TRANSPORTATION FOR PROGRESS 2040

LCATS Long-Range Multi-Modal Transportation Plan

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For Licking County

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Table of Contents

INTRODUCTION **6**
PURPOSE OF THE LONG RANGE TRANSPORTATION PLAN 6
ROLE OF THE METROPOLITAN PLANNING ORGANIZATION 6
ORGANIZATION OF LCATS 8

GOALS, OBJECTIVES AND PERFORMANCE MEASURES **11**
FAST Act NATIONAL GOALS 11
LCATS GOALS & OBJECTIVES 12
PERFORMANCE MEASURES 13
APPLICATION IN ACTION 13

COMMUNITY PROFILE **15**
PEOPLE 15
TRAVEL PATTERNS 20

Major Commuter Route Volumes **21**
..... 23

ECONOMIC DEVELOPMENT ***28***
ECONOMICALLY DRIVEN TRANSPORTATION PROJECTS within Licking County 29
TRANSPORTATION AS AN ECONOMIC FORCE 30

Roads: **32**

Bridges: **33**

Road & Bridges: **33**
BUSINESS AND INDUSTRY IN LICKING COUNTY 33
ECONOMIC ASSETS OF LICKING COUNTY 35
ECONOMIC DEVELOPMENT RESOURCES 38

SAFETY **42**
SAFETY PLANNING 42
SAFETY EDUCATION 44
URBAN vs. RURAL CRASH TRENDS 47

SECURITY **47**
HIGHWAY 50
TRANSIT AND PEOPLE MOBILITY 55
BICYCLE AND PEDESTRIAN 64
RAIL 71
AIR 75
FREIGHT 78
CONGESTION & TRAVEL DEMAND MANAGEMENT 79
PURPOSE OF THE ITS PLAN 82
BENEFITS OF AN ITS 83
KEY STAKEHOLDERS 83
TRAFFIC OPERATIONS 84
ITS PROJECTS 84

ITS AGREEMENTS AND UPDATES 89

ENVIRONMENTAL CONSIDERATIONS 90

PROJECT DEVELOPMENT PROCESS 90

ENVIRONMENTAL PROJECTS 91

ENVIRONMENTAL JUSTICE 105

FINANCIAL ANALYSIS 106

FINANCIAL CONSTRAINTS 107

AVAILABLE FUNDING RESOURCES 107

INNOVATIVE FUNDING OPPORTUNITIES 122

FUTURE OF TRANSPORTATION FUNDING 125

PROJECT LISTINGS 127

LCATS FEDERAL FUNDED PROJECTS 127

Place PDF Project List hereOTHER FEDERALLY FUNDED PROJECTS 130

REGIONALLY SIGNIFICANT UNFUNDED PROJECTS 133

Glossary 141

APPENDIX I-STAKEHOLDER INPUT & PUBLIC COMMENTS 144

APPENDIX II - AIR QUALITY 145

APPENDIX III - ENVIRONMENTAL JUSTICE 146

This document was prepared in cooperation with The United States Department of Transportation's Federal Highway Administration and Federal Transit Administration, the State of Ohio's Department of Transportation, and the local communities (i.e. Licking County, the cities of Newark and Heath, and the Villages of Granville and Hebron)

The contents of this report reflect the views of the Licking County Area Transportation Study, which is responsible for the facts and accuracy of the data presented. The contents do not necessarily reflect the official view and policies of the State of Ohio's Department of Transportation and/or the United States' Department of Transportation. This report does not constitute a standard specification or regulation.

Acknowledgements

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The many citizens and public officials of the community that supplied input, comments, project ideas, information and support in the development of this long range multi modal transportation plan.

The LCPC staff for their dedication and patience in helping to compile data, information, editing and review of this document. Your help, support and teamwork are greatly appreciated.

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INTRODUCTION

PURPOSE OF THE LONG RANGE TRANSPORTATION PLAN

On December 4, 2015, President Barack Obama signed into law the Fixing Americas Surface Transportation Act, or FAST Act. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for the Department's highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology and statistics programs..

The FAST Act requires the development and update of a long-range transportation plan addressing no less than a 20-year planning horizon. The transportation plan shall include both long-range and short-range strategies / actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand; including pedestrian and bicycle considerations.

The purpose of the long-range transportation plan is to describe the transportation improvements envisioned for the next twenty years. It serves as a guide for the LCATS Policy Committee in making decisions regarding transportation improvements within the LCATS Service area.

Federal Transportation Legislation requires an approved Long-Range Transportation Plan in order to receive federal transportation funding.

ROLE OF THE METROPOLITAN PLANNING ORGANIZATION

History of MPOs

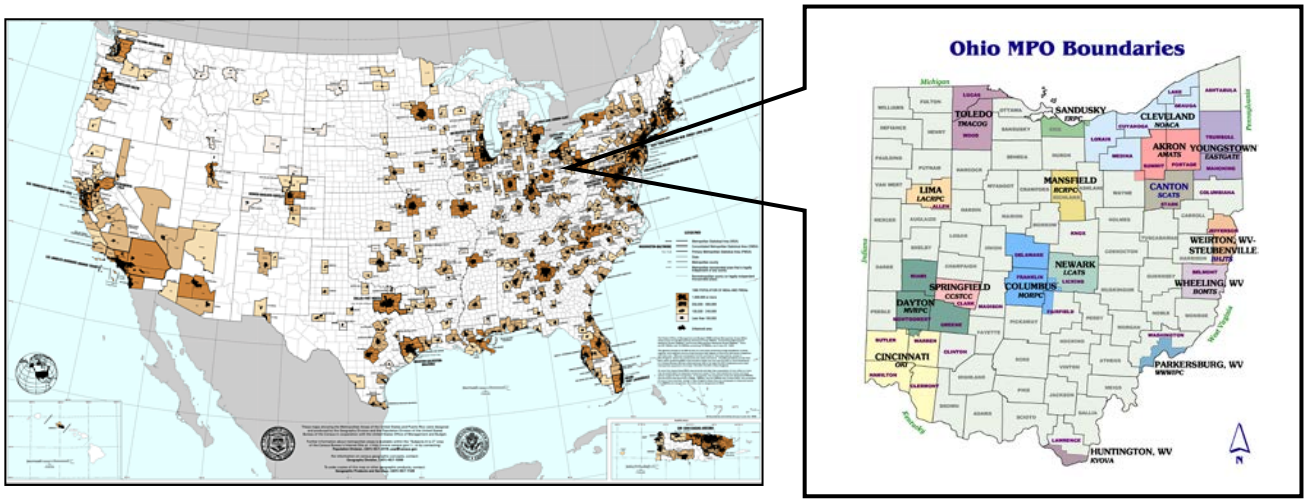
In the early 1970s, the United States Congress passed legislation that required the formation of an MPO for any Urbanized Area (UZA) with a population greater than 50,000. Congress created MPOs in order to ensure that existing and future expenditures for transportation projects and programs are based on a continuing, cooperative and comprehensive ("3-C") planning process.

- The term *continuing* reflects the ongoing nature of the planning process. MPO planning programs are routinely updated to address current and future socio-economic and environmental conditions impacting regional transportation conditions.
- *Cooperative* references the effort to include all regional transportation stakeholders (public, private, and governmental) in the MPO transportation decision-making process.
- *Comprehensive* means the MPO planning programs address persons and goods movement for all transportation modes.

The premise behind the federal planning regulations is that the complexity of transportation problems, the range of potential solutions, and the number of agencies involved in operating and maintaining transportation systems in urbanized areas requires an enhanced level of coordination and cooperation among the area's transportation

stakeholders. MPOs provide a forum where regional transportation stakeholders collaboratively assess regional transportation issues and identify optimal solutions meeting the area's travel needs.

Federal funding for transportation projects and programs are channeled through this planning process. In 2005, there were 385 MPOs in the U.S. Based on the 2010 census there are now 36 more MPO's, bringing the national total to 421. The collaborative planning efforts that occur within MPO's are vital to developing a seamless transportation system for urbanized areas.



Primary MPO Planning Documents

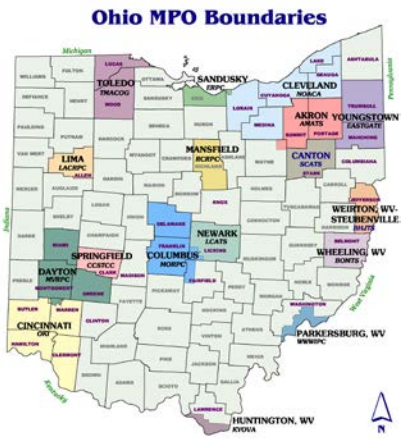
Transportation Plan - The formal MPO planning document describing the transportation policies, programs, and projects needed to facilitate the efficient movement of persons and goods within and through the region for 20 years into the future. Plan development includes consideration of the interrelationships among transportation systems, land use, and the social, economic, and natural environments. The plan must address all transportation modes, and be fiscally constrained. Transportation Plans in air quality areas must also demonstrate transportation conformity with the official State plan for meeting and maintaining national air quality standards.

Transportation Improvement Program (TIP) - A listing of the specific transportation system improvement projects scheduled for implementation within the MPO boundary over the next four years. All projects financed with US DOT surface transportation funding, regardless of project sponsor, must be listed in the MPO TIP. Projects must be consistent with the MPO's Transportation Plan. Project information includes project phase, federal funds type, and costs by Federal, State, and local participation rates. ODOT practice is to also include 100% State funded projects into TIPs. MPO TIPs are directly incorporated into the State TIP (STIP). See http://www.dot.state.oh.us/planning/STIP/Stip.htm for additional Ohio STIP/TIP information.

ORGANIZATION OF LCATS

LCATS, an MPO

The Licking County Area Transportation Study, LCATS is a Metropolitan Planning Organization (MPO) for the Newark OH Urbanized Area. LCATS is one of seventeen (17) MPOs in Ohio.



A metropolitan planning organization (MPO) is a transportation policy-making committee that States' Governor formally designates as the body responsible for conducting an urbanized area's transportation planning process. In Ohio, this committee is typically referred to as a Policy Committee. At a minimum, the Policy Committee is comprised of:

- Local elected officials
- Operators of major modes of transportation, and
- State transportation officials

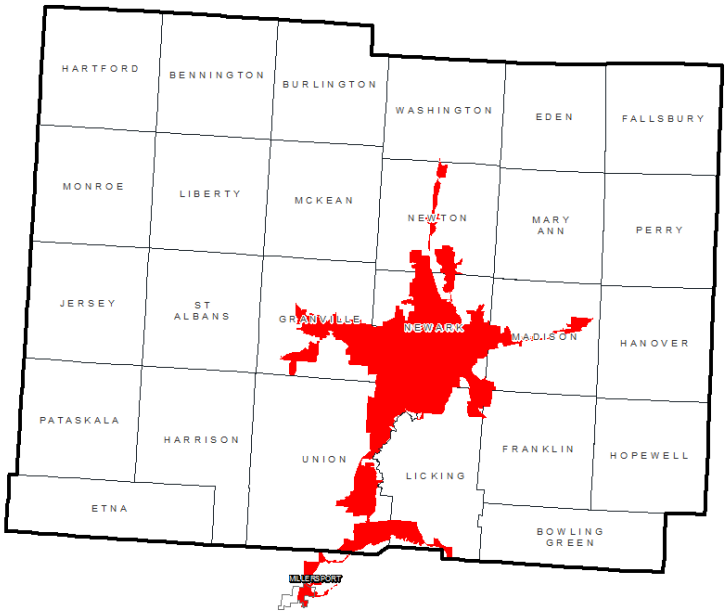
History of LCATS

The Newark OH urbanized area, originally called *Newark-Heath* Urbanized Area, was organized in response to the 1980 U.S. Census identifying the urban area as having reached the 50,000-population threshold. Following the requirements of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and the Clean Air Act of 1990, the Ohio Department of Transportation (ODOT) requested the officials of the City of Newark, the City of Heath and Licking County form a Metropolitan Planning Organization (MPO). As a result, the Licking County Area Transportation Study (LCATS) was formed.

The original designation of LCATS was made per Section 450.306 Metropolitan Planning Organization: Designation and Re-designation, from the Federal Register dated October 28, 1993, 23 CFR Part 450 and 49 CFR Part 613. The section stated that "*Designations of MPO's made after December 18, 1991, shall be made by agreement among the governor(s) and units of general purpose local governments representing 75% of the affected metropolitan population including the central cities as defined by the US Bureau of the Census, or in accordance with the procedures established by state or local law*".

Prior to ISTEA the MPO existed, but did not employ staff. Decision-making was governed by the Mayor of Newark, the Mayor of Heath, the Licking County Engineer, and a representative of ODOT District 5. For the most part, the MPO's effort at that time consisted of producing a Transportation Improvement Program (TIP) on an annual basis. Federal Transportation dollars were given to the MPO on an as-needed basis only. On July 1, 1993, LCATS began operation as the newest and smallest Metropolitan Planning Organization in the State of Ohio. The first Policy Committee meeting was held in July 1993. Because of limited planning funds, the decision was made to hire a Transportation Study Director as the only full time staff member. LCATS remaining three part-time staff members were full-time members of the Licking County Planning Commission (LCPC).

LCATS Urbanized Area Since 1980, the *urbanized area* has grown and, as of the 2010 U.S. Census, now includes the Cities of Newark and Heath, the Villages of Granville, Hebron, Buckeye Lake, St. Louisville, and Millersport, located in Fairfield County, along with portions of the unincorporated areas of Licking County connecting the municipal areas.



LCATS Study Area

The *study* area now encompasses Licking County, excluding Etna Township, the cities of Pataskala and Reynoldsburg and including the Village of Millersport in Fairfield County. Etna Township and the cities of Pataskala and Reynoldsburg are included in the Mid-Ohio Regional Planning Commission (MORPC) Columbus Ohio Urbanized Area.

LCATS, the Organization

The Policy Committee of LCATS , as the forum for cooperative transportation decision-making, is comprised of at least 51% locally elected officials. LCATS *eligible* members include:

- Mayor of Newark
- Mayor of Heath
- A Licking County Commissioner
- Licking County Engineer
- Representative from the Ohio Department of Transportation
- Mayor of Granville
- Mayor of Hebron
- Mayor of Buckeye Lake
- Mayor of Millersport
- Licking County Airport Authority
- Representative from the Licking County Transit Board

- Licking County Planning Commission Director (in accordance with LCATS By-Laws

The Policy Committee is assisted by a Technical Advisory Committee. LCATS eligible representatives include:

- Newark City Engineer
- Heath City Zoning Inspector
- Licking County Engineer
- ODOT District 5
- Village of Granville Planner
- Village of Hebron Administrator
- Village of Buckeye Lake representative
- Village of Millersport representative
- Licking County Transit Board Manager
- Licking County Planning Commission Director
- Newark Area Chamber of Commerce Transportation Sub-Committee
- Licking County Airport Authority

Other Ad-Hoc committees are periodically formed to address needs or projects that are important to the community.

GOALS, OBJECTIVES AND PERFORMANCE MEASURES

The efforts and direction of LCATS are focused on maintaining and improving the transportation system in Licking County. In order to achieve this mission LCATS has developed Goals and Objectives to assure our mission is met. LCATS has always had Goals and Objectives and during the Winter of 2016 the previous goals were revisited with the intent of refining them to be more specific and targeted to the planning factors required by the FAST Act.

FAST Act NATIONAL GOALS

The *Goals and Objectives* of LCATS were developed based on guidance from Federal Highway Administration, and ODOT on required elements and conformance with the FAST Act. The eight planning themes identified in the FAST Act are summarized below:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, and improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.

6. Enhance the integration and connectivity of the transportation system across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.

In addition to the FAST Act National Goals, the Federal Transit Administration (FTA) also requires that MPO's incorporate transit planning in their plans.

- Incorporating safety and security in transportation transit planning.
- Participation of transit operators in metropolitan and statewide planning.
- Coordination of non-emergency human service transportation.
- Planning for transit systems management/operations to increase rider-ship.

LCATS GOALS & OBJECTIVES

The *Goals and Objectives* of LCATS were developed based on guidance from Federal Highway Administration, and ODOT on required elements and conformance with the FAST Act. These were reevaluated as part of a series of TAC and Policy Committee discussions in 2011 and the goals and objectives are still relevant. LCATS wanted to address the eight planning factors of transportation planning as well as reflect the unique characteristics of our region and people. LCATS Goals and Objectives are listed below:

GOAL: Provide a transportation system that is safe, secure and efficient.

Objective: Increase the safety of the transportation system through engineering, education, enforcement, and emergency management.
Objective: Participate in a cooperative effort to provide a secure and responsive transportation system to combat manmade and natural disasters.
Objective: Maintain and preserve the existing transportation infrastructure

GOAL: Provide a transportation system that allows for movement of people and goods across the region and the country.

Objective: Provide transit services that meet the diverse needs of the population
Objective: Provide bicycle and pedestrian facilities as part of the transportation network
Objective: Plan for freight movement of goods to destinations across the country.
Objective: Support operation and management strategies that improve the movement of people and goods

GOAL: Provide a transportation system that allows for the physical, emotional, and financial well-being of the LCATS service area.

Objective: Emphasize a transportation system that supports the economic vitality of the metropolitan area.
Objective: Coordinate with environmental partners to minimize impacts to sensitive environmental resources from transportation facilities.
Objective: Design a transportation network to meet the changing and future needs of the community
Objective: Encourage transportation infrastructure and development to be built concurrently.

PERFORMANCE MEASURES

In order to assure that the goals and objectives are met, the LCATS TAC and Policy Committee developed performance measures to guide the LCATS in their activities and to guide local jurisdictions in reaching the goals and objectives established. Specific goals were developed to focus on each mode of transportation. In addition, we have focused on project delivery to assure that the necessary upgrades and maintenance are occurring in a timely fashion. This is currently an area that needs improvement in LCATS. By focusing a performance measure on project delivery will assure it receives the proper focus. Performance Measures will be reported annually to the Policy Committee.

Pavement Maintenance

- The majority (>51%) of LCATS STP funding should be used for roadway maintenance and reconstruction.

Bridge Condition Ratings

- Depending upon structure type schedule bridges for reconstruction at the appropriate Bridge General Appraisal.

LCATS Highway Safety Program

- Review and analyze 100% of the locations designated as high priority safety locations each year

Transit

- Maintain number of denied trips less than 5% per year for public transit trips. This measures transit availability
- Maintain an 80% on time vehicle preventative maintenance schedule

Improve Non-Motorized Access

- Upgrade/create new sidewalks on roadway projects when applicable
- Increase on road bike facilities and/or shared use paths by three miles per year
- Maintain multimodal collaboration each year with at least one project

Roadway Project Delivery

- Deliver 80% of projects phases at scheduled time frame
- Schedule 80% of LCATS funded projects for first/second quarter sell of SFY

Air Quality Conformity

- Maintain non-failing air quality conformity

APPLICATION IN ACTION

The challenge is not in creating Performance Measures, but in implementing them in an efficient and 3-C process. LCATS strives to meet the Goals and Objectives and Performance Measures by working constantly with individuals, groups, communities and elected officials. It is together that our goals can be achieved.

LCATS study area is adjacent to the Mid-Ohio Regional Planning Commission study area. The 3-C process is alive and well between the two MPO's on a number of projects that cross from one study area into the other including the ARRA funding and project development, and the Federal Functional Classification re-designation; the two have worked and continues to work well together.

We also work well together in not only specific project analysis but, also in large regional issues such as the six county air quality non-attainment evaluations. We work very closely together to make sure that the channels of communication for travel demand model networks; project expansions and capacity projects are well documented and communicated. The two both fully participate in the interagency consultation process, which also involves OEPA, USEPA, ODOT, FTA and FHWA. All entities involved in the consultation process are highly professional, cooperative and comprehensive.

When a major project is being considered and developed, a task force, or stakeholder group, is convened. These groups serve many purposes; they provide an outreach source, education and knowledge base. Three such groups currently existed for the proposed Cherry Valley interchange project. The first group, the Cherry Valley Task Force, is made up of local business leaders, elected officials, and citizens that are interested in moving the project forward. This group was very supportive and part of the driving force that helped Congressman Pat Tiberi successfully earmark two million dollars for a study, and to eventually get the interchange project funded.

The Licking County Transit Board (LCTB) also works diligently to coordinate efforts between various agencies that provide transportation for human service clients. They have a coordination committee that works together to resolve issues coordinate services, pool funds and improve services.

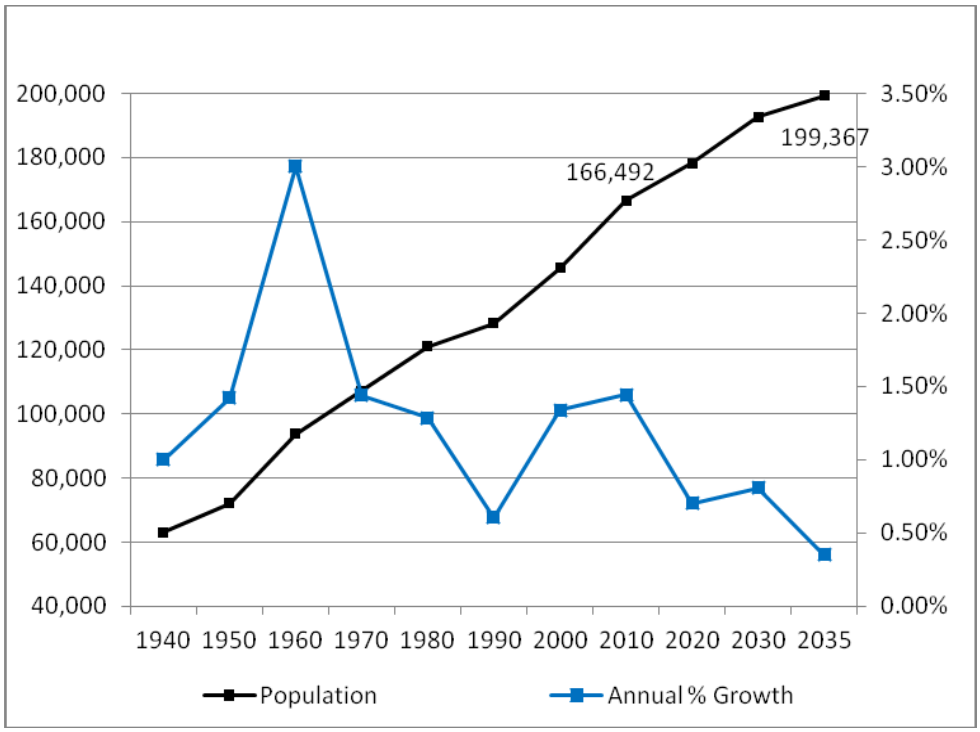
Frequently, LCATS and members of LCATS meet to discuss projects, coordinate projects, and allow for interaction between modes in planning. The region benefits from the cooperative spirit of federal, state, local, and adjoining MPO's. Individual task forces, focus groups, and stakeholder groups are periodically developed to work through complex issues and projects.

