classes, such as arterials, have stricter standards and policies to maintain greater mobility. Lower classes, such as collectors, have lower standards to permit greater access. Access management focuses on the service to be provided and brings together land use, transportation planning, design, and traffic engineering decisions as components of an integrated process to maintain that service.

Studies across the country have highlighted the benefits of access management. Good access management practices can increase operating speeds, increase traffic carrying capacity, and reduce the accident rate on managed highways compared to an unmanaged facility. Even on highly congested urban arterials with high traffic volumes and poor levels of service, applying access management techniques can substantially increase the maximum daily traffic flow.

Access management is an important planning consideration because of increasing traffic congestion, traffic safety issues, and the rising costs of road improvements. Good access management can:

- Reduce crashes and crash potential
- Preserve roadway capacity and the useful life of roads
- Decrease travel time and congestion
- Improve access to properties
- Coordinate land use and transportation decisions
- Improve air quality
- Maintain travel efficiency and related economic prosperity.

While an Access Management study has been conducted in the study area and techniques have been applied and will continue to be used to reduce and/or prevent congestion on parallel and cross routes, no additional techniques would have direct impact on preserving mobility and decreasing congestion on the Interstate itself.

Intelligent Transportation Systems (ITS)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) provided for the establishment of the Intelligent Transportation System (ITS) program. ITS is the application of electronic, computer, and communications technology to vehicles and roadways to increase safety, reduce congestion, enhance mobility, minimize environmental impact, increase energy efficiency, and promote economic productivity for a healthier economy.

Application of ITS technologies enables the existing physical transportation capacity to be used more efficiently and effectively. While many systems already in place have been operational for only a few years, there are indications that programs such as freeway management systems can increase safety by reducing accidents and minimize travel times by providing real-time information for travelers' use.

Freeway Management Systems (FMS) have been initiated in several Ohio cities, including Cincinnati and Columbus. Goals of this type of system include:

- optimize traffic flow through the roadway system
- detect and speed up the handling of traffic incidents
- provide motorists and the public with real time traffic information
- improve air quality by reducing recurrent congestion and decreasing the time to clear an incident.

An important component of an FMS is incident management. Through the use of incident detection algorithms and video cameras, incidents can be identified and cleared in less time, thereby minimizing congestion due to the incident while improving overall safety. Traffic operating at a LOS C or D is less dense than LOS E or F and therefore able to recover quicker from incidents resulting in less congestion and delay on the freeway system.

It is still too early in the evolution and adaptation of this technology to consider ITS as a viable single alternative to the congestion problems in this corridor. However, ITS should be included as an important component of a total congestion relief system for the region.

Traffic Control Measures

Traffic control measures range from relatively low cost remedies requiring little or no construction to major projects which develop the maximum capacity of the surface street system. They include the following:

- Turning movement controls at intersections such as prohibition of left turns, provision of left-turn-only lanes, and the provision of left-turn signal phases on two-way streets.
- Turning movement controls at mid-block locations such as limiting the number of driveways, restricting certain driveways to right turns in and out, and requiring the provision of left- and right-turn lanes at driveways serving major traffic generators.
- Widening constricted sections of the roadway by applying the standards of the neighboring sections.
- Widening of intersection approaches to provide additional through or turning lanes.
- Elimination of offset (dog-leg) intersections to improve traffic movements and minimize signal clearance time.
- Provision of permanent physical channelization or barriers at intersections to ensure orderly traffic flow, and along roadways to restrict turning maneuvers.
- Upgrading signalization by replacing outmoded traffic signals with new, modern signal equipment to optimize signal efficiency and permit coordinated traffic-responsive signal progression.
- Reconstruction of at-grade intersections to permit widening, the installation of efficient turning lanes and channelization, and improvement of alignment.

While these traffic control measures are useful for non-interstate applications, they will do little to provide a reasonable alternative for the I-70 corridor

High Occupancy Vehicle Lanes

High Occupancy Vehicle (HOV) lanes are highway lanes designed for the exclusive use of vehicles with more than one occupant. HOV lanes are defined as facilities to maximize person movement on roadways by increasing the average number of persons per vehicle. HOV lanes allow buses and carpools to bypass delay during congested periods, increasing the attractiveness of alternatives to traveling alone. These lanes are usually added to Interstate routes. HOV lanes may be restricted to buses only, two or more persons per vehicle, or three or more persons per vehicle. This is determined by the agencies involved in the HOV designation.