Our role is to help provide synergy, build relationships and consensus, to move projects, programs and improvements forward that meet the 'litmus test' of our Goals, Objectives and Performance Measures.

COMMUNITY PROFILE

PEOPLE

LCATS looks at different population trends to better improve our service to the community. We also use this data as an analysis tool. Much of the information used is from the US Census Bureau. Licking County has been growing in population and is expected to continue growing.



Newark the County Seat

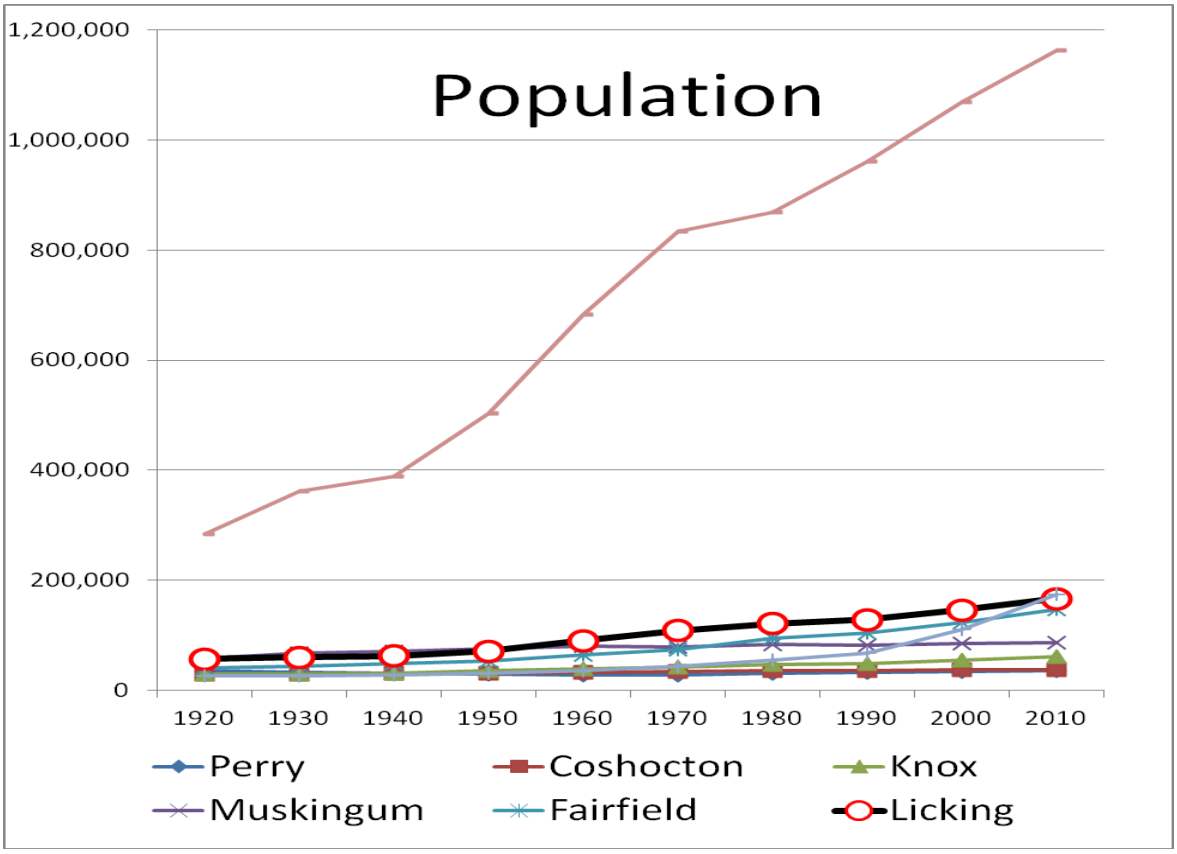
While Ohio has had numerous counties and their county seats decreased in population since 1980 Licking County and Newark have grown. Since 2000 Licking County has grown 14.4% to 166,492 people becoming the fifth fastest growing county in Ohio. Since 1980 Newark the county seat has also grown 15.6% to 47,573. In comparison to other cities with an industrial heritage Newark has done quite well. In comparison, Youngstown has lost 48,445 people or 42% of it's' population. Youngstown has lost more people than Newark currently has and, if the current trend continues, by the next Decennial Census the two will be nearly the same size.

Other county seats are shrinking in population, but Newark continues to grow. From 1980 to 2010, Newark grew by over 14% to nearly 48,000 residents

This story of population loss has become all too common for Ohio. According to the Ohio Department of Developments *Ohio County Profiles - Ohio,* nine of ten of Ohio's largest cities lost population since 2000. See table below:

Name	Population Lost	% Loss Population
Cleveland	81,588	17%
Cincinnati	34,342	10.4%
Toledo	26,411	8.4%
Akron	17,964	8.3%
Dayton	24,652	14.8%
Parma	4,054	4.7%
Canton	7,799	9.7%
Youngstown	15,044	18.3%
Lorain	4,555	6.6%

Some urban areas in Ohio are declining; Newark and central Licking County are growing. Of Ohio's ten largest places Columbus is the only one that grew from 2000 to 2010. It grew by 75,563 people or 10.6%. Licking County being adjacent to the Columbus area and the Franklin county job markets is a significant factor in our growth. See graph of Licking and our surrounding counties population and Percent Change.



Language Proficiency

LCATS closely watches data figures regarding primary languages that would necessitate LCATS to publish or provide interpreters when seeking public involvement and in our planning campaigns.

As of the Census Bureau, American Community Survey, one year estimate, Licking County's second largest primary language was Indo-European, likely Somali. Of the 1,282 households in Licking County that use Indo-European as their primary language only 97 (.17%) are "Linguistically Isolated". The next largest primary language was Spanish. Of the 1,128 households in Licking County that use Spanish as their primary language only 49 (.08%) are "Linguistically Isolated". At this time, less than three tenths of one percent of Licking County residents are "Linguistically Isolated". Based on this data, LCATS does not publish or actively pursue interpreters or publish documents in other languages in our planning efforts. We do recognize this need may become apparent in the future as we follow trends locally.

Income

Licking County is very consistent in comparison to the State of Ohio regarding number of families and individuals living in poverty. According to the Ohio Department of Development's, Licking County Profile, Licking County has 3,246 or 7.6% of families living below the poverty threshold. This is a 48% increase in families living in poverty since the 2,200 in the 2000 Census.

Also in Licking County 16,110 or 10.6% of the population are individuals living below the poverty threshold. This is a substantial increase in comparison to the 7.4% living in poverty in 2000. See map below for locations in Licking County that have large percentages of population living below the HUD developed Low-to-Moderate income levels.

From 2000 to 2010 Licking County has seen a 48% increase in the number of families living in poverty.

Below are the demographics on race, educational background, and household income.

Population by Race	Licking County	State of Ohio	United States of America
Total Population	166,492	11,536,504	308,745,538
White	94.5%	82.7%	72.4%
African-American	2.7%	12.2%	12.6%
Native American	0.1%	0.2%	0.9%
Asian	0.7%	1.7%	4.8%
Pacific Islander	0.0%	0.0%	0.2%
Other	0.2%	1.1%	6.2%
Two or More Races	1.7%	2.1%	2.9%
Hispanic (May be of any race)	1.1%	3.1%	16.3%

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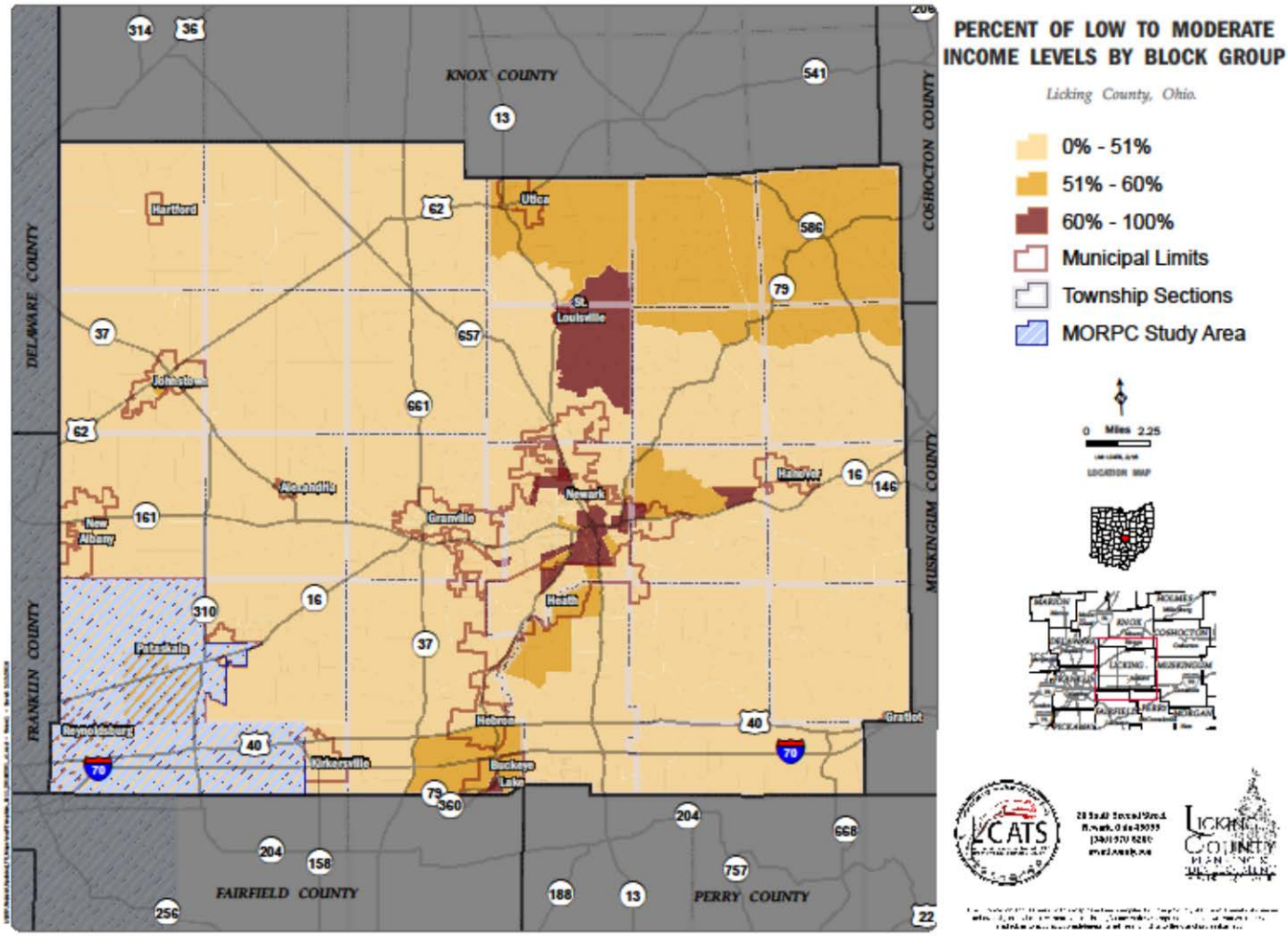
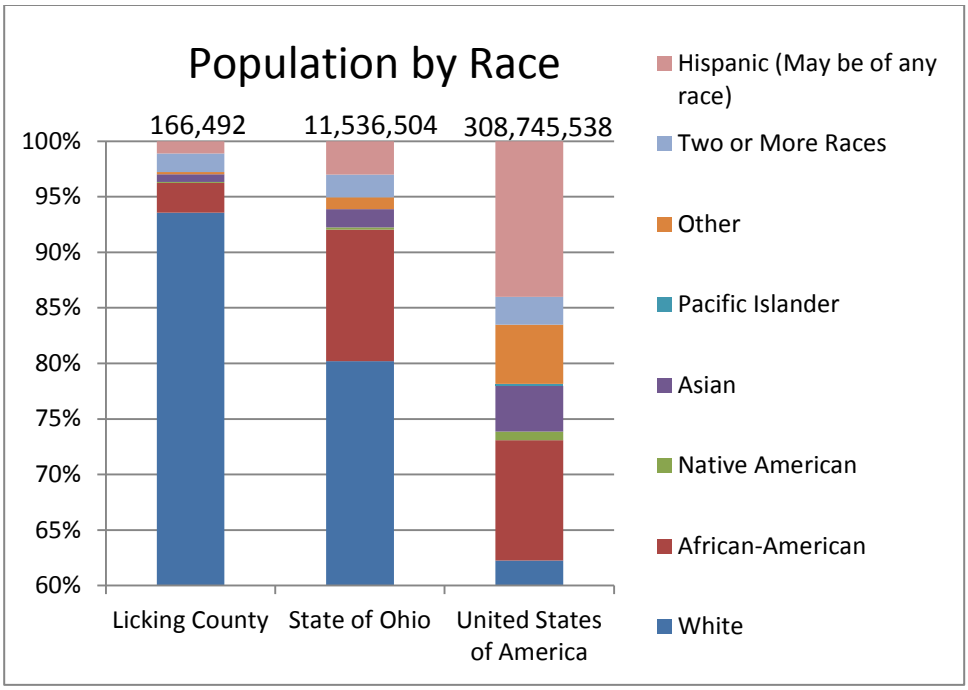
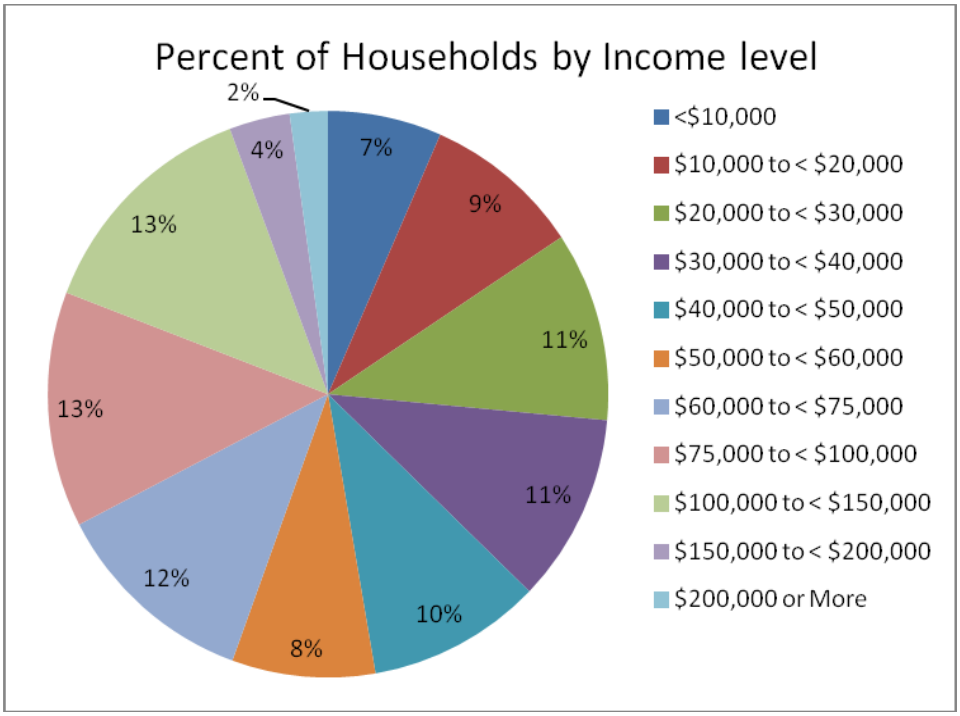

PERCENT OF LOW TO MODERATE INCOME LEVELS BY BLOCK GROUP
Licking County, Ohio.
0% - 51%
51% - 60%
60% - 100%
Municipal Limits
Township Sections
MORPC Study Area
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
DELAWARE COUNTY
FRANKLIN COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Newark
Granville
Hanover
New Albany
Heath
Pataskala
Hebron
Gratiot
Reynoldsburg
Kirkersville
Buckeye Lake
LCATS





Overall Licking County has a median household income of $66,890

Educational Attainment	Number	Percent
Persons 25 years and over	103,536	100.0%
No high school diploma	12,526	12.1%
High school graduate	40,946	39.5%
Some college, no degree	20,788	20.1%
Associate degree	6,830	6.6%
Bachelor's degree	15,460	14.9%
Master's degree or higher	6,986	6.7%

TRAVEL PATTERNS

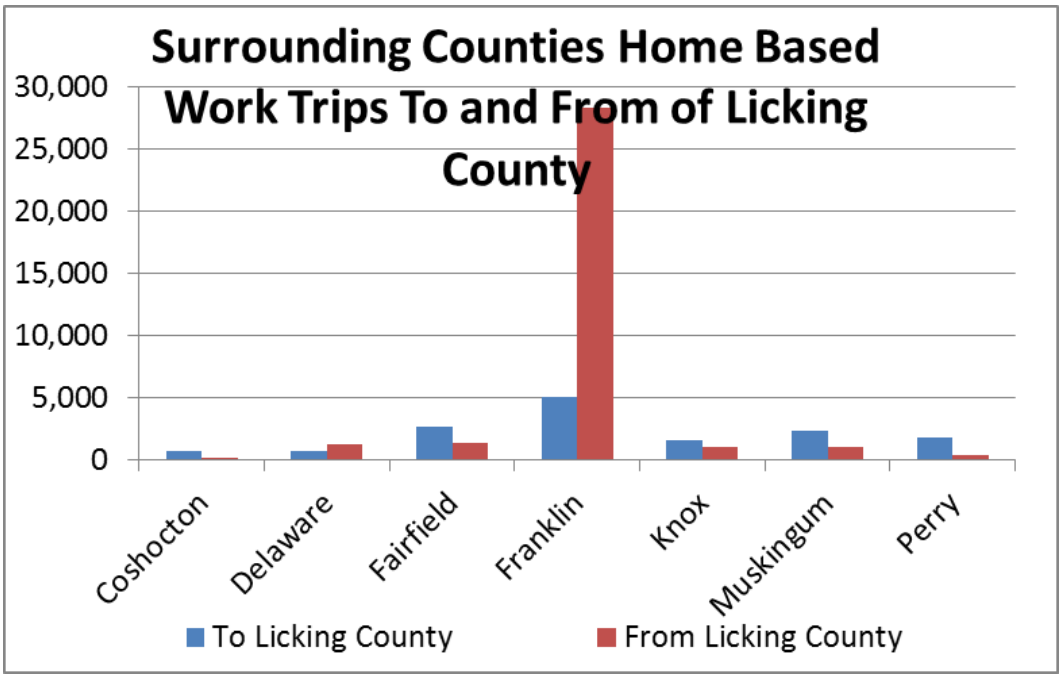
According to the 2010 Census Transportation Planning Package:

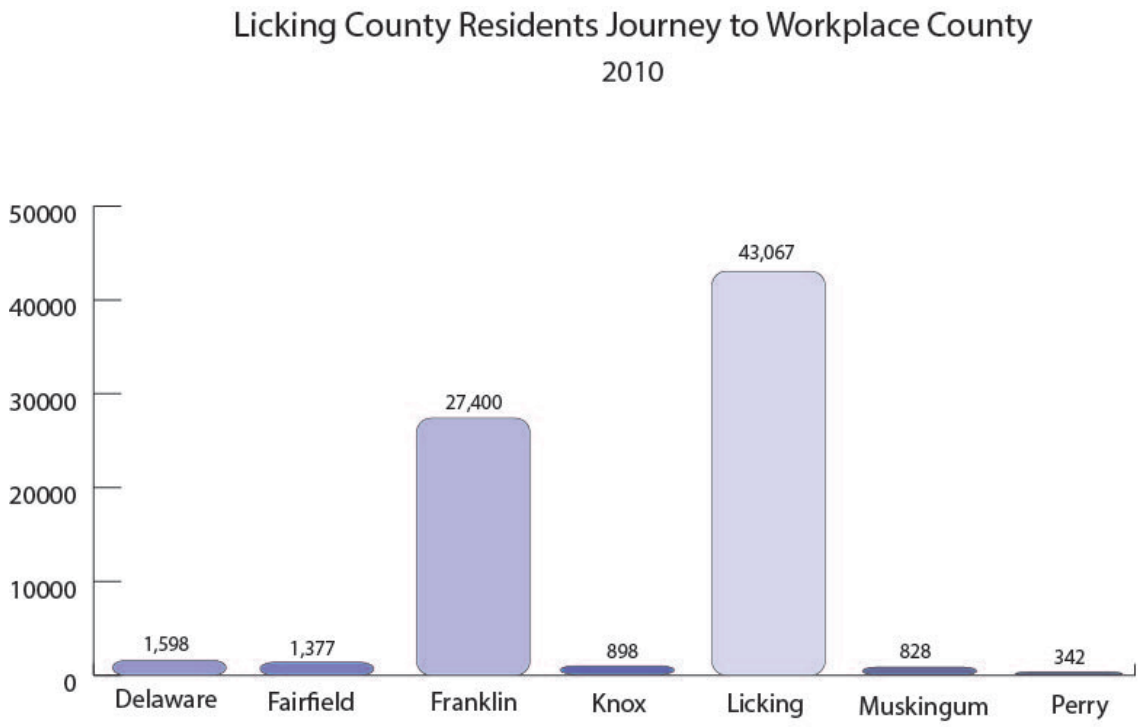
36% of Licking County's home to work trips are made to Franklin County and 57% stay within Licking County. The remaining six to seven percent of the home to work trips from Licking County go to all other counties.

36% of all Licking County work trips are made to Franklin County

This shows Licking County is in good standing for employment. In the 1990 and 2000 census Licking County had more home based work trips leave the county than stayed in the county. Now Licking County has 43,067 trips that live and work in Licking County, 32,443 home based work trips that travel to other counties and 16,050 work trips that work in Licking County but live in other counties.

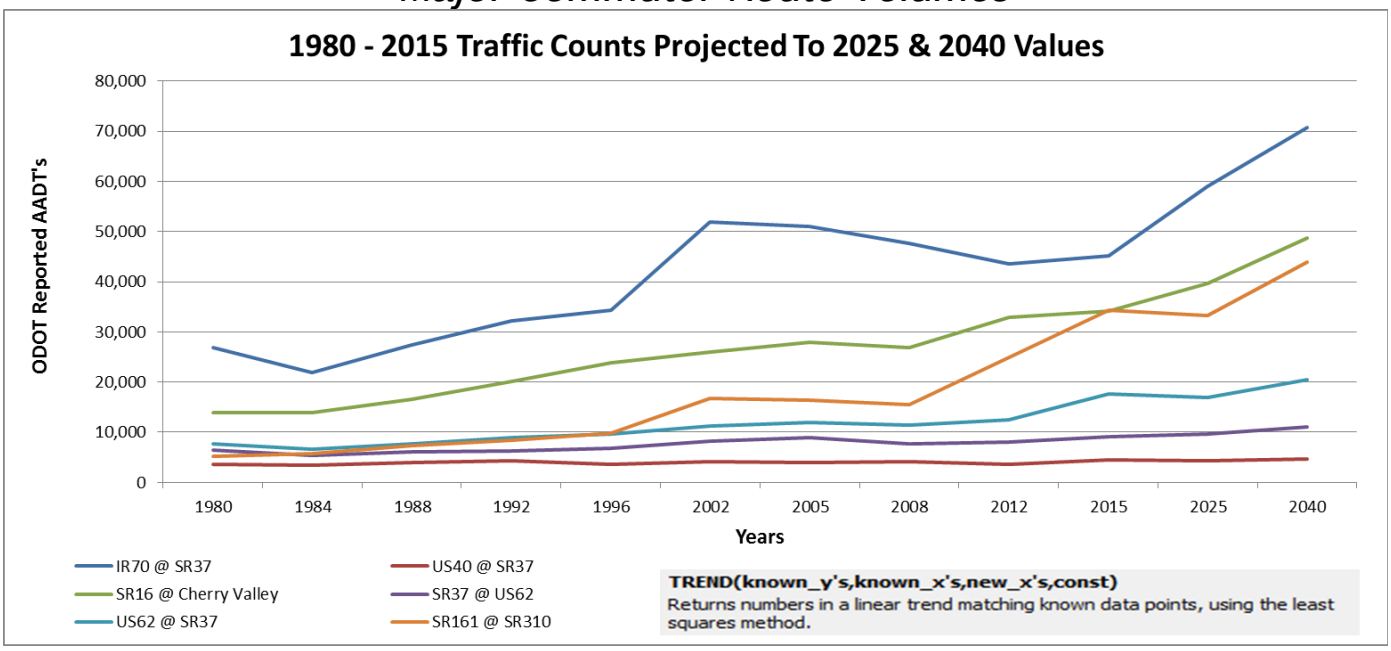
Licking County also draws workers into the county. See the graph below for comparison of both the inbound and outbound work trips.

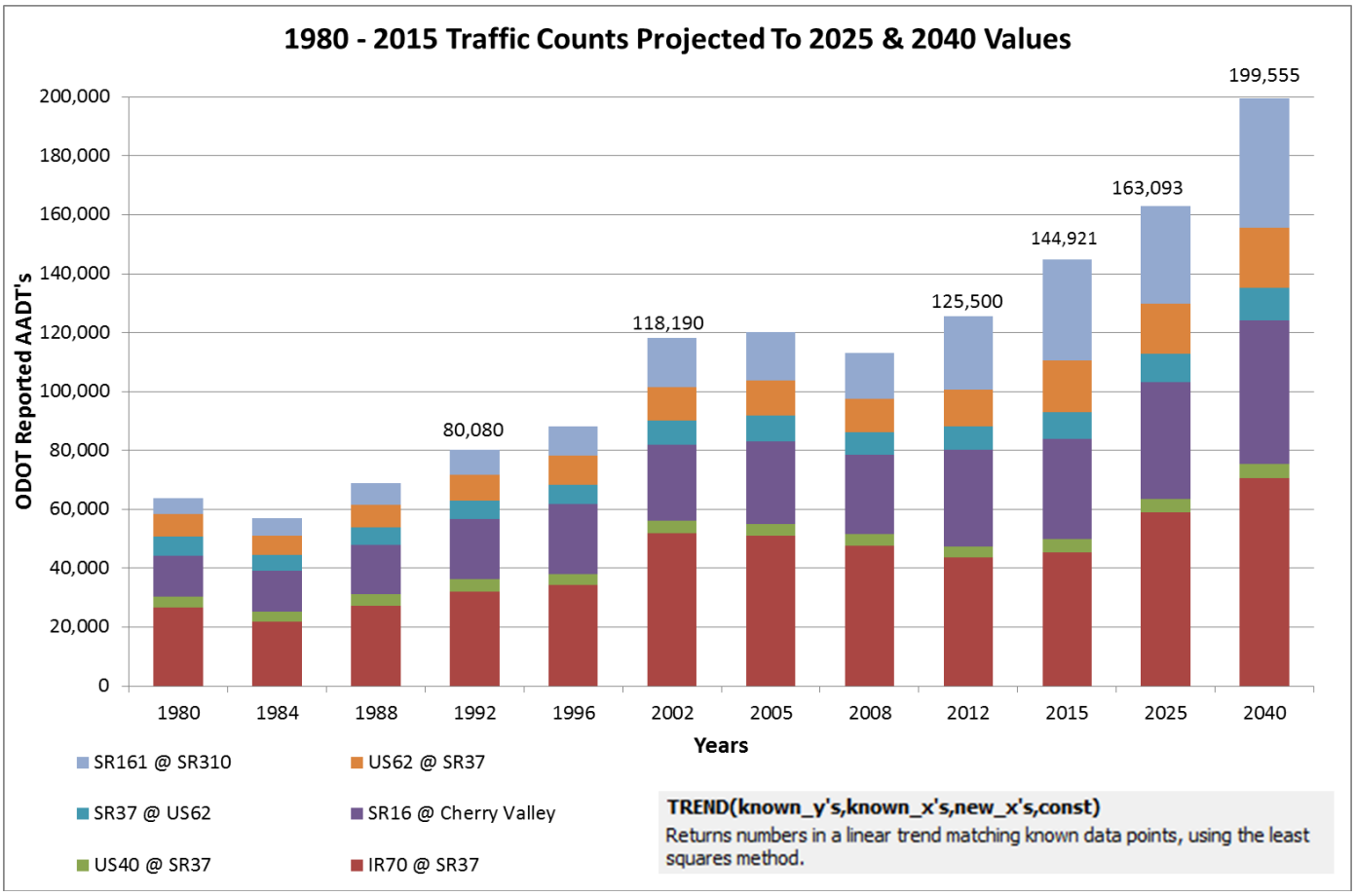




* 43% of county residents travel to neighboring counties for work.

Major Commuter Route Volumes





The large commuter volume into & out of Licking County's six primary commuter routes present's several issues. The six routes and their volumes are in the table below.

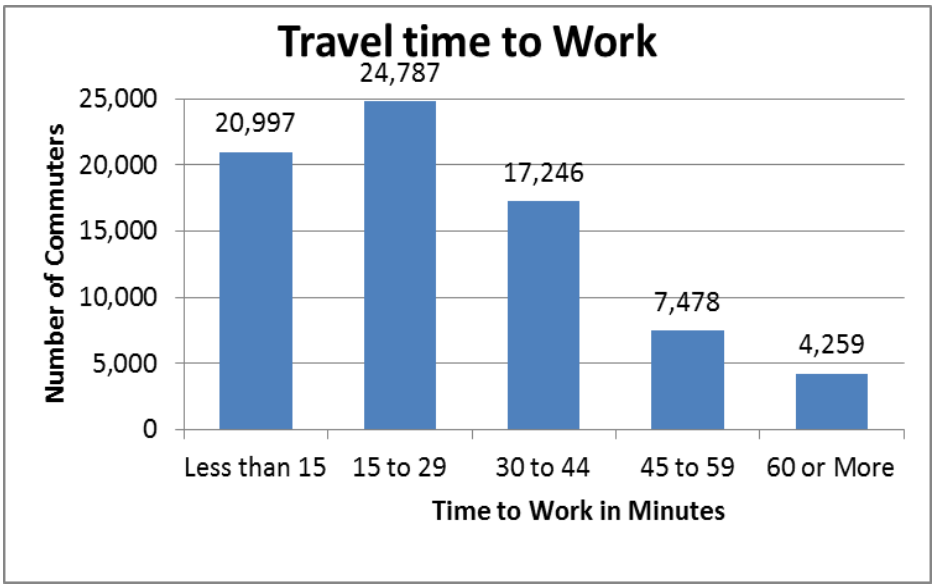
1980 - 2015 Traffic Counts Projected To 2025 & 2040 Values

ODOT Reported AADT's

Years	IR70 @ SR37	US40 @ SR37	SR16 @ Cherry Valley	SR37 @ US62	US62 @ SR37	SR161 @ SR310
1980	26,780	3,680	13,900	6,360	7,770	5,180
1984	21,970	3,400	13,820	5,370	6,560	5,720
1988	27,360	3,950	16,490	6,130	7,700	7,260
1992	32,150	4,260	20,140	6,260	8,870	8,400
1996	34,280	3,600	23,810	6,720	9,700	9,900
2002	51,940	4,180	25,930	8,160	11,160	16,820
2005	51,060	4,040	27,970	8,860	11,860	16,370
2008	47,570	4,080	26,920	7,640	11,410	15,580

2012	43,580	3,680	32,990	8,000	12,410	24,840
2015	45,236	4,542	34,178	9,027	17,615	34,323
2025	59,045	4,362	39,727	9,710	16,903	33,347
2040	70,715	4,597	48,745	11,085	20,484	43,929

According to the Ohio Department of Development's, 2010 Licking County's Profile, Licking County's mean travel time to work is 25.1 minutes. With 71,076 workers 16 years of age or above, that equates to 31,278 hours of travel for the home-based work trip per day. According to the Census Bureau's Transportation Planning Package the home-based work trip is 51% of our daily travel. Taking that into account there is 61,329 hours of home-based travel per day in Licking County. See graph for breakdown of travel time to work.



Licking county is dependent on vehicles. Only 6.9% of households have no vehicles. The City of Newark has 60% of these zero-car homes

Available Passenger Vehicles per Households

Licking County is a very vehicle dependent area. With mostly rural and suburban area types, driving is a daily necessity for a vast majority of Licking County's citizens. Most of the citizens of Licking County have immediate accessibility to a passenger vehicle. According to Home Facts (http://www.homefacts.com/demographics/Ohio/Licking-County.html), one year estimates, Household Size by Vehicles Available of the 64,409 Licking County households 3,118 or 4.8% have no vehicles available, 17,509 or 26.8% have only one vehicle available and 44,663 or 8.4% of Licking County's households have two or more passenger vehicles available for use.

The Franklin County work commute pattern creates pressure on the east-west corridors: State Route 16

One very disproportionate statistic in Census Bureau's, American Community Survey, one year estimates Household Size by Vehicles

Available the City of Newark accounts for 20,441 households or 31.9% of Licking County's total households, but has 2,679 of the county's 4,471 59.9% of Licking County's zero car households. While there are numerous logical reasons this may have occurred, LCATS does not have the data necessary to definitively document the reason(s) behind this disproportionate statistic.

Agriculture

According to the Ohio Department of Development's Agriculture Profile, since 1980 Licking County farms have decreased in number and acreage. In the 27 years following 1980 there was a reduction in acres of farmland totaling 39,000 acres or 14%.

The last Census of Agriculture was conducted in 2012, by the USDA. This is the most recent data available. The five years between 2007 and 2012 saw an increase in the total number of farms, from 1,427 in 2007, to 1,484 in 2012. However, the total number of acres being farmed has decreased from 225,792 in 2007 to 224,015 in 2012. The average size of farms has also decreased from 158 acres in 2007 to 151 acres in 2012.

The rapid loss of farmland in Licking County, over the past decade in particular, was the result of individual lot owners splitting their land to establish additional building lots, and the development of large tracts of land for residential subdivisions. This trend was not isolated to Licking County, but was a byproduct of the national economic climate during that time period. Since the 2012 Census of Agriculture was taken, the economic climate in this country has strengthened and has seen a rebound in the development community. It is to be expected that the 2017 Census of Agriculture data will show that even less farmland will have been lost since 2012 than has been the trend in the recent past. This uptick in development has provided an opportunity for local communities to put into place recent changes they have made to development regulations.

Comprehensive Land Use Plans

A comprehensive land use plan is a tool available to townships to help community leaders, citizens and those investing in businesses and development in the community to assess a community's strengths and weaknesses and to understand historic and current land uses. Based on this assessment, a plan of future action is created. A comprehensive plan is also intended to encourage cooperation between all levels of local government, i.e., the county, villages and townships. Each local government is encouraged to utilize this process as the long-range planning tool to guide its development in the future. Stepping back and analyzing patterns and public opinions in the community allows realistic interpretation of the facts and figures provides a basis from which sound decisions can be made by the governing body. The comprehensive plan is a legal document whose purpose is to guide the decisions of township officials involved in township zoning.

Within Licking County, 16 of the 25 townships, 5 of the 10 villages and all cities have comprehensive land use plans. Currently, Bowling Green Township is in the process of developing a comprehensive land use plan and it is expected that they will have completed the development of the plan and present the plan for adoption near the end of the year. The plans for these entities have been adopted as follows:

ENTITY	ORIGINAL ADOPTION	UPDATE ADOPTION
TOWNSHIPS		
Bennington Township	December 2004	
Bowling Green	October 2012	
Burlington Township	January 2001	
Etna Township	October 1989	April 1997, July 2011
Granville Township	June 1998	August 19, 2012
Harrison Township	October 1993	September 2009
Franklin Township	February 1999	
Hartford Township	March 2006	
Jersey Township	December 1993	July 2010
Liberty Township	September 1993	July 2001
Licking Township	May 2002	
Madison	May 2009	
McKean Township	July 1999	
Monroe Township	1997	
Newton Township	December 1998	
St. Albans Township	1995	September 2007
Union Township	April 1998	
Washington Township	December 2003	
VILLAGES		
Village of Alexandria	June 2006	
Village of Buckeye Lake	January 2008	August 19, 2012
Village of Granville	Unknown	
Village of Hanover	August 2007	
Village of Hebron	March 1998	May 2009
Village of Johnstown	October 1990	
Village of New Albany	2006	
CITIES		
City of Heath	Unknown	
City of Newark	July 11, 2002	
City of Pataskala	Unknown	1998
City of Reynoldsburg	Unknown	

Many of the comprehensive land use plans within Licking County address transportation. This includes but is not limited to identifying major corridors, road classifications that are compatible with County and State road classifications, problem areas, etc. More specifically, many plans recommend transportation corridor overlay districts to be developed and enacted within their zoning resolutions/ordinances. The purpose of a traffic corridor overlay district is to provide overlay requirements to ensure that existing and anticipated corridor land uses and traffic improvements, within the district, will be developed in a manner that protects the health and safety of residents. The importance of maintaining traffic flow and accessibility so as to reduce potential traffic hazards, encourage compatible land uses, better comply with the Clean Air Act Amendment of 1990, and to protect property values, require that special emphasis on transportation planning and frontage treatment be achieved through the use of an overlay district. The traffic overlay district should also require uniform signage, adequate screening, and landscaping in an effort to establish visual harmony and promote aesthetic design in development within the district. Within a zoning resolution this is achieved in part by having increased setbacks to allow for future road widening, while maintaining a reasonable front setback from the potential future road right-of-way. By managing the spacing of access points to limit points of conflict and maintain traffic flow.

To date it has been the focus of the Licking County Planning Commission to work with zoned Townships and Villages to develop comprehensive land use plans. Once all zoned Townships are completed, the Licking County Planning Commission focus will change to reviewing adopted plans and working with these entities to revise them and ensure they remain up to date and address current and future land use trends. Generally, staff encourages Townships to plan for a minimum of 20 years and revise plans at a minimum of every five years. Many Townships and Villages are past this five-year update period so there will be many Townships over the next few years working to revise their plans.

Zoning Resolutions

Zoning resolutions/ordinances regulate land use in the interest of protecting public health, safety, convenience, comfort, prosperity, and/or general welfare in accordance with a comprehensive land use plan. Within Licking County, 19 out of 25 townships, 11 out of 12 villages, and all cities have zoning. Zoning has been adopted as follows:

ENTITY	ORIGINAL ADOPTION
TOWNSHIPS	
Bennington Township	May 1970
Burlington Township	November 1974
Etna Township	May 1965
Franklin Township	May 1974
Granville Township	1957
Harrison Township	1959
Hartford Township	November 1972
Jersey Township	1965
Liberty Township	1972
Licking Township	November 1964
Madison Township	May 1962
McKean Township	November 1975
Monroe Township	1962
Newark Township	1957
Newton Township	1960
St. Albans Township	1958
Union Township	1963
Washington Township	November 1969
VILLAGES	
Village of Alexandria	Unknown
Village of Buckeye Lake	Unknown
Village of Granville	August 1966
Village of Gratiot	Unknown
Village of Hanover	1973
Village of Hartford	(Covered under Hartford Township Zoning)
Village of Hebron	July 1965
Village of Johnstown	February 1964
Village of Kirkersville	1970
Village of New Albany	2006
Village of St. Louisville	Unknown
Village of Utica	Unknown

CITIES

City of Heath	November 1958
City of Newark	August 1950
City of Pataskala	1966
City of Reynoldsburg	1983

Zoning resolutions/ordinances address transportation issues and/or indirectly affect transportation issues in many ways. The most common zoning tools that affect transportation are structure setbacks, frontage requirements, driveway spacing requirements, landscaping and buffering requirements, sidewalk and bike trail requirements, and signage requirements. Currently in Licking County Monroe and Liberty Townships have Transportation Corridor Overlay Districts established both in their zoning resolutions and on their zoning maps. This affects the US Route 62 corridor. Union Township has an overlay district on segments of US 40, IR 70 and SR 37.

ECONOMIC DEVELOPMENT

Transportation is a driving force in economic development. The history of Licking County's development is owed, greatly, to transportation and there's every reason to believe that will be the case long into the future. That history started when the Licking River brought canoes with Native Americans here more than 2,000 years ago. Ground was broken for the Ohio & Erie Canal right here in Licking County in 1825 and was a mode of transportation that ushered in the industrial era. Railroads followed 150+ years ago with major east-west and north-south lines crisscrossing the county like they still do today.

In order to bring in new companies to Licking County, site selection and preparation plays a big role in economic development. Some of the top qualifications a site selector looks for are shovel ready sites, available buildings, skilled labor, quality of life, and transportation networks, especially highway accessibility. Licking County is well versed to meet and even exceed expectations in many of these areas.

As site selectors are looking for areas they follow a process to sieve through the potential sites. Many of these filters are applied without local jurisdictions even being aware that they are under consideration. For these reasons, LCATS has worked with local jurisdictions to help collect data that may be of value to site selectors and put it into a GIS web based application on our website. Information includes, traffic counts, zoning and land use plan information, recreational sites, and in the future –utility data.

Recently, a Community Improvement Corporation (CIC) has been developed to create a new approach to economic development. The CIC will be a coordinated inclusive new 'front door' approach to economic development to prepare Licking County to compete for development jobs and growth in the future.

Various aspects of economic development that have been housed under different entities will be moved to the CIC and create a seamless point of contact to interested businesses. The main role will be business attraction, business retention & expansion, business creation, and workforce development. Funding for the CIC will be from a broad range of public and private commitments.

ECONOMICALLY DRIVEN TRANSPORTATION PROJECTS within Licking County

While all projects to maintain or improve the transportation system are good for the economic base of a region, some projects are driven significantly by economic development forces.

SR310 from IR70 to US40
The widening of SR310 for access and mobility from IR70 to US40.

Thornwood Drive Corridor from SR 79 to SR 16
Heath/Newark/Port Authority
With the SR16 interchange underway officially named Thornwood Crossing and the new Raccoon Creek Bridge under development the next appropriate step is Thornwood Dr in Newark followed by Heath.

SR161 & Mink Rd Interchange Construction
The constructions of the SR161 interchange at Mink Rd for truck access into the New Albany business park.

Jug St Improvement from Franklin County to Harrison Rd
The Jug St improvement is for access to the New Albany Beauty Park.

SR79 in Buckeye Lake
Following the construction of the new dam the need to improve SR79 will be needed. This project is in in infancy.

Innovators Way in New Albany
Connecting the Mink Rd interchange to the Beauty Park in the City of New Albany

Etna Parkway Improvements in Etna Township
With the large and expanding Prologis

West Main St in Newark
Minor widening of West Main St in the City of Newark from Cherry Valley Rd to Thornwood Dr.

Extend Baker Boulevard in Newark to Evan Boulevard
The need to connect these two roadways was identified in 2004. The connection would greatly improve access to the schools from northern Newark.

TRANSPORTATION AS AN ECONOMIC FORCE

Not only is a solid transportation network crucial to economic development, but construction projects bring economic development to the region as well. According to the American Road and Transportation Builders Association a $100,000,000 investment in transportation will result in 4750 jobs with less than 25% of them being in the construction field. The value of infrastructure investment pays an additional $4.33 for every dollar invested. The total investment break down for the $4.33 is broken up between Direct, Indirect and Induced employments.