To attract HOV users, an HOV lane must provide at least a five to eight minute travel time savings. Any shift in travel from SOV to HOV would reduce total traffic, but in reality, not all eligible HOV's may use the HOV lane. Although HOV's would experience improved level of service within any one particular section, the majority of travelers would experience worse levels of service with an HOV lane than with adding a general purpose lane. While a more elaborate HOV configuration may draw more traffic, the costs would dramatically increase. For HOV operation to be more effective, a regional approach to the issue should be taken. Also, HOV lanes are most effective when they connect two major activity centers. These centers are currently not present. Therefore, an HOV facility would not divert a sufficient number of trips away from the existing lanes to achieve an acceptable solution.

Transit

The basic goal in examining the transit option is to reduce the number of single occupant vehicles and increase the level of service through a corridor. The latent demand for transit service in a corridor will dictate ridership much more so than the number of buses made available. Typically, transit accounts for a less than one percent mode split during the peak period in small urban areas. Typically, the number of people who will chose transit without some type of disincentive to driving alone, such as higher parking costs or limits on parking availability, is low. Transit will have little to no impact on the congestion in the corridor due to the number of through trips.

Transportation Network Improvements

It may be prudent to evaluate various surface street improvements considered or proposed within the study area by the Ohio Department of Transportation (ODOT) and county and local agencies and officials. The various projects can be analyzed, focusing on travel demand model results, environmental considerations, and costs. While these improvements will be locally significant, they will not alleviate the congestion on the interstate.

70 General Purpose Through Lanes

The addition of general purpose through lanes would reduce projected congestion by providing more highway capacity, reduce travel time, increase the level of service, and improve safety in the corridor. The lanes could be added in the existing right of way, which will limit the cost. This alternative alleviates a significant amount of congestion as shown in Tables 1 and 2. Of primary concern is the benefit to freight movement through the corridor. No other alternative addresses the needs of the

regional and national truck traffic which uses this corridor for the delivery of goods. The high percentage of through trips, for both cars and trucks, will be positively impacted by this alternative. This can therefore be considered a viable alternative.

Interstate 70 Daily Traffic Counts (1998)										
Location	Current lanes	Total count	Total per lane	Cars	Cars per lane	Trucks	Trucks per lane	Total per lane with upgrade	Cars per lane with upgrade	Trucks per lane with upgrade
1	6	54,770	9,128	38,460	6,410	16,310	2,718	9,128	6,410	2,718
2	6	67,390	11,232	49,640	8,273	17,750	2,958	11,232	8,273	2,958
3	4	47,350	11,838	30,870	7,718	16,480	4,120	7,892	5,145	2,747
4	4	50,080	12,520	33,520	8,380	16,560	4,140	8,347	5,587	2,760
5	4	53,380	13,345	36,870	9,218	16,510	4,128	8,897	6,145	2,752
6	4	43,460	10,865	27,820	6,955	15,640	3,910	7,243	4,637	2,607
7	4	39,710	9,928	24,610	6,153	15,100	3,775	6,618	4,102	2,517
8	4	41,250	10,313	26,090	6,523	15,160	3,790	6,875	4,348	2,527
9	4	41,440	10,360	26,290	6,573	15,150	3,788	6,907	4,382	2,525

Table 1 I-70 ADT Current & Future Configuration

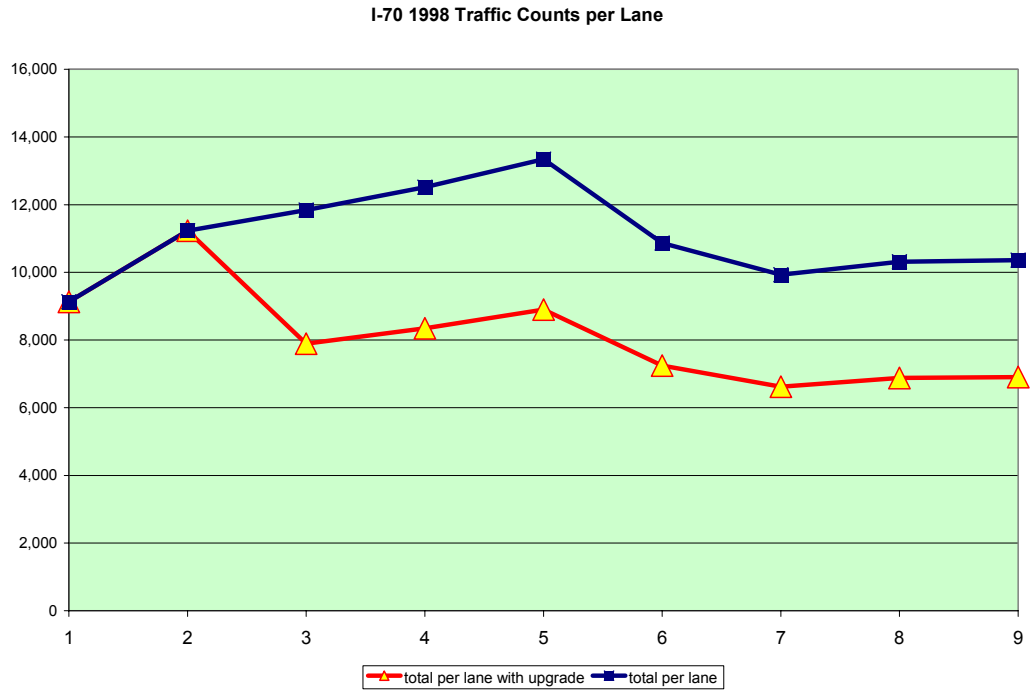

Chart 2 I-70: Current Traffic Counts per Lane/Existing & Future Configuration

Interstate 70 Projected 2025 ADT							
Location	current # lanes	1998 total count	1998 total per lane	1998 total per lane with upgrade	2025 total count	2025 total per lane	2025 total per lane with upgrade
1	6	54,770	9,128	9,128	78,321	13,054	13,054
2	6	67,390	11,232	11,232	96,368	16,061	16,061
3	4	47,350	11,838	7,892	67,711	16,928	11,285
4	4	50,080	12,520	8,347	71,614	17,904	11,936
5	4	53,380	13,345	8,897	76,333	19,083	12,722
6	4	43,460	10,865	7,243	62,148	15,537	10,358
7	4	39,710	9,928	6,618	56,785	14,196	9,464
8	4	41,250	10,313	6,875	58,988	14,747	9,831
9	4	41,440	10,360	6,907	59,259	14,815	9,877