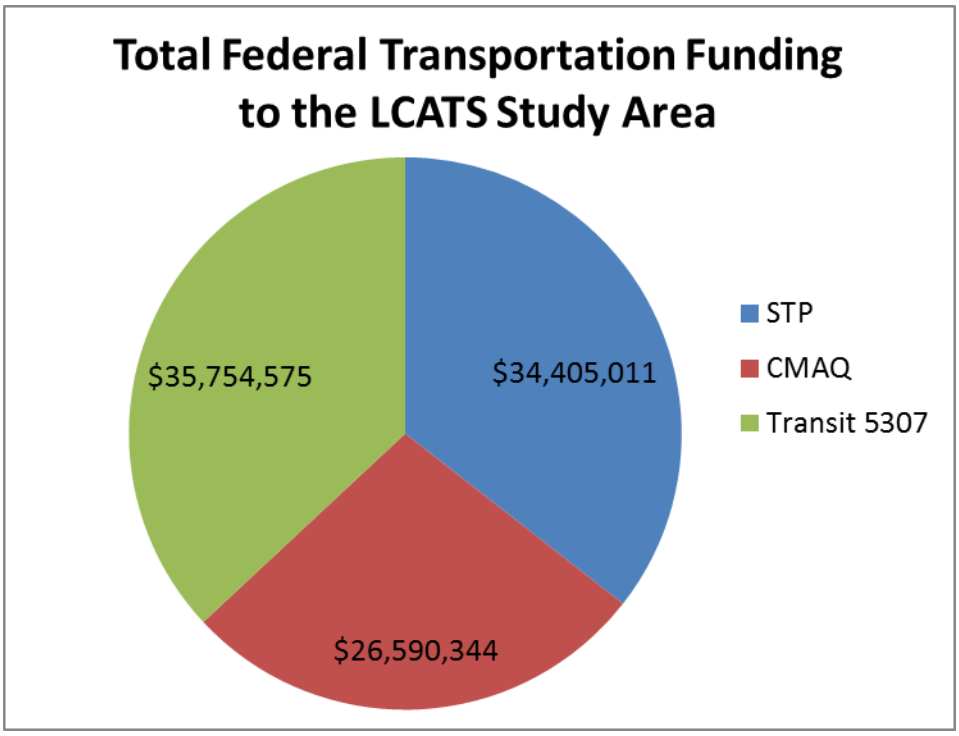
Direct Employment is employment that can be attributed to the operation, management, maintenance, and construction and planning of transportation. In general terms this is dollar per dollar.

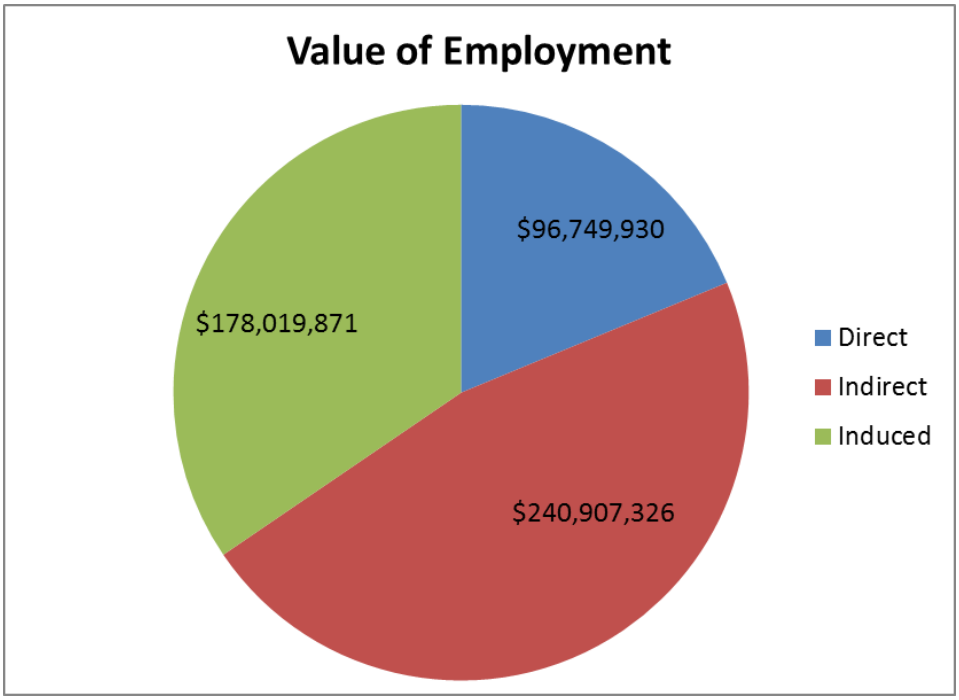
Indirect Employment is employment in goods and service supplier industries that results from the presence of transportation's direct employers. As such, indirect employment is generated in industries that supply or provide services to transportation related businesses. Generally speaking for every dollar spent in the direct employment of transportation $2.49 is earned in indirect employment.

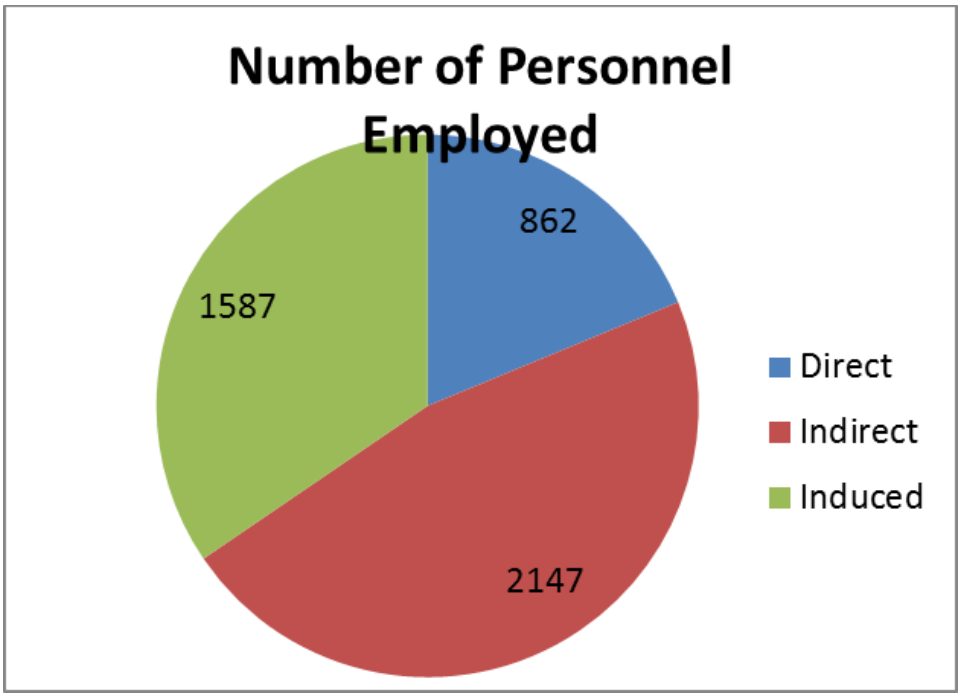
Induced Employment is employment generated through expenditures of individuals employed indirectly or directly by transportation businesses. For example, if a paving operator decides to expand or re-model their home, this would result in additional (induced) employment hours in the general economy. Specifically, the home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc. In general for every dollar spent in Direct Employment $1.84 is earned in induced employment.

Transportation employs 2.2 million people a year and averages 11% of the United States of America's total gross domestic product. This 11% is made up of the personal consumption of transportation that includes, but is not limited to, the household purchases of motor vehicles, parts, gasoline, oil, and public transportation services.

Within Licking County, over the current Transportation Plan period of 2016-40, $96,749,930 of Federal transportation funding will be spent. This will total 4,596 jobs with less than 25% of them in the construction industry, $96,749,930 (862 Jobs) in Direct employment due to transportation, $240,907,326 (2,147 Jobs) in Indirect employment due to transportation and $178,019,817 (1,587 Jobs) in Induced employment due to transportation dollars. The total sum of investment due to the federal transportation dollars in Licking County over the current twenty-four year Transportation Plan period is $515,677,127. This is an extremely important and significant part of Licking County's economic health and LCATS is exceptionally grateful to the Ohio Department of Transportation, the Federal Highway Administration and the Federal Transit Administration for this funding.


Total Federal Transportation Funding to the LCATS Study Area
$35,754,575
$34,405,011
$26,590,344
STP
CMAQ
Transit 5307


Value of Employment
$96,749,930
$178,019,871
$240,907,326
Direct
Indirect
Induced



Roads:

An excerpt from the American Society of Civil Engineers (ASCE) 2010 Report Card on Ohio Infrastructure states "*With over 125,000 miles of roads, Ohio has one of the largest and most utilized roadway networks in the United States. 43% of Ohio's roads are in critical, poor, or fair condition. It is estimated that by the year 2014, Ohio will have a highway budget shortfall of more than $10 billion at the state government level alone."* The report graded Ohio's roadways a D.

The ASCE report card also says "*$3.3 billion a year in costs to motorists from driving on roads in need of repair, which is $413 per year per motorist."*

To place this into the context of Licking County's roadway center line mileage of 2,152 (See table below) Licking County would have 925 miles of roadway in critical, poor or fair condition. To bring these 925 miles of roadway to a passing grade Licking County would need an investment of $172,160,000 over the current 2016-19 TIP years.

Below is a table showing the amount of centerline roadway that each jurisdiction type is responsible to maintain, provide snow & ice control, and the amount of funding needed to bring the systems roadways to a passing grade.

Jurisdiction Type	2-Lane Centerline Mileage	Multi-Lane Centerline Mileage	Total Centerline Mileage	Centerline Mileage in Critical, Poor or Fair condition	Cost to Bring Mileage to Passing Grade
State	198	68	266	114	$21,280,000
County	412	0	412	177	$32,960,000

Township	726	0	726	312	$58,080,000
Municipal	726	22	748	322	$59,840,000
Total	2062	90	2152	925	$172,160,000

Bridges:

Licking County has 721 bridges with a total deck area of 134,253 square feet. Following FHWA's General Appraisal Ratings Guidelines (See table below) the 721 bridges in Licking County rate the following:

General Appraisal	Description	Bridge Count	Deck Area	Deck Area Percent of Total
0-4	Bridges Needing Work Immediately or Planning for Repair Replacement in Near Future	105	134,253	7.3%
5-9	Better than Minimum Tolerance to Superior	616	1,702,370	92.7%

Bridge Condition Rating Categories

Rating	Condition Category	Description*
9	Excellent	
8	Very Good	No problems noted.
7	Good	Some minor problems.
6	Satisfactory	Structural elements show some minor deterioration.
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.
4	Poor	Advanced section loss, deterioration, spalling, or scour.
3	Serious	Loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.
1	Imminent Failure	Major deterioration or section loss present in critical structural components, or obvious loss present in critical structural components, or obvious vertical or horizontal movement affecting structural stability. Bridge is closed to traffic, but corrective action may be sufficient to put the bridge back in light service.
0	Failed	Bridge is out of service and is beyond corrective action.

While 7.3% in fair or worse condition may sound good it is not. Assuming a planning value of $130 per square foot to bring these 105 bridges to a passing grade Licking County and the LCATS Study Area by 2019 would need a $17 Million dollar investment.

Road & Bridges:

In total across Licking County and the LCATS Study area an investment of $189,612,890 will be needed by 2019 to bring our roads & bridges to a passing grade. This figure does not include dams, water, sewer, gas or electric.

BUSINESS AND INDUSTRY IN LICKING COUNTY

Leaders in Licking County recognize that the global economy requires constant change and adaptation in order to remain competitive. Continued investment in transportation and infrastructure, while strengthening partnerships to build business development capacity, are critical to sustaining growth.

Licking County has a diverse manufacturing economy that has been a driver of Central Ohio's growth for two decades. Fifty of the Fortune 500 companies have a presence in Licking County. Dow, Bayer, Boeing, Limited Brands, and Arvin Meritor are among those with a diverse manufacturing presence in Licking County.

In the past years, Licking County has successfully bucked the manufacturing downslide trend at a time when much of Ohio was not experiencing economic expansion in the industrial sector; Licking County successfully attracted capital investments by companies like ProLogis, Boeing, Samuel ManuTech, Holophane, Bayer, and Jeld-Wen.

In 2013, the top 10 employers, by employees, in Licking County were:

Employer	Number of Employees
Licking County Memorial Hospital	1616
Englefield Oil Co.	1400
State Farm Ins.	1205
OSU-N/COTC	1096
Licking County Government	1090
Newark City SD	850
Denison University	748
Anomatic Corporation	650
Park National Bank	650
Owens Corning Corporation	643

Data from Licking County Chamber of Commerce

When looking at the key employment by sector, the following are the top 5 categories in Licking County:

Employment Sector	Total Employment Percentages
Manufacturing	16.5%
Retail Trades Local	16.2%
Government	13.7%
Education & Health Services	12.1%
Leisure & Hospitality	10.4%

Data from Licking County Chamber of Commerce

ECONOMIC ASSETS OF LICKING COUNTY

Ohio is:

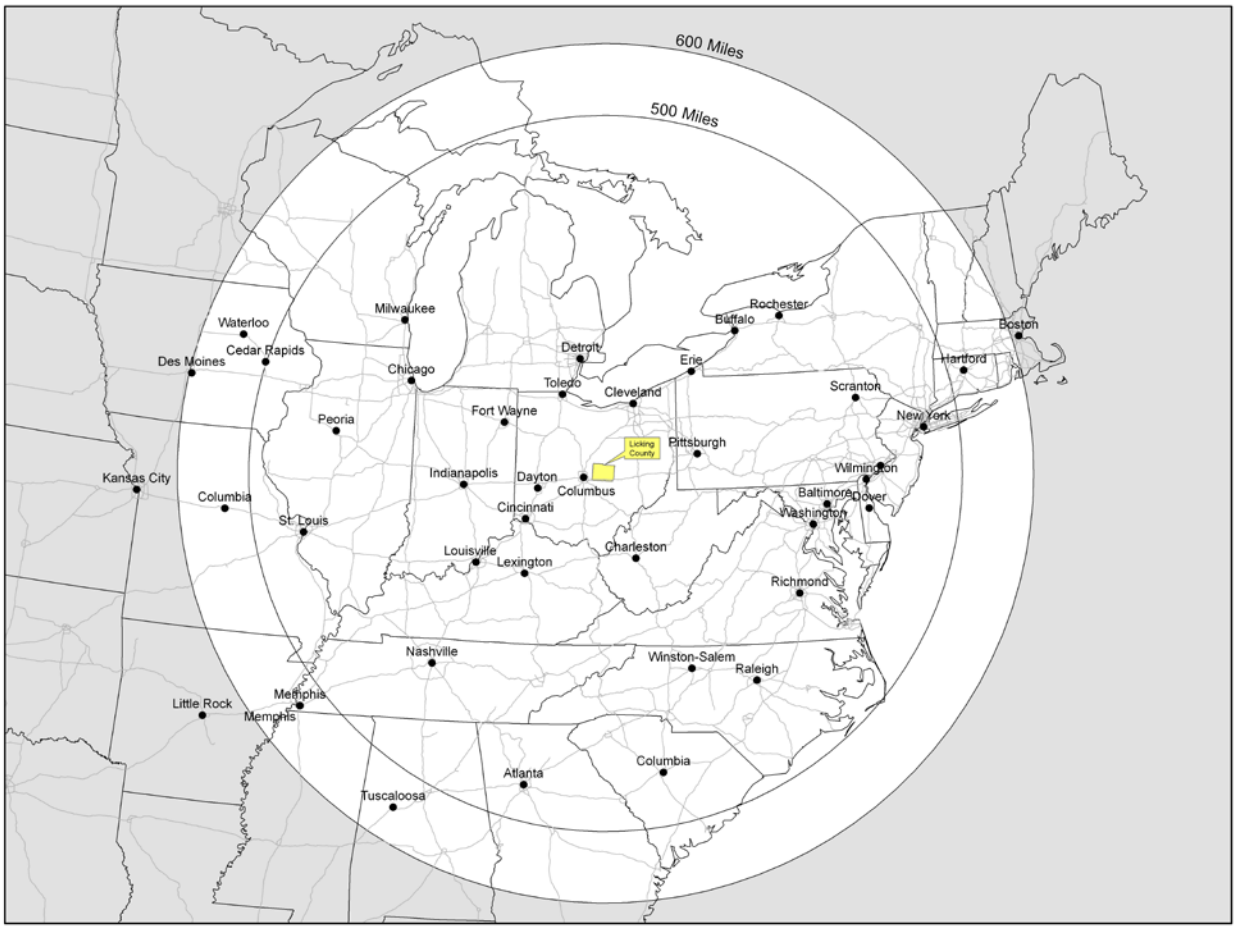
- 35th in geographic size
- 7th in population (11.6 million)
- 6th in licensed drivers (8.2 million)
- 17th largest economy in the WORLD
- Within 600 miles of 70% North American
- Within 50% of all U.S. households

Source = ODOT

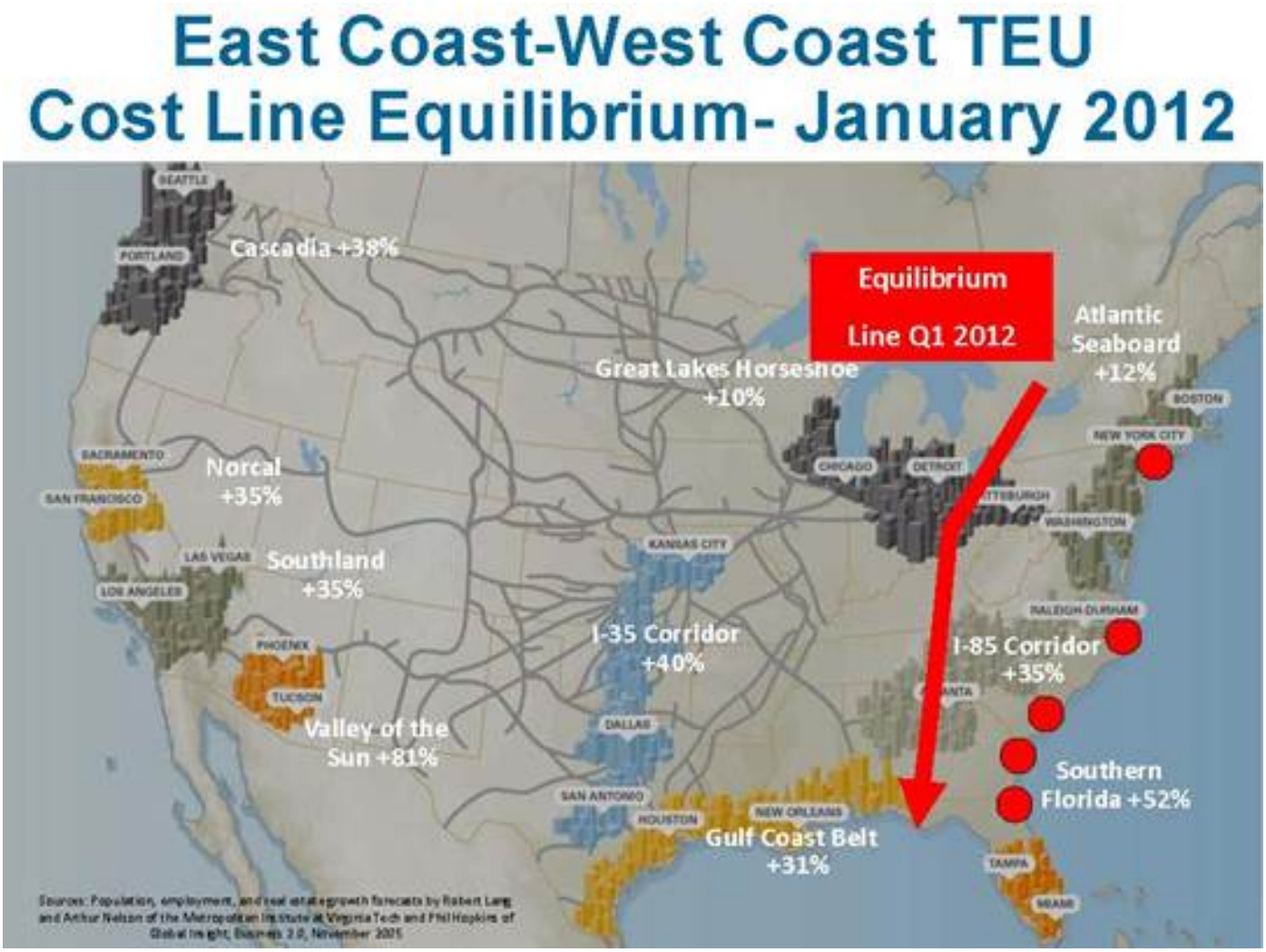
Ohio is:

- Within 500 miles of Nations industrial market
- 78% value added by manufacturing
- 73% capital expenditure
- 21% of top 30 billion market

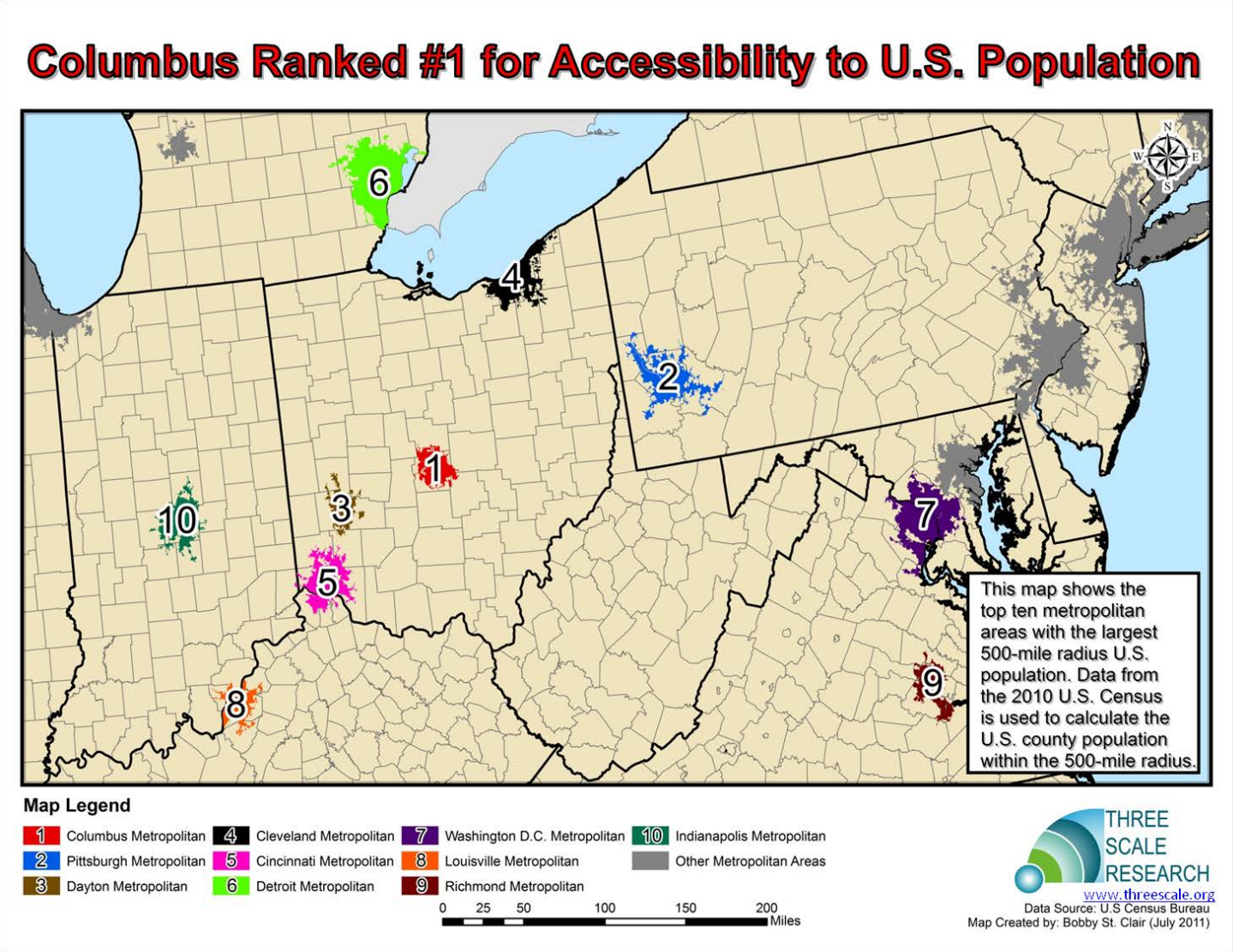
Source = ODOD



Today, Licking County's manufacturers and logistic providers enjoy access to extraordinary multi-modal transportation capabilities. According to research at Virginia Tech, Licking County sits along an equilibrium line where competitive shipping options to the east coast, west coast, and south all meet. The result is the most cost competitive and option-rich environment for international shippers.