Table 2 I-70 Current and Projected ADT

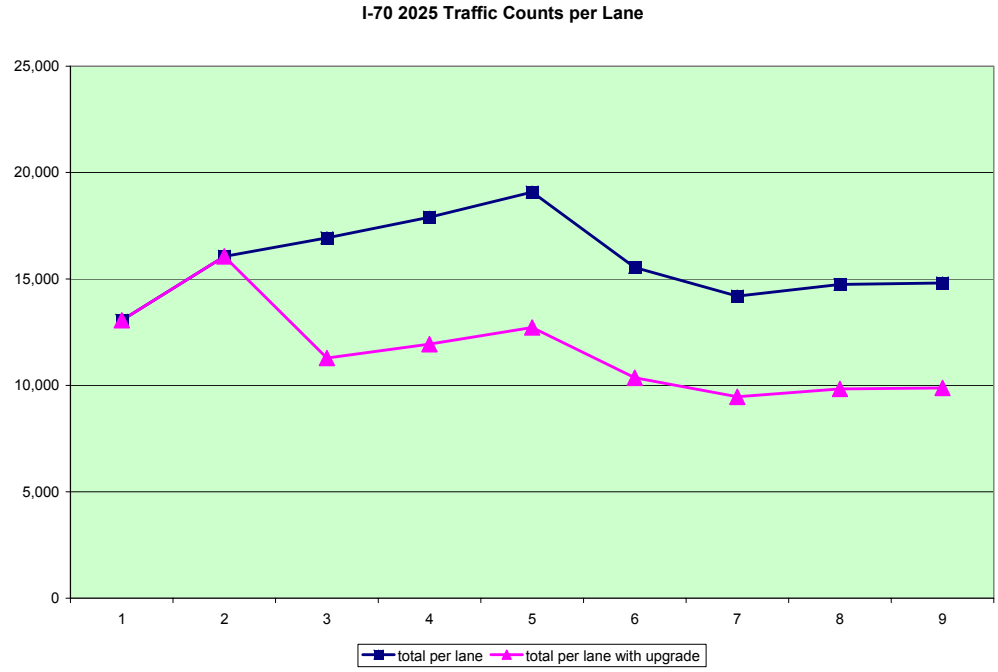

Chart 3 I-70: Projected Traffic Counts per Lane/Existing & Future Configuration

PREFERRED ALTERNATIVE

The Preferred Alternative for the Interstate 70 Corridor has been determined to be the addition of General Purpose Through Lanes.

- After examining each alternative separately and the cumulative effects on service to the corridor of the lower cost alternatives, the preferred alternative was agreed to and subsequently proposed by the Scoping Committee.
- The preferred alternative and the rationale for it being proposed as the preferred alternative was based upon the most realistic estimate of benefits to the corridor over the next 25 years.
- Additional lanes are being planned in Montgomery and Madison counties. The reconstructed I-70/I-75 interchange in Montgomery County will impact the corridor through Clark County.
- Cost estimates for construction and maintenance of this alternative would allow the additional lanes to be phased over a 10 year period with a total cost of $61,514,000. The length of the proposed improvement would be 26.62 miles. No additional right of way would be required to complete this project.

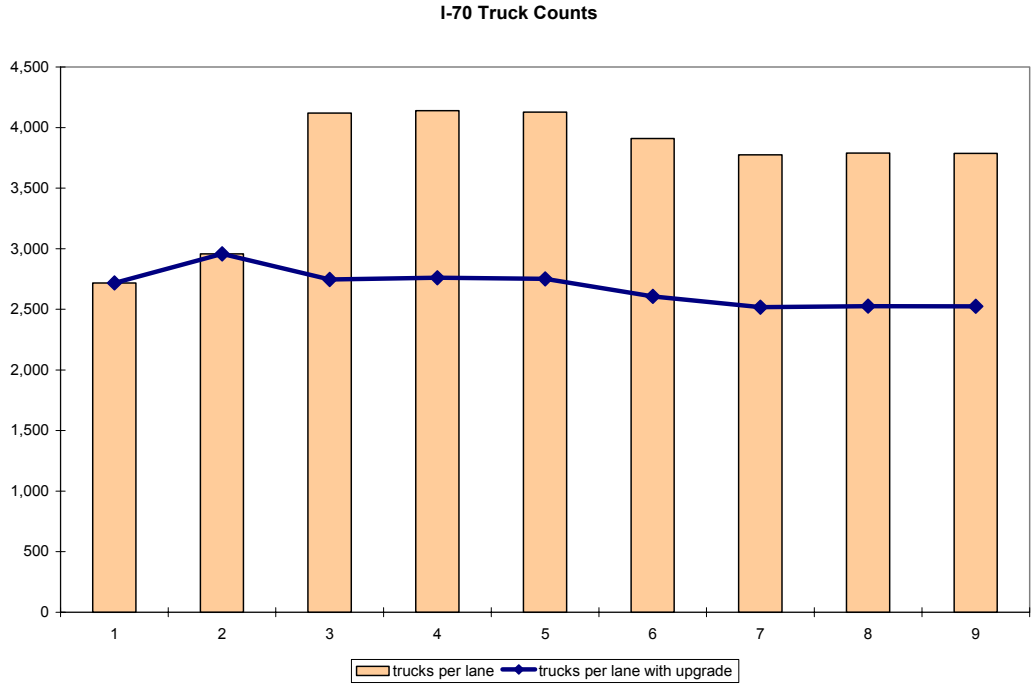

Chart 4 I-70 Trucks per Lane/ Current & Future Configuration

Additional Items for Further Study

As a result of the Corridor Study, there were items which were determined to a have little impact on the operation of the interstate, but were still considered to be important to the area.