Licking County is also positioned between the #1 (Columbus) and #2 (Pittsburgh) markets for reaching the most people in a 500-mile radius. Three Scale Research, in an August 2013 report, cited our region as the #1 for accessibility to the U.S. population.



Though transportation options are a factor in Licking County's past, present, and future, it's not the only factor in Licking County's development. Access to low-cost energy from electrical power generation and the predicted Utica Shale gas boom ranks high as well for future development. Finally, a manufacturing-oriented workforce with the education infrastructure in place to meet industry needs is another critical component.

ECONOMIC DEVELOPMENT RESOURCES

Across Licking County many entities work together to assure new development. Together, this effort has helped insulate the county from devastating economic downturns and positioned it to take advantage of renewed interest in development within the central Ohio region.

Small Business Development

Consulting Services: The Small Business Development Center (SBDC) offers numerous services to small businesses at no charge. These include one-on-one business consulting regarding access to capital, strategic planning and financial concerns, accounting and bookkeeping records, marketing, sales, public relations strategies, and human resource guidance.

The SBDC also provides access to a network of over 250 business experts through its PROS volunteer network. These are private sector professionals who have agreed to meet with selected SBDC clients to provide specific advice that will help their business grow and succeed. Areas of expertise include, but are not limited to, legal, accounting, banking, venture investment, marketing and PR. This r3esource is available to our area via a contract through Columbus State in Columbus.

Educational and Networking Opportunities: Over the course of a year, the SBDC offers over 70 educational and networking opportunities to businesses of all stages of growth and development in Central Ohio. SBDC programs are offered free or at a moderate charge.

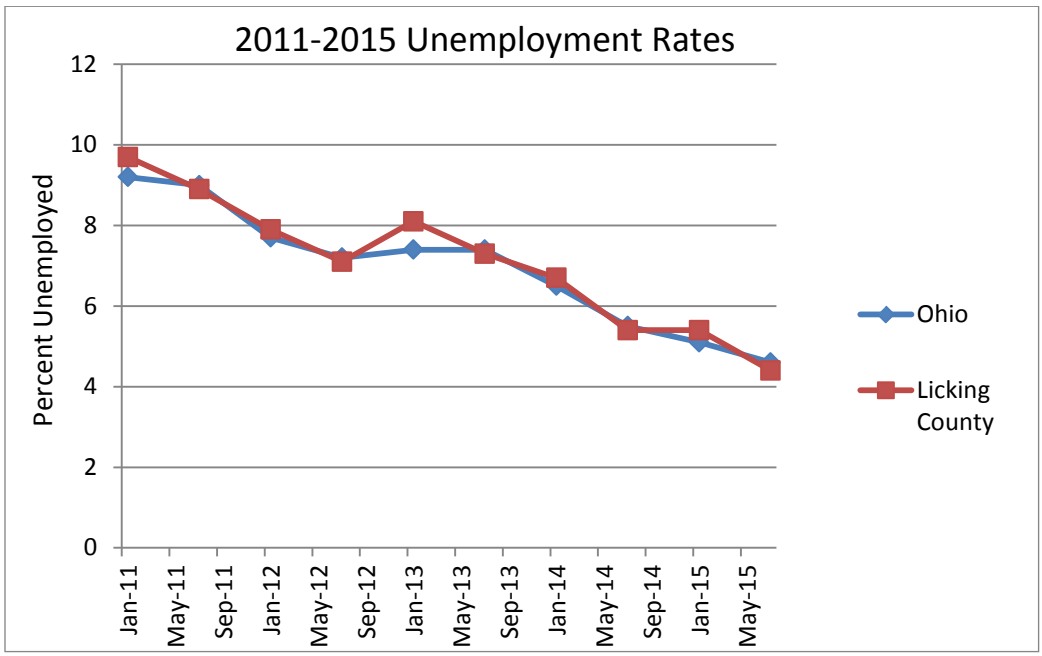
WORKFORCE & WORKFORCE DEVELOPMENT

By the time Chicago incorporated as a town in 1833 with a population of 150, Licking County had been around for 31 years, and the population was 20,869. The county seat of Newark had been incorporated for seven years and had a population of 999. By 1900, Newark's population had expanded to 15,000 and substantial employment had arrived. This employment included three iron foundries, construction, tractor companies as well as many businesses that existed because of the Baltimore and Ohio railroad.

Licking County Labor Force

The labor force Licking County currently possess is a highly skilled workforce for manufacturing/warehouse positions. Licking County is growing in the manufacturing industry. Manufacturing jobs create good work ethic and longevity for employees looking for a career. One problem Licking County is facing in all positions is the retirement of the "baby boomer" generation. Currently 40% of workforce nationwide is 45 years of age or older. By the year 2020 many jobs will be available to the younger workforce due to the retirement increase. Our schools and

universities need to begin to prepare students now for the jobs of the future. Licking County's unemployment rate is better than the State of Ohio, but has followed the same patterns.



Workforce development is constantly an issue at Job & Family Services (JFS). Each day JFS works hard to place dislocated workers. Schools and Universities like C-Tec (Joint Vocational School) and COTC/OSU have various programs to help dislocated workers get the certification and qualifications needed for today's jobs.

Workforce Development

Licking County's partners in economic development understand that workforce factors are central to any business location or expansion decision. Partners have come together to meet the needs of business and industry in the area, they are Workenomics and Opportunity Links. Workforce Developers include CTEC, COTC/OSU, Licking County Job and Family Services, Ohio Department of Job and Family Services and LICCO Inc.

Workenomics

Workenomics™ is Licking County's marriage of workforce development and economic development efforts designed to respond to business workforce needs. Its intent is to introduce Licking County's already-strong workforce development system early on into the corporate expansion and site location decision making process.

WORKENOMICS

Workenomics has been a success, in a relatively short time it has become a recognized statewide model for how to marry workforce and economic development efforts to achieve a coordinated approach to business attraction and workforce development in Ohio's counties.

Licking County Employment and Training Center

Today, Licking County's civilian labor force is approximately 81,100 with a rate of 4 % unemployment, below the state and national averages of 5% unemployment.

Every county in Ohio has a designated One Stop System. Licking County's One Stop is Licking County Employment and Training Center, (formerly Opportunity Links). Licking County Employment and Training Center is dedicated to assisting job seekers and employers with all their employment and training needs.

- **Job Seeker Services (no cost)**
  - Access to job leads: e-mail blast (reaches over 3,000 job seekers daily), Hot Jobs, Ohio Means Jobs, Resource Room Bulletin Boards.
  - Resource Room
  - Training
  - Interviewing Assistance
  - Resume Building
  - Free Internet Access for Job Search & Training
  - Job Search Workshops
  - Career & Skill Assessments
  - Exploration of Local Training Programs & Educational Institutions
  - Job Fairs
  - Employer Recruitments
  - Post Jobs Locally & Statewide: e-mail blast (reaches over 3,000 job seekers daily), Hot Jobs, Ohio Means Jobs, Resource Room Bulletin Boards, & Radio (when available).
  - Workforce Reduction Services
  - Upgrade Employee Skills with Customized Training
  - Participate in Job Fairs & Employment Expos

- **Employer Services (no cost)**
  - Access to Diverse Labor Pool
  - Find Job Seekers with Specific Skills & Education
  - On-Site & Off-Site Recruitment Opportunities

- Interview Pre-Screened Applicants
- Free Advertising of Job Leads
- Access to Diverse Labor Pool
- Find Job Seekers with Specific Skills & Education
- On-Site & Off-Site Recruitment

Incentives & the Package

In Licking County many partners work together to provide the best package for existing and new businesses. This may be through developing trained workforce via the Workenomics, hosting job training and job fairs for new or expanding businesses, or building a package of incentives.

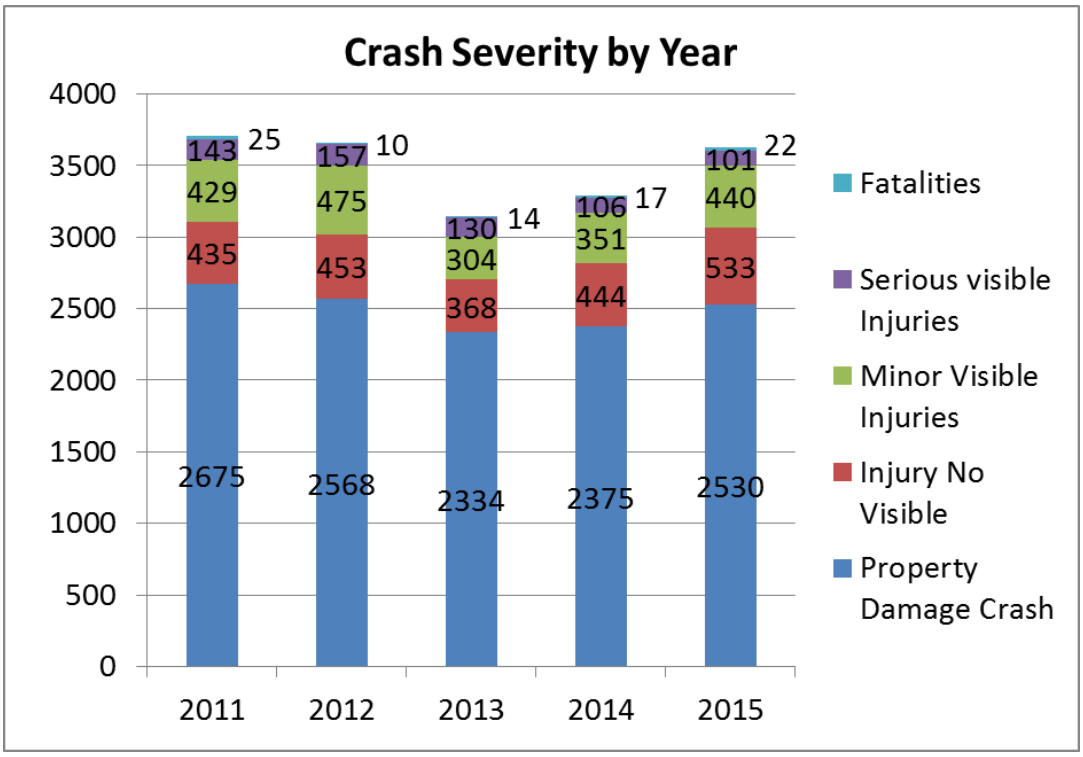
Licking County is again taking another step forward by developing a Community Investment Corporation (CIC) to be the clearing house/front door for economic development. This entity will help coordinate all the great efforts throughout the county as well as facilitate various projects. This front door approach will provide a streamlined approach for new companies needing information. LCATS will be a resource to the CIC and provide input data and analysis as needed.

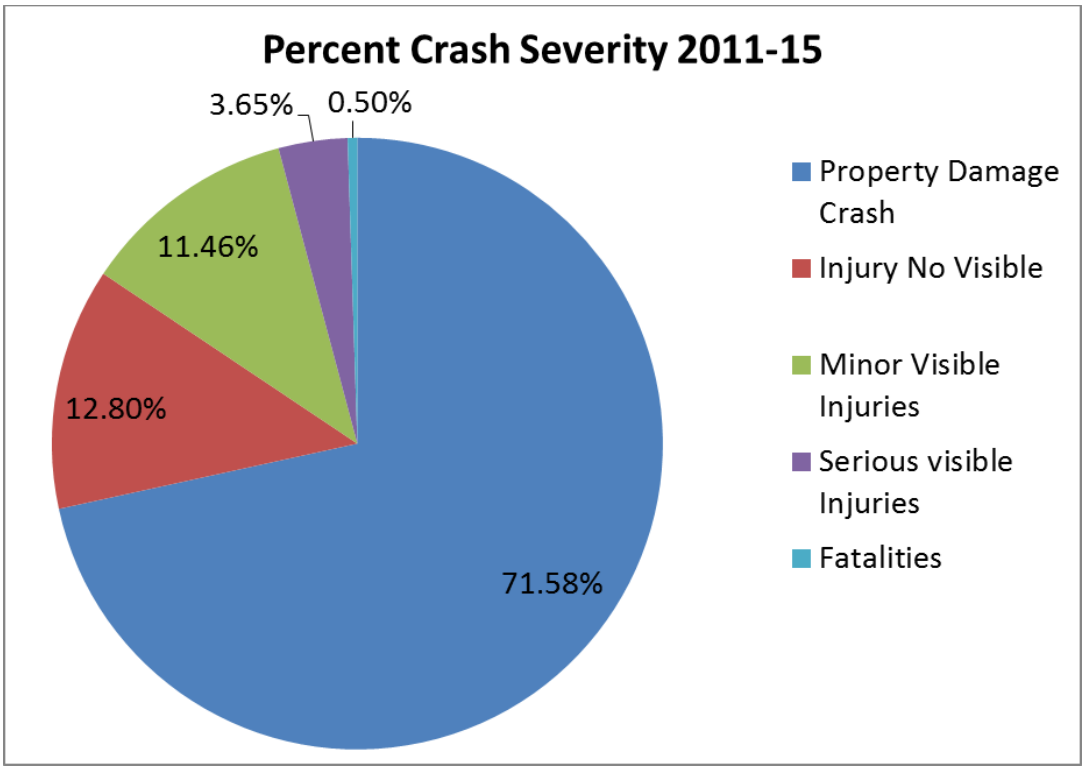
Examples of financial packages may include establishing a TIF district, selling bonds, backed by TIF revenues, tax incentives and revolving loans at a local level, assistance in obtaining Ohio Job Creation Tax Credit, Ohio Investment in Training Program, Business Development 412 Grant Account/Rapid Outreach Grant, 166 Direct Loan, Incumbent Workforce Training, Ohio Investment in Training Program, Manufacturing Machinery and Equipment Sales Tax Exemption, Employment Pre-Screening Testing and Recruitment Services. These are some of the various programs and assistance that is offered to businesses entering Licking County.

SAFETY

SAFETY PLANNING

LCATS takes safety planning very seriously. We aggressively pursue safety projects and safety planning. We also use non-safety funds, such as CMAQ, towards overall safety improvements in congested areas. LCATS employs the four E's of safety: Engineering, Education, Enforcement and EMS. We partner with other stakeholders to improve the overall safety of the transportation system. The reason we strive so aggressively for safety is to save lives and reduce injuries.





Since 2004 LCATS has performed or partnered in 51 safety studies of varying complexity. From signage improvements at minor rural intersections or roadway segments to major interchange modifications. Over the 2015 calendar year the Licking County Engineers Office in cooperation with LCATS was selected for an ODOT Pilot Project to reduce rural Run-Off-Road & Intersection crashes and severity along the county and township roadway system. While the project is about to be implemented the safety analysis shows this project could have very positive impacts in reducing crashes and injuries.

Of the 51 safety locations analyzed 24 of the significant studies have resulted in the annual reductions of 122 Property Damage Crashes, 75 Injury Crashes and four Fatal Crashes. There are currently two projects pending Beaver Run Road which had a wet skid related issue and Welsh Hills Road which during the 2015 resurfacing received six inch edge lines to reduce the night and wet weather crashes.

Currently under design is the Two Way Left Turn Lane along (Coshocton Street) in Johnstown and the North Ridge Road safety edge for the calendar year 2016 resurfacing.

Should the six inch edge lines and the safety edge reduce crashes and crash severity both will become County Road standards during future resurfacings.

Access Management Corridors

As communities grow, the need for consistent access management practices is amplified. More volumes of traffic can travel along roadways with fewer conflict points. In addition, fewer conflict

points increases safety since most accidents occur at intersections during conflicting movements in urbanized areas. Within LCATS several of our high crash corridors have access management problems. These include State Route 79 from Hebron to Newark (predominantly in Heath), 21st Street in Newark, and other smaller sections of roadways or specific intersection areas. The use of access management techniques and the adoption of access management guidelines by local jurisdictions can be a cost effective way to maintain the capacity of a roadway and to reduce crashes.

City of Newark's Local Process

LCATS supports the City of Newark's annual crash review. Approximately every March the City of Newark's Community Development and Police Department review the previous year's ten intersections with the most crashes. Depending on potential need and solutions, LCATS may become involved with performing or funding a formal study.

Licking County Engineers Process

LCATS supports the Licking County Engineer's review of the previous year's crashes on all county roads. The roads are then prioritized by total number of crashes, crash rate, injury rate and number of fatalities.

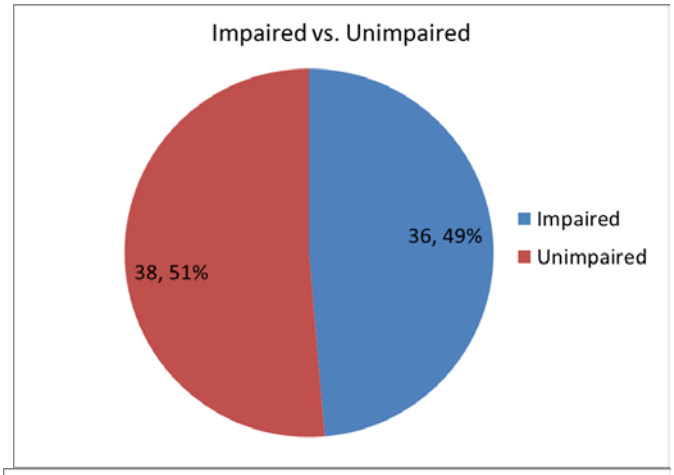
62% of driver fatalities contained one or more impairing substances.

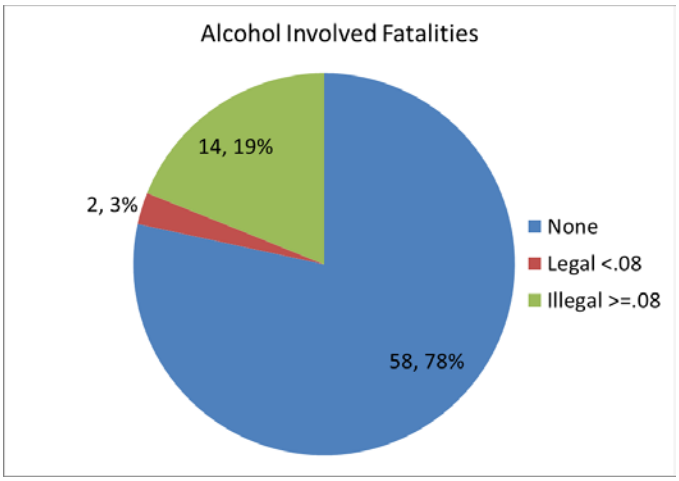
Pedestrian & Bicycle Safety-Safe Routes to School

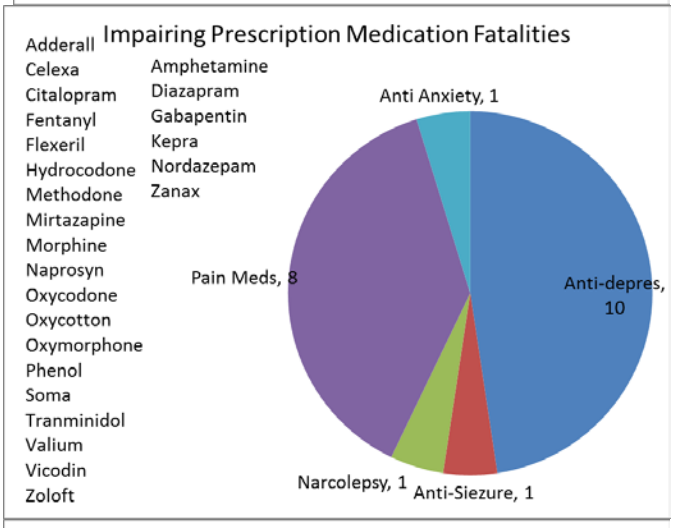
Another aspect of LCATS Safety Program includes promoting bicycle and pedestrian safety. LCATS has partnered with the Licking County Health Department to offer an annual event called 'Change Gears, which supports safe and healthy bicycle riding. It is held the first Saturday of June each year. LCATS also owns a speed trailer with the intent of using it in pedestrian conflict areas and areas that have a history, or perception, of speed related issues. During the spring and fall, priority is given to Safe Routes to School locations and helping to promote and insure safe crossing areas for children. Other target uses include summer fairs and seasonal outside events. Locally, many municipalities and school districts in the urbanized areas of the county are moving forward in developing School Travel Plans and developing a Safe Routes to School program.