- A new interchange at Burnett Road will require an Interchange Justification Study before any conclusions can made whether it is needed or not. Since this project would require a minimum of fifty percent, and possibly total local funding, the study will also need to determine if it will be cost effective. The study will need to be accomplished no later than 2004 to ensure adequate time for preparation in the event the interchange is found to be necessary to match with the timeline for the preferred alternative.
- The US68/US40/SR4/Upper Valley Pike interchange/ intersection will require further study to find the best solution for the increasing congestion.
- The extension of Leffel Lane to Dayton Road from its current terminus at Springfield-Xenia Road will need to be studied in conjunction with projected changes in land use.
- Passive railroad crossings (3) need to be upgraded in the corridor.
- A Corridor Management Plan for US40 is being undertaken as part of the Ohio National Road Scenic Byway. This plan will address many key issues in the parallel corridor, including a bikeway as a part of the National Road. Recommendations of the Plan will be evaluated for future implementation.
- The ITS Early Deployment Plan was completed in 1997. Many recommendations are still undergoing development and study. These include the Motorist Information System and Incident Management.
- A portion of the Access Management Plan will be implemented in Springfield on E. Main St. (US40) with coordinated signal system upgrades. These improvements to the parallel route will be undertaken in 2004. Impacts of the improvements will be further studied after completion.

Map 4 Interstate 70: Proposed Construction Schedule

Corridor Study Alternatives Work Sheet

	CORRIDOR EFFECTIVENESS	POLITICAL FEASIBILITY	QUANTITATIVE ANALYSIS RECOMMENDED	SUPPLEMENT TO PREFERRED ALTERNATIVE
	SELECT		SELECT	
	LOW/MED/HIGH	LOW/MED/HIGH	YES/NO	YES/NO
1 Transportation Demand Management Strategies				
i. Car and Van Pooling	L	M	N	
ii. Alternative Work Hours	L	L	N	
iii. Telecommuting	L	L	N	
iv. Parking Management	L	L	N	
v. Employer Trip Reduction Ordinances	L	L	N	
vi. Congestion Pricing	L	L	N	
2 Transportation System Management Techniques				
i. Ramp Metering	L	L	N	
Parallel Arterial Improvements				
i. Computerized Signal Systems	L	H	N	
ii. Upgrade Parallel Facilities	L	M	Y	
iii. Access Management	M	L	N	
iv. Traffic Surveillance and Control Systems	L	L	N	
v. Motorist Information Systems	L	L	N	
vi. Traffic Control Centers	L	L	N	
3 Measures to Encourage High Occupancy Vehicles				
i. HOV Lanes	L	L	N	
ii. HOV Ramp Bypass Lanes	L	L	N	
iii. Guaranteed Ride Home Programs	L	L	N	
4 Public Transit Capital Improvements				
i. Exclusive Rights-of-Way --Rail, Busways, Buslanes	L	L	N	
ii. Bus Bypass Ramps	L	L	N	
iii. Park and Ride and Mode Change Facilities	L	M	N	
iv. Paratransit Services	L	L	N	
5 Public Transit Operational Improvements				
i. Service Enhancement/Expansion	L	M	N	
ii. Traffic Signal Preemption	L	L	N	
iii. Fare Reductions	L	L	N	
6 Measures to Encourage the Use of Nontraditional Modes				
i. Bicycle Facilities	L	M	N	
ii. Pedestrian Facilities	L	L	N	
7 Growth Management and Activity Center Strategies	M	M	N	
8 Incident Management	M	M	N	
9 Intelligent Vehicle Highway System and Advanced Public Transportation System Technology	L	L	N	
10 General Purpose Lane Addition	H	H	Y	

Sec. 450.318 Metropolitan transportation planning process: Major metropolitan transportation investments.

(a) Where the need for a major metropolitan transportation investment is identified, and Federal funds are potentially involved, major investment (corridor or subarea) studies shall be undertaken to develop or refine the plan and lead to decisions by the MPO, in cooperation with participating agencies, on the design concept and scope of the investment. Where the studies have not been completed prior to plan approval, the provisions of Sec. 450.322(b)(8) apply.