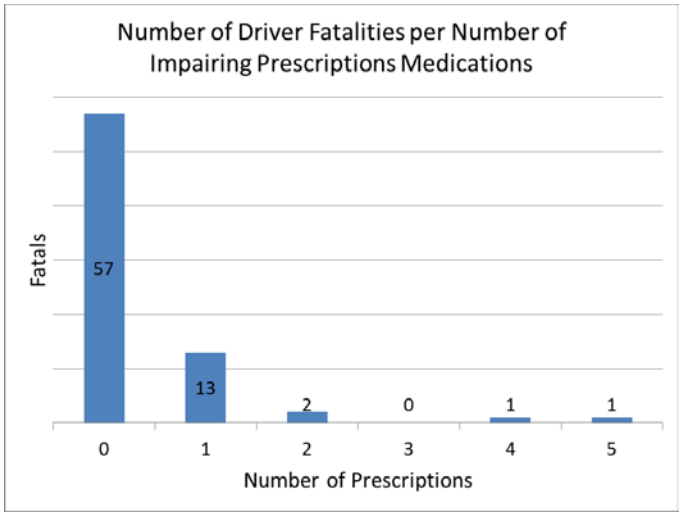
SAFETY EDUCATION

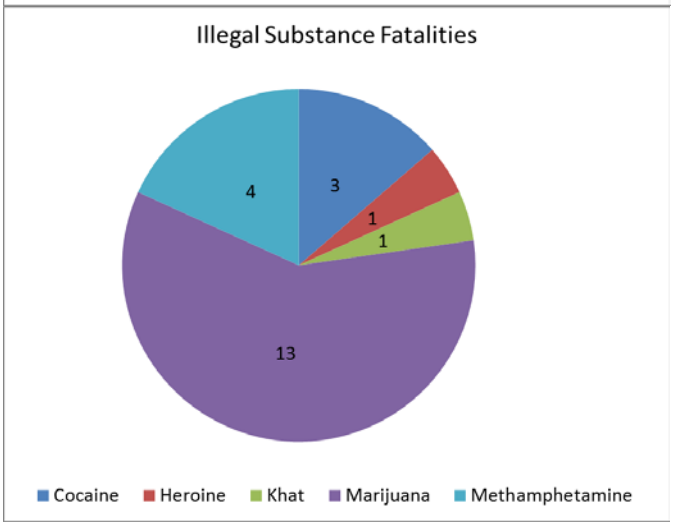
Since 2005, LCATS has participated in the Licking County Fatality Review committee. Since 2007 this committee has tracked all forms of impaired driving and reported it. From 2007 – 2010, Licking County had 71 total on road fatalities with 61 driver fatalities. Of the 61 driver fatalities 46 (75%) contained one if not more impairing substances. Of these 27 were alcohol, 17 were illegal substances, 17 were prescription substances and ten were over the counter. Numerous of these fatalities included multiple impairing substances and the combining of multiple different impairing substances. Of the 61 driver fatalities 2007 through 2010 only 18 had no impairing substances. See graphs below.

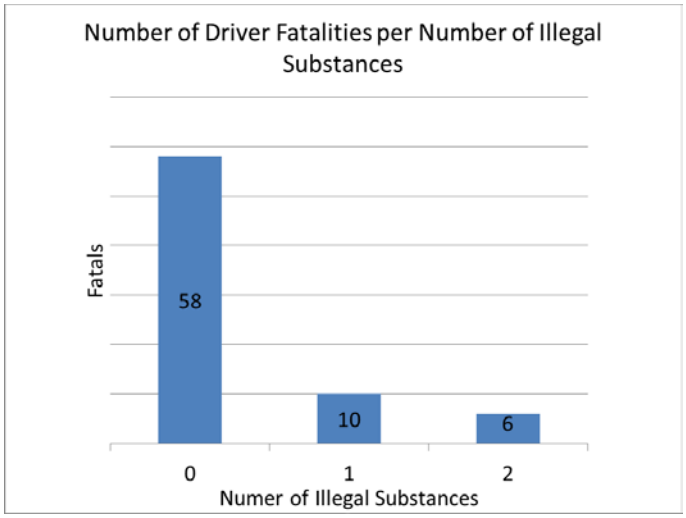

Impaired vs. Unimpaired
36, 49%
38, 51%
Impaired
Unimpaired

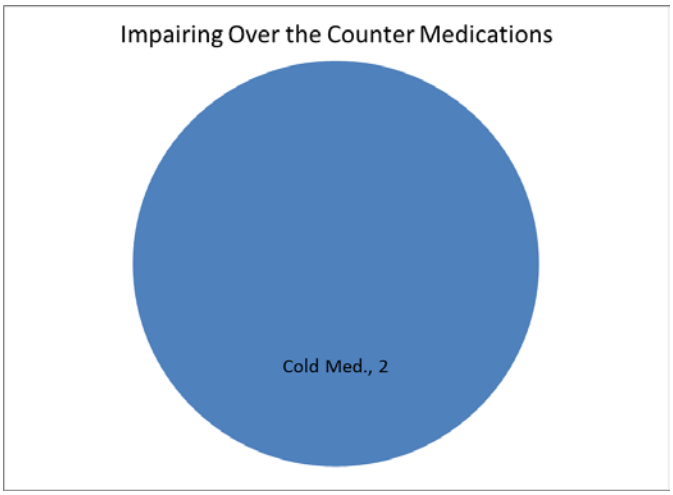

Alcohol Involved Fatalities
14, 19%
2, 3%
58, 78%
None
Legal <.08
Illegal >=.08

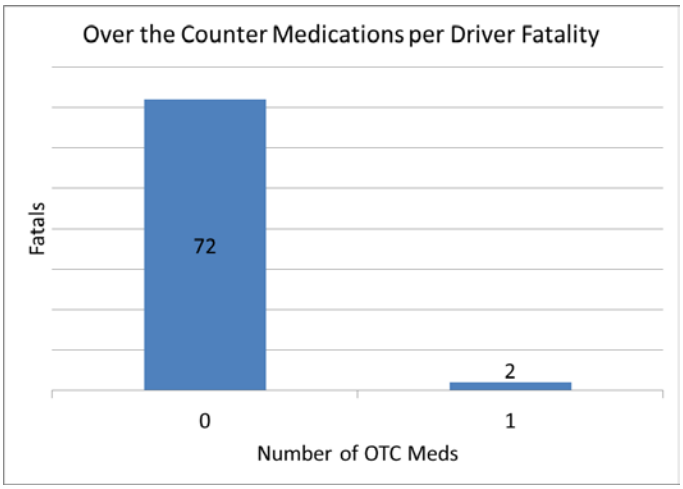

Impairing Prescription Medication Fatalities
Adderall
Celexa
Citalopram
Fentanyl
Flexeril
Hydrocodone
Methodone
Mirtazapine
Morphine
Naprosyn
Oxycodone
Oxycotton
Oxymorphone
Phenol
Soma
Tranminidol
Valium
Vicodin
Zoloft
Amphetamine
Diazapram
Gabapentin
Kepra
Nordazepam
Zanax
Anti Anxiety, 1
Pain Meds, 8
Anti-depres, 10
Narcolepsy, 1
Anti-Siezure, 1


Number of Driver Fatalities per Number of Impairing Prescriptions Medications
Fatals
57
13
2
0
1
1
0
1
2
3
4
5
Number of Prescriptions

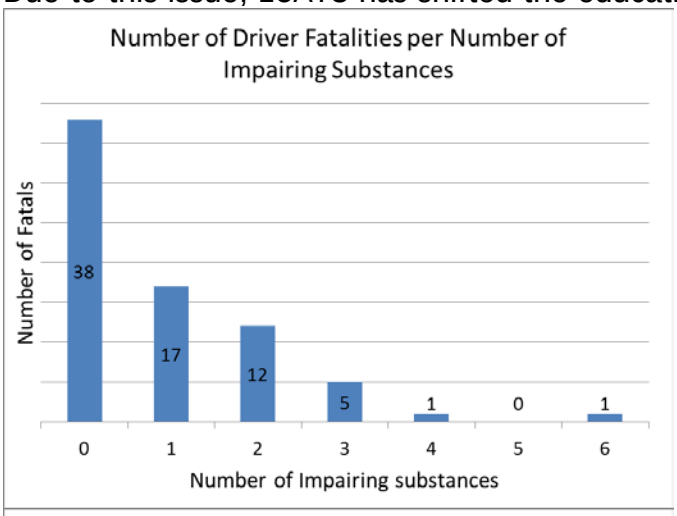

Illegal Substance Fatalities
3
1
1
13
4
Cocaine
Heroine
Khat
Marijuana
Methamphetamine

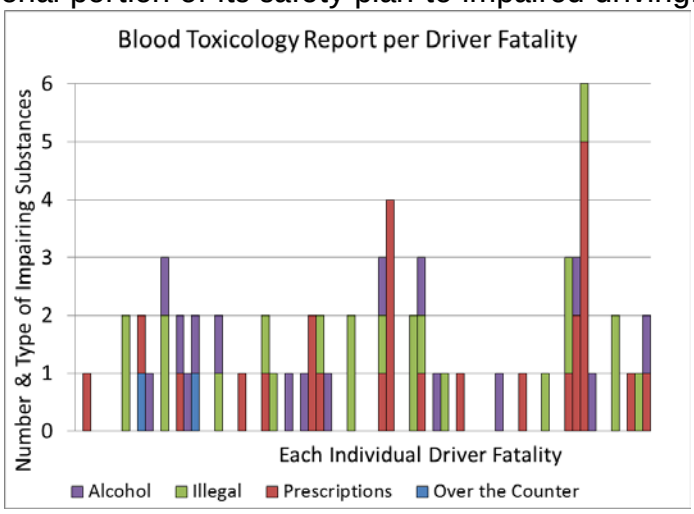

Number of Driver Fatalities per Number of Illegal Substances
Fatals
58
10
6
0
1
2
Numer of Illegal Substances

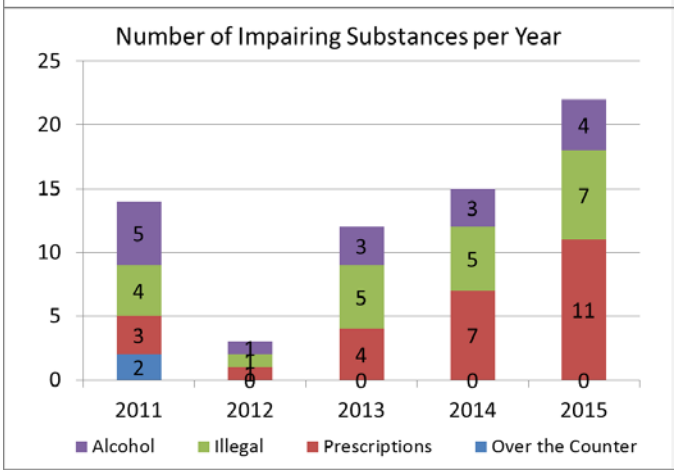


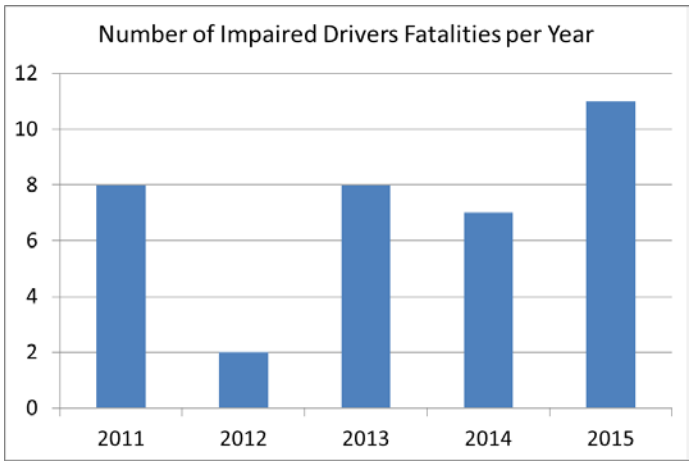


Due to this issue, LCATS has shifted the educational portion of its safety plan to impaired driving.









URBAN vs. RURAL CRASH TRENDS

While the crash trends of OVI, seatbelt usage and deer crashes are typical in both the urban and rural settings other crash types prevail in urban and rural settings. The Licking County area has distinctly different rural and urban crash types.

In the urban area, Red Light Running (RLR) is a significant contributor to crashes. In comparison, Run-Off-Road (ROR) events are a significant contributor to rural crashes.

These two trends, urban RLR and rural ROR crashes, account for the majority of crashes in the LCATS study area. LCATS is also very mindful of these crash trends when they participate in a project scope development. The best way to prevent future engineering safety problems is to be proactive in design during the day to day activities.

To show progress towards these crash types in 2009 Licking County was ranked 85 out of 88 counties, third worst in the State of Ohio, for rural ROR crashes and as of the spring of 2015 we are ranked 45.

While our before vs. after crash analysis shows a reduction in the urban area of 107 intersection crashes annually.

SECURITY

Since the September 11, 2001 terrorist attacks and the effects of Hurricane Katrina on the Gulf Coast in August 2005, the nation has a heightened awareness of the destruction of both man-made and natural disasters. On a national level, there is an effort to develop a "Comprehensive national approach to incident management, applicable at all jurisdictional levels and across functional disciplines, would further improve the effectiveness of emergency response providers and incident management organizations, across a full spectrum of potential incidents and hazardous scenarios" <Homeland Security Act of 2002, Section 2(6)>

As the Metropolitan Planning Organization (MPO), LCATS is responsible for preparing the long range Transportation Plan and the Transportation Improvement Program (TIP). We recognize that the transportation infrastructure is a vital element to the overall security of the citizens, but we are not the appropriate lead agency in regional security planning. LCATS is best suited to support and coordinate with local agencies responsible for emergency management, disaster preparedness, and homeland security. Recognizing the need for all types of agencies to work together, LCATS is committed to the efforts of the Licking County EMA and others on their security initiatives and is available to provide technical assistance.

LCATS supports and recognizes the efforts undertaken by other agencies in the interest of transportation security and disaster and emergency preparedness:

- Interstate 70 and the interchange at SR 79 periodically floods. This portion of roadway was built within the floodplain. The closure of this roadway causes disruption to local communities and disrupts interstate commerce. The Village of Hebron, Licking County EMA, ODOT, LCATS, and Village of Buckeye Lake met to develop a 'playbook' to handle the various closures and routing options. A 'playbook' was developed and a call tree system was implemented to notify of impending closures. This notification also allows for the local school district to release early, preventing busses from being 'stranded' in the congestion on US 40, the parallel route. Part of the playbook allows for semis, with their higher road clearance to continue on the interstate while passenger cars detour to US 40, reducing congestion and keeping commerce moving.

The Licking County Local Emergency Planning Committee (LEPC) conducts annual exercises to test their planning. These exercises allow for diverse response agencies to work together, in advance of a disaster, to improve their performance during an actual event.

In the future, LCATS is looking forward to working with other local agencies in developing a flood-crossing map. The map will be developed in cooperation with agencies responsible for water bridge crossings and the local EMA and Homeland Security office. Flooding is one of the most likely natural disasters to impact a large area of the county. A significant portion of Licking County is in the floodplain, as indicated by the following map.

FEMA FIRM Floodplain Map, Effective March 16, 2015

TRANSPORTATION SYSTEM PROFILE

HIGHWAY

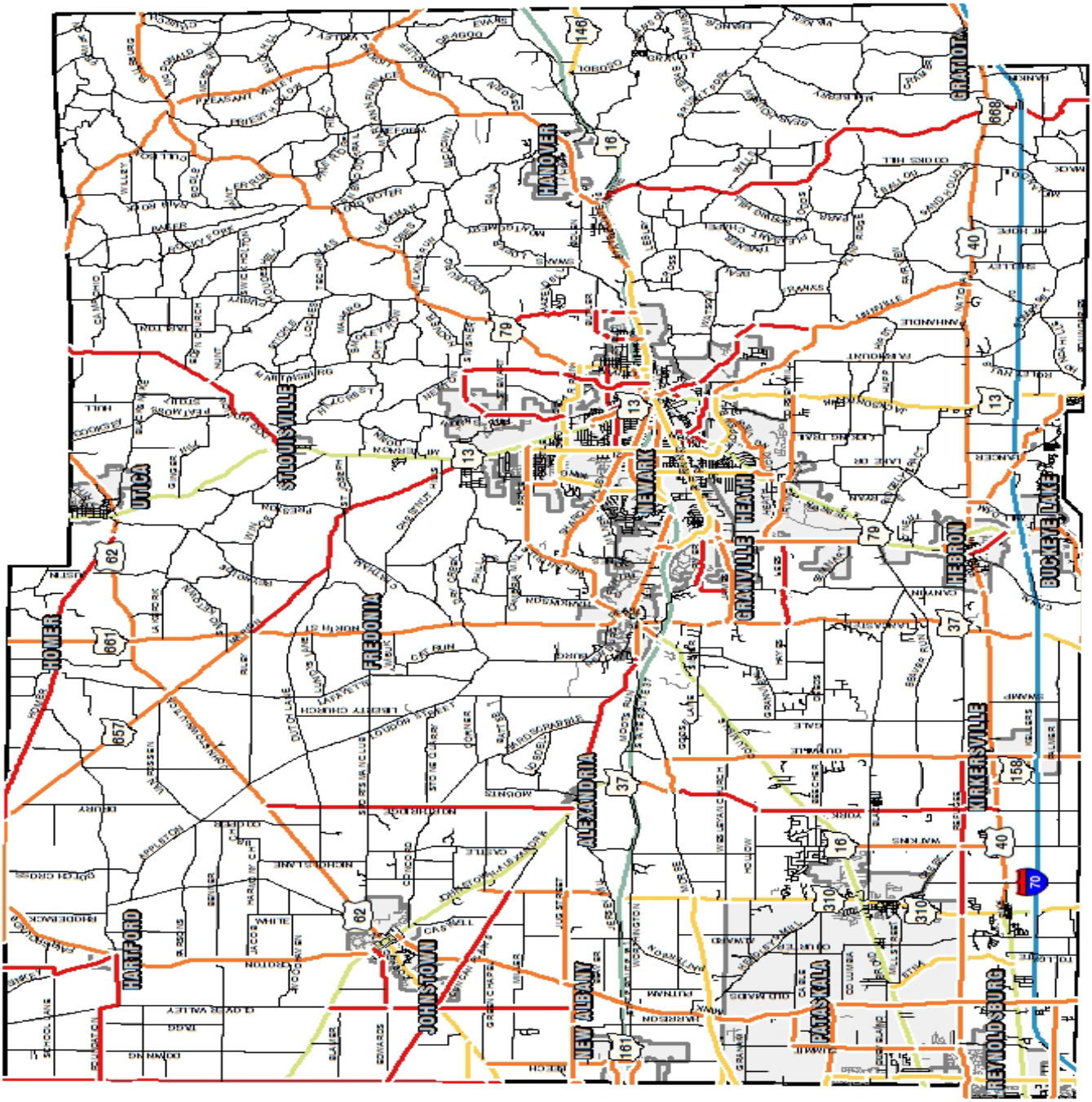
FUNCTIONAL CLASSIFICATION

Highways are classified based upon their ability to move traffic and the access they provide to the adjoining land. Typically, the higher classification should reflect a larger movement of traffic and a restricted access to land, while the lower classifications provide movement of traffic to a smaller number of vehicles with virtually unlimited access to the adjoining land. The table below lists the functional classifications and their descriptions.

ROADWAY CLASSIFICATION	Description
Major Arterial	Generally carry long distance, through-travel movements. Access limited to major traffic generators, such as a major airport or regional shopping center. Traffic moves at fast speeds on major arterials, with 55 mph usually being the minimum speed.
Minor Arterial	Similar in function to a major arterial, except they carry trips of shorter distance and will allow access to lesser traffic generators. Traffic moves at relatively quick speeds, with 45 mph being the minimum speed.
Collector (major and minor)	Collector roads "collect" traffic from lower order roads and take them to Arterials. Collectors provide more access to land use than arterials, but not as much access as local roads. Often, access provided will be shared, or will be to service roads, etc. Traffic speed will vary on collector roads from 35 mph to 55 mph.
Local (aka lower order)	Local roads provide direct and immediate access to land. Such roads are usually residential in nature, such as those found in residential subdivisions. Traffic moves slowly along local roads, rarely exceeding 35 mph. The majority of roadway miles in Licking County are local roads.

In Licking County roadways are classified predominantly to achieve access management techniques. The map on the next page shows the functional class for Licking County roadways included in the Licking County Development Regulations. Other functional classification and access management plans also exist and follow a similar hierarchy of classifications. There is a federal aid system, which is similar, but differs, that is used to determine eligibility for federal funds. Only federally classified roadways above a minor collector are eligible for most federal transportation programs.