(b) When any of the implementing agencies or the MPO wish to initiate a major investment study, a meeting will be convened to determine the extent of the analyses and agency roles in a cooperative process which involves the MPO, the State department of transportation, public transit operators, environmental, resource and permit agencies, local officials, the FHWA and the FTA and where appropriate community development agencies, major governmental housing bodies, and such other related agencies as may be impacted by the proposed scope of analysis. A reasonable opportunity, consistent with Sec. 450.316(b)(1), shall be provided for citizens and interested parties including affected public agencies, representatives of transportation agency employees, and private providers of transportation to participate in the cooperative process. This cooperative process shall establish the range of alternatives to be studied, such as alternative modes and technologies (including intelligent vehicle and highway systems), general alignment, number of lanes, the degree of demand management, and operating characteristics.

(c) To the extent appropriate as determined under paragraph (b) of this section, major investment studies shall evaluate the effectiveness and cost-effectiveness of alternative investments or strategies in attaining local, State and national goals and objectives. The analysis shall consider the direct and indirect costs of reasonable alternatives and such factors as mobility improvements; social, economic, and environmental effects; safety; operating efficiencies; land use and economic development; financing; and energy consumption.

(d) These major investment studies will serve as the "alternatives analyses" required by section 3(i)(1)(A) of the Federal Transit Act (49 U.S.C. app. 1602(i)) for certain projects for which discretionary section 3 "New Start" funding is being sought. The studies will also be used as the primary source of information for the other section 3(i)(1)(A) Secretarial findings on cost-effectiveness, local financial commitment and capacity, mobility improvements, environmental benefits, economic development, operating efficiency, etc.

(e) These major investment studies also will, when appropriate, serve as the analysis of demand reduction and operational management strategies pursuant to 23 CFR 500.109(b).

(f) A major investment study will include environmental studies which will be used for environmental documents as described in paragraphs (f)(1) and (2) of this section:

(1) As a minimum the participating agencies will use the major investment study as input to an environmental impact statement or environmental assessment prepared subsequent to the completion of the study. In such a case, the major investment study reports shall document the consideration given to alternatives and their impacts; or

(2) The participating agencies may elect to develop a draft environmental impact statement or environmental assessment as part of the major investment study. At any time after the completion of the study and the inclusion of the major transportation investment in the plan and the TIP the participating agencies may request the development of final environmental decision documents required under NEPA for such major transportation investments, culminating in the execution of a Record of Decision or Finding of No Significant Impact by the FHWA and/or the FTA.

(g) Major investment studies may lead to decisions that modify the project design concept and scope assumed in the plan development process. In this case, the study shall lead to the specification of a project's design concept and scope in sufficient detail to meet the requirements of the U.S. EPA conformity regulations (40 CFR Part 51).

(h) Major investment studies are eligible for funds authorized under sections 8, 9 and 26 of the Federal Transit Act (49 U.S.C. app. 1607, 1607a, and 1622) and planning and capital funds apportioned under title 23, U.S.C., and shall be included in the UPWP. If CMAQ, STP, NHS, or other capital funds administered by the FHWA are utilized for this purpose, the study must also be included in the TIP.

(i) Where the environmental process has been completed and a Record of Decision or Finding of No Significant Impact has been signed, Sec. 450.318 does not apply. Where the environmental process has been initiated but not completed, the FHWA and the FTA shall be consulted on appropriate modifications to meet the requirements of this section.

MIS Scoping Committee Members List

Federal planning regulations require the MIS to be conducted in cooperation with all parties (transportation stakeholders) potentially affected by transportation system investments. When an MIS is initiated, a scoping meeting must be convened, with the regional transportation stakeholders to solicit their involvement in the MIS process.

Parties included on the Scoping Committee include:

Clark County-Springfield Transportation Coordinating Committee
ODOT Office of Urban & Corridor Planning
ODOT District 7 Office of Planning
ODOT Office of Environmental Services
Ohio EPA Divisions of Surface Water/ Division of Air Pollution Control
Ohio Department of Agriculture
Ohio Department of Development
Ohio State Historic Preservation Office
Ohio Department of Natural Resources
Ohio Highway Patrol
Federal Transit Authority
Federal Highway Administration
US Army Corps of Engineers
US Environmental Protection Agency
US Department of Agriculture
US Department of Housing & Urban Development
US Department of Fish & Wildlife
Clark County Commissioners
Clark County Engineer's Department
Clark County Office of Emergency Management
Clark County Planning Commission
City of Springfield
City of New Carlisle
Springfield City Area Transit