2015 Road Classification

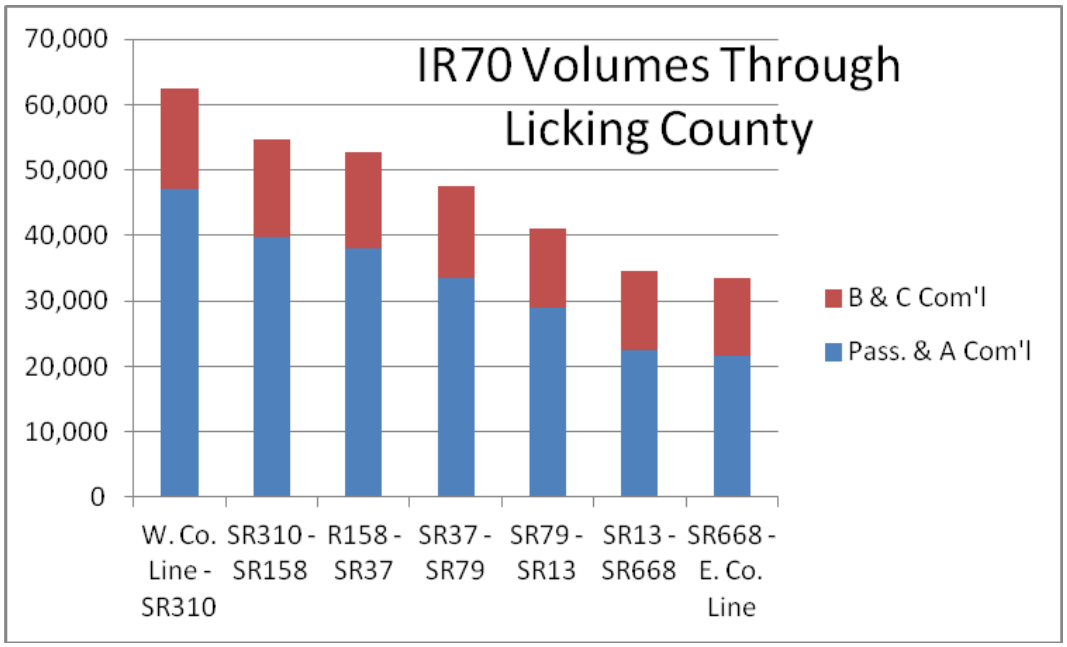


EAST – WEST ROUTES

Licking County has an excellent east-west highway system connecting to the Columbus region and Zanesville.

INTERSTATE 70

Interstate 70 stretches approximately 30 miles throughout southern Licking County, providing access to Columbus on the west and to Zanesville on the east. As the graphs below show, the amount of traffic is heavier on the west side of the county than on the east side.



The Far East Freeway study recommended that the current 4-lane section between SR 256 and SR 79 add two additional lanes. In the latest transportation bill, SAFETEA-LU, a new program called Corridors of the Future was initiated. Approximately, five multi-state corridors were selected across the country. Interstate 70 from Missouri to West Virginia was one of the selected corridors. One possible future option is to build freight only toll lanes along the corridor.

COLUMBUS-PITTSBURGH CORRIDOR (STATE ROUTE 161/37/16/US36)

Ohio State Route 161 extends from the far west side of Franklin County east to central Licking County, ending near the Village of Alexandria (where it becomes Ohio State Route 37). SR 161/16 is identified as a "macro-corridor" on ODOT's Access Ohio Statewide Transportation Plan. These high priority routes generally receive priority for maintenance and improvement as well as snow and ice control.

Through the City of Newark and eastern Licking County SR 16 is a four lane divided highway, to Ohio State Route 146. SR 161/37/16/36 is a major arterial and is part of the National Highway System.

The State Route 16 and Cherry Valley Road at grade intersection along the 4-lane portion has been a safety concern for a number of years. Currently, construction is underway to create a safer more efficient interchange that is scheduled for completion October 2016. LCATS funded Steps 1-4 of the major Project Development Process with the intention of converting the at-grade intersection to an interchange. In April 2006, a well-attended public involvement meeting was held. Based on engineering studies, preliminary environmental studies and public involvement an alternative was recommended. The recommended alternative is to cul-de-sac the existing intersection; build an interchange to the east of the existing intersection. Fortunately, this location is on property that was previously purchased by ODOT for the State Route 157 corridor. The completion of an interchange at Cherry Valley Road will eliminate the only future at-grade intersection between IR 270 and the east side of the City of Newark.

OHIO STATE ROUTE 16

Within Licking County, Ohio State Route 16 extends from the City of Reynoldsburg on the southwest to the Licking - Muskingum County line on the east. It passes through the City of Pataskala, the Village of Granville, and the City of Newark. Between Taylor Road (on the far southwest side of Licking County) to where it meets SR 161/37 in the Village of Granville, SR 16 is a two-lane road. This 2-lane section of State Route 16 carries high volumes of commuter traffic into the Franklin County daily and also serves as a major part of the roadway network in the western portion of the county.

NORTH - SOUTH ROUTES

While Licking County has strong east-west connections, our north-south connections are primarily 2-lane facilities. Several are needed to meet the demand.

THORNWOOD DRIVE

Located in the center of Licking County, and connecting SR 79 to SR 16 is the Thornwood Drive Corridor. This corridor is currently under development for improvements and upgrades. Construction plans have been partially completed and an environmental clearance has been approved. Funding for this project is uncertain. It is likely that the project as proposed will need to be scaled back. Potential reductions may occur in the paved shoulder width and grading. This could reduce the overall construction cost and reduce the impacts and cost of right of way acquisition. This project has been developed jointly between the City of Newark, City of Heath, and County Engineer utilizing LCATS federal fund and local funds. This is an important part of the connection necessary to entice development along this valuable corridor. It is currently under development, the City of Newark is currently developing plans for the replacement of the Raccoon Creek bridge. The last section to be upgraded would be Thornwood Dr. itself.

OHIO STATE ROUTE 79

Located in the center of Licking County, Ohio State Route 79 is one of the major north-south corridors for the county, providing access from Interstate 70 to the Village of Hebron, the City of Heath, and the City of Newark. State Route 79 is a major arterial and is part of the National Highway System.

The southern portion of SR 79 serves two large industrial parks, the Newark Industrial Park in the Village of Hebron and the Mid-Ohio Industrial Park in the City of Heath. Within the City of Heath, SR 79 serves a heavily developed retail commercial area. Because of the high traffic volumes and the many access points along SR 79 in the City of Heath, there was heavy congestion and a significant safety problem. In 2012 a median was added from Hopewell Dr. to the Radian/Putnam Intersection. This has reduced crashes and severity of crashes significantly and improved the flow of traffic greatly:

OHIO STATE ROUTE 13

State Route 13 (from SR 16 north) is part of the National Highway System and is classified as a minor arterial. It carries through traffic from the City of Newark to the City of Mount Vernon in Knox County and then north to IR 71. Within the City of Newark, traffic moves poorly on SR 13. However, there seems to be little congestion problems to the north of the city.

Currently, SR 13 over SR 16 operates as a one-way pair with different designations for northbound and southbound. The City of Newark currently has plans to widen the current SR 13 (Mount Vernon Road) bridge over SR 16 to allow for 2-way traffic. This project will also require some intersection upgrades at the adjoining surface streets. A combination of LCATS funds, local funds and non-traditional funding will be utilized when the project begins in the summer of 2016.

OHIO STATE ROUTE 37

State Route 37 is located in the central part of Licking County. It is a 2-lane facility that connects Fairfield/Lancaster to IR 70 near the south entrance to the county. It also serves as a straight shot from an interchange on IR 70 to an interchange on the SR 161/16 corridor. This section of 2-lane roadway needs to be protected from congestion by strictly enforcing access management regulations and techniques. In addition, the intersections along State Route 37 need to be improved so they do not become major safety and choke points.

LOCAL HIGHWAY NETWORK

While the bulk of the traffic volume is carried by major roadways, the local road network is critical in providing access to the major roadways. In our community this network responsibility falls to local municipalities, townships and the County Engineer. These roadways range from heavily used roadways, such as 21st Street, which carries 36,752 vehicles per day to dead end gravel township roads. In general neighborhood city streets and township roads carry less traffic than higher classified city or county roads.

Below is a table showing the amount of centerline roadway that each jurisdiction is responsible to maintain, provide snow & ice control, and maintain the surface.

Jurisdiction type	2-Lane Centerline Mileage	Multi-Lane Centerline Mileage	Total Lane Mileage
State	198	68	670
County	412	0	824
Township	726	0	1453
Municipal	726	22	1541
Total	2063	90	4487

BRIDGES

In 2007 Licking County had 573 bridges on the state bridge inventory. As of the writing of this document in 2016 Licking County has 721 bridges on the state bridge inventory. Eight of these bridges were built in 2009 & 10 with the newly constructed SR161 limited access corridor. Six bridge were transferred to the Licking County Engineers Office with the old SR161 now CR162. The remaining 134 bridges were never added to the state bridge inventory after construction. All of the newly found bridges are on either County or Township roadways. These additional 134 bridges are all the responsibility of the County Engineers Office. Many of these bridges were built in the 1970s and 1980s and were not inspected from the time they were constructed until they were found. Once these bridges are found, they are often immediately load reduced or closed due to their poor shape. The Licking County Commissioners have agreed to help defray the cost of engineering and reconstructing these additional bridges.

The large number of bridges being added to the state bridge inventory makes comparing past and current Bridge General Appraisal (GA) not feasible. In the future the GA will be used to track when bridges need repaired or replaced with the ultimate performance measure of there being no bridge with a GA of three or less by 2019.

TRANSIT AND PEOPLE MOBILITY

Residents of Licking County rely on a transportation network to get them to work, school, social events, and medical appointments. It is critical that each resident have the capability to reach needed destinations. For many, this is accomplished by traveling in a passenger vehicle. For those without access to car, they must rely on friends, transit, or bicycle pedestrian facilities. This may be by choice, economic reasons, medical reasons, or for legal reasons. Licking County is fortunate that we have a transit system that covers the entire geographic area of the county, recognizing that needs exist everywhere.

As the population ages, they become less mobile. The baby boomers are just approaching age 65. The ‘wave’ is coming and will place additional needs on social services like transportation. This generation of seniors is different than previous generations. They have lived during a time of great change, a time of migration from the center city to the suburbs. Now, they are spread across larger

land areas, and desire to stay in their homes longer. They are also a much more active and social generation. They are advocates for all types of causes, and yet they are facing mounting needs as they age. One of the main needs will be transportation and transportation options.

Consider the following demographics of those over age 60 in Licking County:
In 2000 – 16.2 %
In 2010 – 19.8 %
By 2020 – 23 %

Our current transit agency operates demand response systems. This requires that an individual call and schedule a pick up and return trip. While this provides customization to meet the individual's needs, it does not allow for spontaneity. This system has seen significant increases in the last few years. This can be attributed to many factors: consolidation of social service agencies, coordination between human service providers, advertising, increased fuel costs, downturn in the economy leading to loss of personal vehicles. While the overall ridership has increased, the largest increase has been in those passengers that qualify for Elderly and Disabled (E&D) fare rates. This is just the beginning of this trend.

Current Public Transit Provider:

Licking County Transit Board (LCTB) provides public transportation services Monday through Saturday from 6:00 a.m. to 6:00 p.m. for those residing in Licking County, including the cities of Newark and Heath. One-way trips are $5.00 if scheduled in advance. Trips provided on-demand, if room in the schedule, are $6.00 one-way. Disabled citizens and senior citizens 65 and older receive a ½ fare discount ($2.50 and $3.00 respectively).

The LCTB is also the lead agency in the coordination of transportation services. Over 34 social service agencies and non-profit groups work together to provide transportation services to their clients.

Car and Vanpool Information:

Mid-Ohio Regional Planning Commission (MORPC) administers the RideSolutions Program. For travel to jobs inside and outside of Licking County, RideSolutions can help find a carpool or vanpool. RideSolutions ride match services are free to all commuters working anywhere in the 11 county service area: Licking, Knox, Franklin, Delaware, Marion, Fairfield, Pickaway, Ross, Fayette, Madison and Union Counties.

The program also includes a guaranteed ride home feature at no additional cost (up to four times per 12 month period). This feature serves as a safety net in case participants have unexpected needs that require them to leave early or stay late.

Private For-profit and Non-Profit Transportation Services:

There is an ambulance service located in Newark. Courtesy Ambulance is a transport company for both non urgent medical and urgent medical transport.

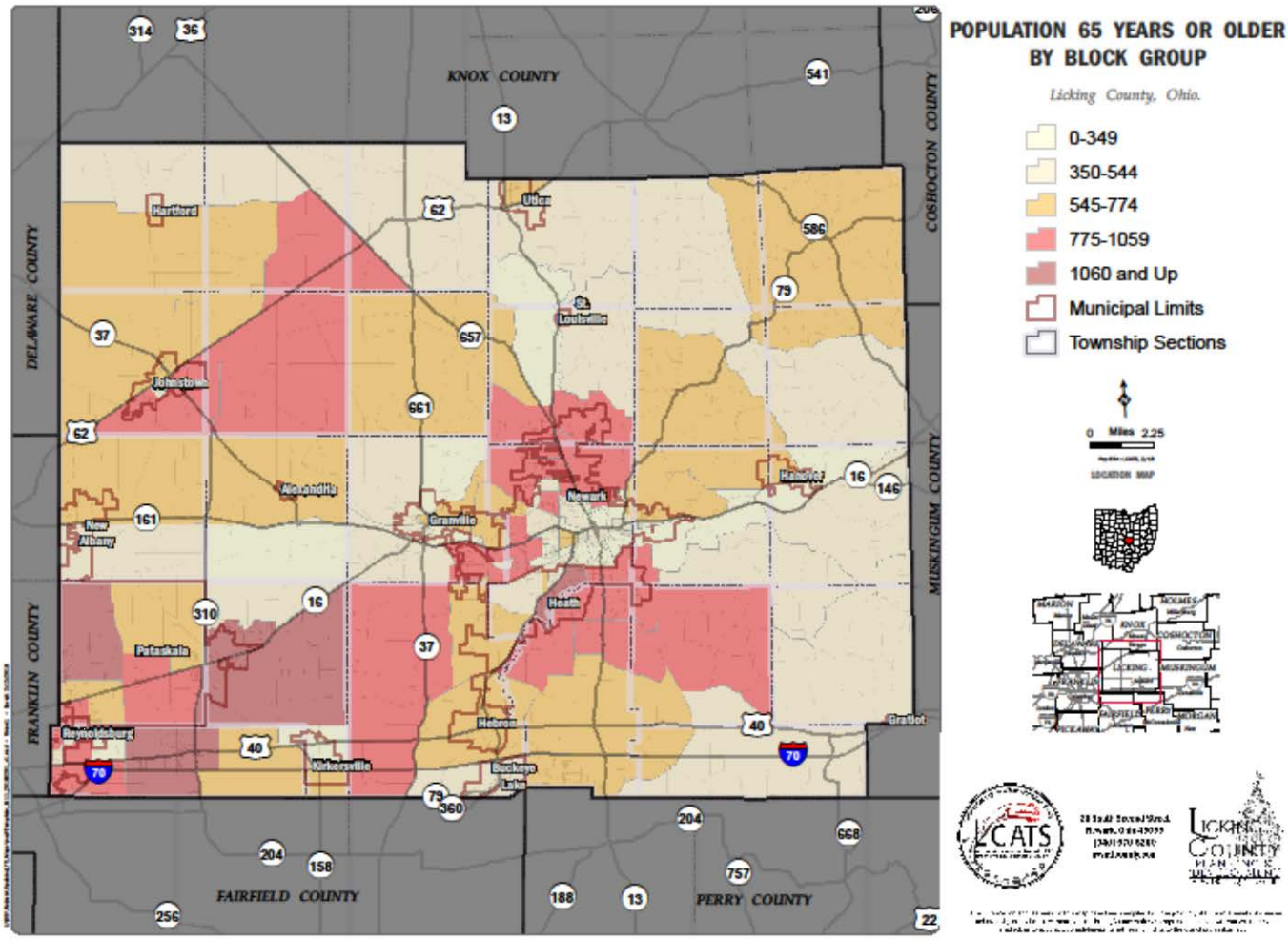
Several Social service agencies also offer transportation to their clients. Two of these are unique that they have joined into active coordination with the LCTB. Together with the LCTB these agencies pool funds to accommodate riders that have exhausted their normal source of transportation funds, and provide medical appointment/treatment trips. They utilize united Way funding and Senior Levy Funds to funds these needs.

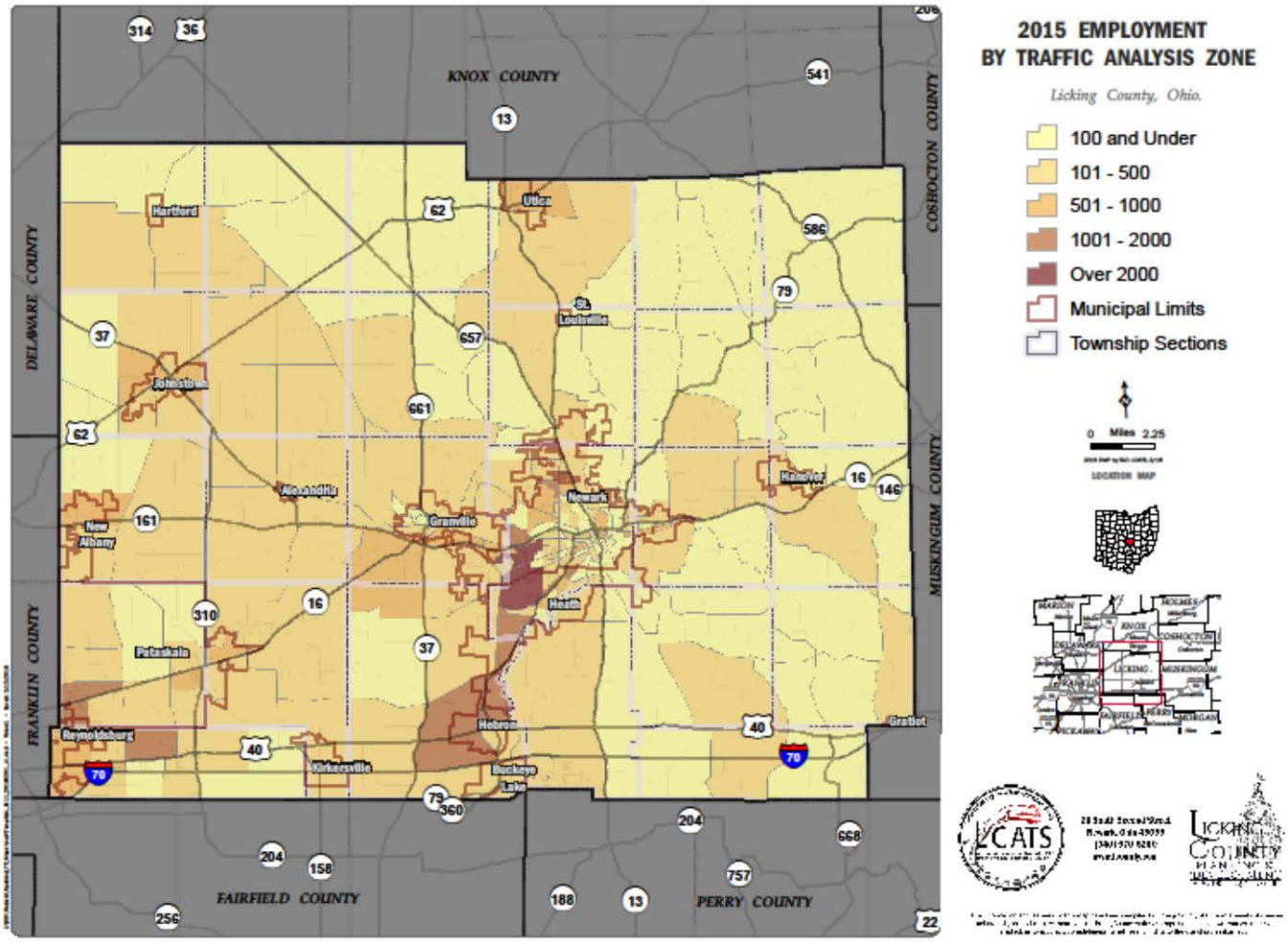
Licking County Aging Program (LCAP)
The LCAP provides rides to seniors over age 60 to dining facilities, medical appointments, and social outings. They coordinate by sharing trips, vehicles, knowledge, and provide training.

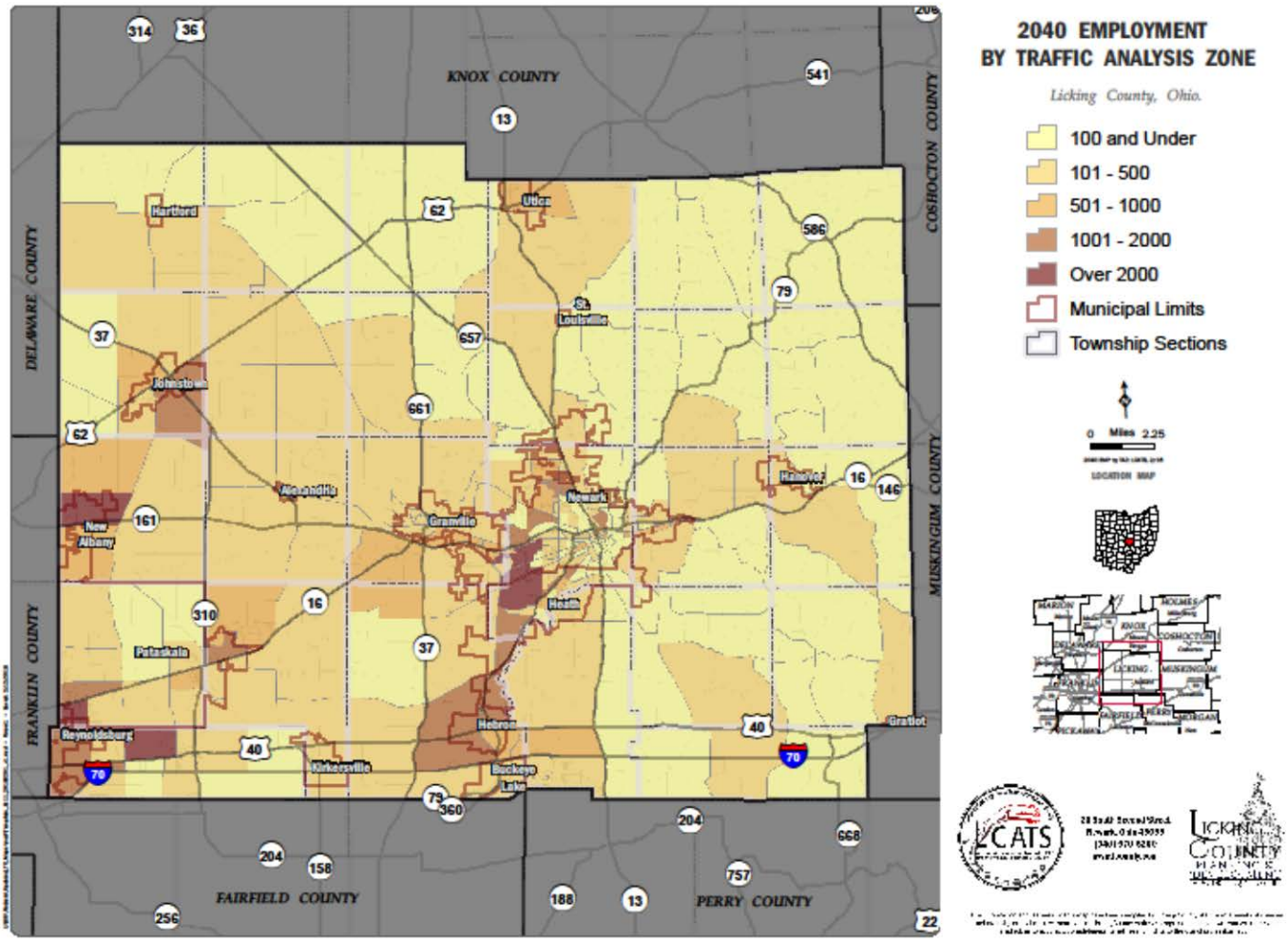
Catholic Social Services (CSS)
The CSS provides transportation to individuals over age 60 for medical appointments as well as for the Veterans Service Commission, regardless of the veterans age. They will provide trips to anywhere in the State of Ohio. CSS coordinates by sharing trips, knowledge and providing training.

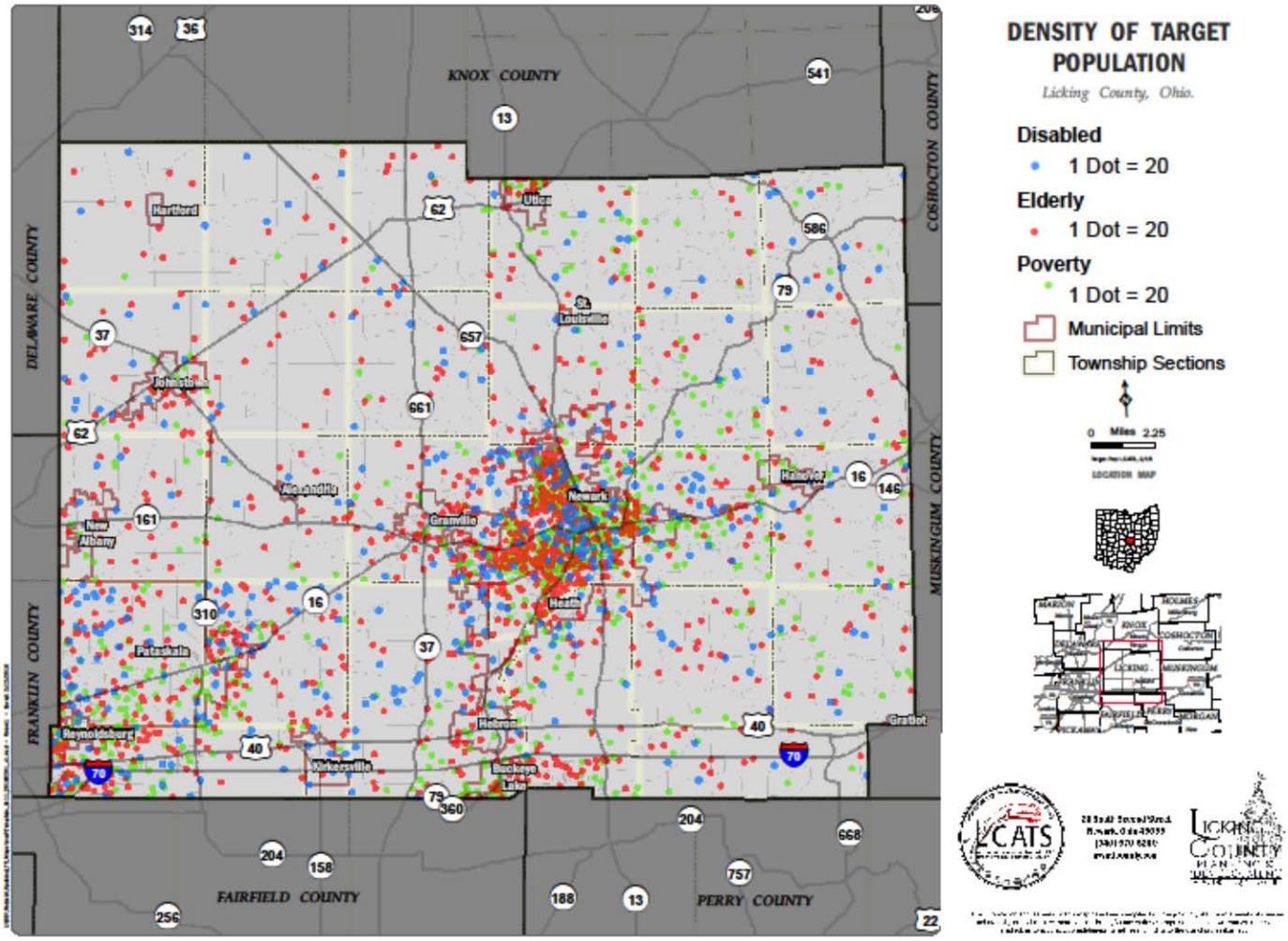
Future Needs of Public Transit-Human Services Transportation

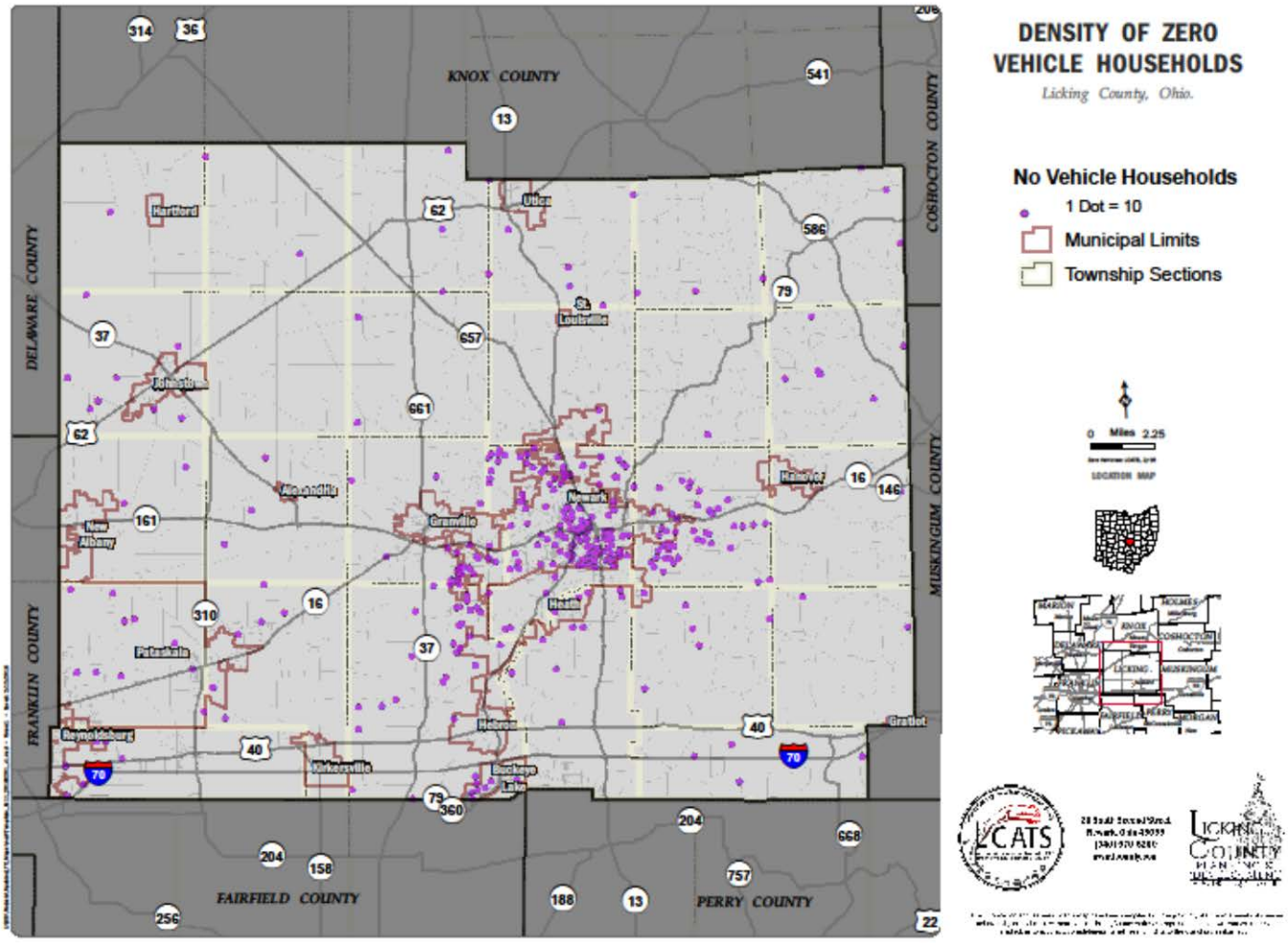
LCATS has had discussions with various advocates and sectors of the community. The highest needs for transit services exist in areas with higher than average elderly populations, population density, zero car households, and disabilities. These are the triggers for areas that have higher than normal needs for public transit. The following are maps of these factors:


POPULATION 65 YEARS OR OLDER
BY BLOCK GROUP
Licking County, Ohio.
0-349
350-544
545-774
775-1059
1060 and Up
Municipal Limits
Township Sections
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
DELAWARE COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FRANKLIN COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Newark
Hanover
Granville
New Albany
Heath
Pataskala
Hebron
Reynoldsburg
Kirkersville
Buckeye Lake
Gratiot
314
36
541
13
62
586
79
37
657
661
16
146
161
310
40
70
73
360
204
158
256
188
757
668
22
LCATS


2015 EMPLOYMENT
BY TRAFFIC ANALYSIS ZONE
Licking County, Ohio.
100 and Under
101 - 500
501 - 1000
1001 - 2000
Over 2000
Municipal Limits
Township Sections
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
DELAWARE COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FRANKLIN COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Granville
Newark
Hanover
New Albany
Heath
Pataskala
Reynoldsburg
Kirkersville
Hebron
Buckeye Lake
Gratiot
LCATS


2040 EMPLOYMENT
BY TRAFFIC ANALYSIS ZONE
Licking County, Ohio.
100 and Under
101 - 500
501 - 1000
1001 - 2000
Over 2000
Municipal Limits
Township Sections
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
DELAWARE COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FRANKLIN COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Newark
Granville
New Albany
Hanover
Heath
Pataskala
Reynoldsburg
Hebron
Kirkersville
Buckeye Lake
Gratiot
LCATS


DENSITY OF TARGET POPULATION
Licking County, Ohio.
Disabled
1 Dot = 20
Elderly
1 Dot = 20
Poverty
1 Dot = 20
Municipal Limits
Township Sections
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
DELAWARE COUNTY
FRANKLIN COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Granville
Newark
Hanover
New Albany
Heath
Pataskala
Reynoldsburg
Kirkersville
Hebron
Buckeye Lake
Gratiot
LCATS


DENSITY OF ZERO VEHICLE HOUSEHOLDS
Licking County, Ohio.
No Vehicle Households
1 Dot = 10
Municipal Limits
Township Sections
KNOX COUNTY
DELAWARE COUNTY
FRANKLIN COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Granville
Newark
Hanover
New Albany
Heath
Pataskala
Reynoldsburg
Hebron
Kirkersville
Buckeye Lake
Gratiot
LCATS

Coordination & Consolidation

There are multitudes of programs that provide transportation dollars to the community. According to a recent research study through ODOT there are over 60 programs in Ohio alone, many of these various federal pass thru grants. Obviously, the coordination and consolidation of these programs would provide greater service to the public. Many of these have different reporting requirements, years, and rules. Some allow using the same vehicle to serve multiple programs, and others do not. There are many misconceptions and fears of how different programs can be implemented together. There needs to be a clearinghouse of information to find out details about each program, so every county and agency is spending time learning the rules. A statewide consortium needs to be formed that explicitly works on breaking down these barriers and finding ways to consolidate programs and requirements. At the local and regional level there needs to be individuals skilled in sharing and developing coordination and consolidation efforts. Barriers need to be broken down to do away with territorial bias.

Human service agencies that specialize in aspects other than transportation as a core function of their operation should come to the table to learn from the transportation experts and share their expertise in social services and the needs of their clients. This will improve knowledge and overall understanding of the needs. Agencies without a focus on transportation should move toward consolidating their transportation needs into the organizations that are experts in transportation. As agencies are applying for more transportation resources they should be evaluated on their usage and coordination efforts as part of the selection criteria. Priority for additional vehicles and /or equipment should go to those that demonstrate the highest trips, miles, usage etc. Within Licking County some agencies have vehicles that are rarely used; while others run their vehicles daily and serve high numbers of clients.

Champions need to be recognized and small efforts and advances applauded. The attitude of move forward must be embraced. We all work for each other and the community.

Overlap of Services

To build efficiencies, agencies and resources must be coordinated and consolidated. This includes services, vehicles, drivers, schedulers/dispatches, computer systems, etc. This may mean group trainings, cost sharing of insurance for a pool of drivers, contracting overflow trips, consolidating contracts, eliminating transportation as a function within an agency. There is no one size fits all.

The intent is to improve efficiency, reduce costs, improve service, and serve the community. The target populations are: elderly, disabled and low-to moderate income.

Cost & Services

Savings from coordination and consolidation can be reinvested into lower fares or more services. In a time of shrinking revenues and increased fuel costs, even maintaining the same service at the same rate may be a victory. Through evaluation of existing needs, both met and unmet, along with a fiscal analysis will help determine what changes need made to service. Cost and service are

connected and provide a delicate balance. Part of the balance will be to provide service when and where it is needed.

Future services may include adding fixed routes, or flex routes that serve frequent destinations on regular intervals. These routes may be able to offer options like weekly or monthly passes, lower fares, no need to schedule in advance and open up coordination opportunities with schools, businesses and others. This must be balanced with the cost of operating an additional type of system, including vehicles, drivers, education, etc. The public is supportive of adding fixed routes.

Other services may include Job Routes to industrial parks or other areas in need of employees, creating partnerships with businesses. Low income clients newly entering the workforce may need access to transportation to secure a job. Vouchers may be an opportunity to allow a transitional phase and build awareness and habits for public transit. Perhaps a Shopper Shuttle on weekends could make stops at frequent shopping locations and high density residential areas with target populations that may be transit reliant. This would create an environment that may allow individuals to 'age in place.'

Many of the clients that need public transit services are in the low-to-moderate income range and transportation is a significant concern. When transportation becomes a barrier due to cost, it creates a cascading effect that crosses over to many aspects of their life.

Any way to reduce costs of operation while still providing the same or better service should be considered and evaluated for implementation.

In order to provide the mobility and choices of options will require continued teamwork from all parties, funds to make needed improvements, enhancements, and changes. Let us not forget the human factor. Understanding, respect and courtesy for the customer should always be a key factor as we move forward. The use of creativity, technology and effort can make a true Coordinated Public Transit-Human Services Transportation System.

BICYCLE AND PEDESTRIAN

PATHS:

Licking County has nearly 60 miles of paved shared use path. The paths are generally 10 feet wide and connect points of interest and support numerous functions. Licking County takes non-motorized traffic counts in 11 areas along Licking County's shared use path system.

The count system that LCATS uses is the TRAFx Infrared Trail Counter. The TRAFx Infrared Trail Counter is designed to count general traffic on trails and paths — hikers, joggers, horseback riders, snowmobiles, cyclists, etc. Unlike most infrared trail counters, it does not require a receiving unit or reflector to operate. This results in a very compact, easy-to-hide design, which reduces risk of vandalism. Using a small precision infrared scope mounted on a tree and pointed towards the trail, the TRAFx Infrared Trail Counter detects and counts warm, moving objects.

Issues identified by the non-motorized counts.

- The paths that parallel major roadways have hourly peak periods that are very similar to the roadways themselves. Since the paths have such similar patterns as the roadways it is believed that the paths are being used as work commute routes. Before the count program it was thought that the paths were used for recreational use only.
- Licking County's shared use path system has a large variety of volumes. In 2013, the path system had a mean value of 8.3 users per hours with many night hours having zero users and one path having a P.M. peak hour of 80 users.

Other issues with the county's path system are:

- There are a number of places where major trails are not connected to other major trails. Example of some disconnects include no direct connectivity between the City of Heath's path system and the City of Newark's paths. The City of Newark hired the Neighborhood Design Center (NDC) to plan a system across downtown Newark to connect the east and best bike paths. After several public meeting, stakeholder discussions and bike rides around multiple possibilities NDC arrived at overall system pictured.
- While all projects are being planned the W. Church St. Route is the only that has been completed.
- The current path system in place was designed with no overall plan in place and the paths were each built as standalone projects. In 2013, LCATS completed the first county wide plan for path entitled *Licking County Multi-Use Trail Plan.* Now, the majority of entities in Licking County see a need for a complete comprehensive path plan and are in favor of extending and connecting the existing multi-use trail system.

LICKING PARK DISTRICT:

As of January 2016 the licking Park District oversees the maintenance and operations of 13 properties encompassing over 1600 acres, and the majority of the mileage of the multi-use system. The District's treasures include three ancient earthworks, miles of historical canal land, a covered bridge, a historical farm, a fishing lake, indoor and outdoor meeting areas, a professionally designed Frisbee golf course, multiple canoe launches, over 450 acres of undeveloped green space with impressive sandstone outcroppings, multiple restored wetlands and prairies, the William C. Kraner Nature Center, and a cemetery rich in the County's history.

Unfortunately like many park districts and facilities their funding (due to recession) was cut by 70% from 2009 through 2011 resulting in staff being reduced to one full-time employee and a temporary part-time assistant, volunteers were asked to use their own equipment, fuel, and time to perform the most basic trail maintenance, all special events, such as annual Easter egg hunt, Halloween event and Civil War Re-enactments were cancelled, several trails and/or park areas were closed for various periods of time, communication with members and volunteers has suffered (due to shortage of staff and time). The lapses in routine maintenance led to nearly all properties falling below quality standards; and several trails, buildings, and other facilities possessing significant safety issues. The Licking Parks District passed a levy and is now well underway to staging a

comeback. More full-time staff has been hired and designated maintenance hot-spots have been repaired. Furthermore, Licking Parks is in a position where they can now create new multi-use pathways in addition to responding to maintenance needs.

SIDEWALKS:

LCATS takes part in the scope of services for every project it funds. Sidewalks are becoming an increasingly important aspect to transportation. Not only have nearly every school district in Licking County stopped bussing within two miles of schools but also the cities are becoming increasingly aware of the Americans with Disability Act Accessibility Guidance program. Between the school district's bussing decisions and the ADAAG program, cities and villages in Licking County are generally including sidewalks a standard part of every major roadway reconstruction project. The sidewalks include ADA approved curb ramps with appropriate section widths and slopes. The subdivision regulations passed by Licking County, City of Heath, Village of Granville and the City of Newark all include sidewalks as a standard for plan approval.

To aid the jurisdictions, LCATS has developed a sidewalk inventory to assist locals in developing ADA Transition plans. These plans will include prioritization of missing segments, replacements locations and general upgrade of the sidewalk infrastructure. This will help make sound decisions with the limit funding available and protect against lawsuits. LCATS is committed to assisting local jurisdictions in developing these plans and has started by developing a GIS layer of sidewalk inventories.

The most common funding available for additional sidewalks is via Community Development Block Grant (CDBG) or Safe Routes to School funding. The City of Pataskala, City of Newark and Village of Johnstown have completed School Travel Plans and are some of the first to apply and install the first portions of sidewalk utilizing SRTS funds.

Each year, Licking County participates in the State of Ohio's Small Cities Community Development Block Grant Program (CDBG), which allocates funds to counties and small cities. Each community's allocation is based upon a mathematical formula, which takes into consideration the number of low-to-moderate income residents in each community or county. Since Heath and Pataskala are considered acquired small cities, they receive a designated portion of the county's allocation every year.

Buckeve Lake Curbs & Sidewalks

The primary objective of the CDBG Formula program is to fund housing programs, economic

development programs and infrastructure improvements. These programs must benefit low-to-moderate-income citizens, and prevent or eliminate slum and blight. The LCPC Community Development (CD) staff, on behalf of the Licking County Commissioners, is responsible for the administration of the CDBG Formula Program. Local officials and citizens request projects and the County Commissioners choose which ones have the highest priority. The LCPC/CD staff is then responsible for administration, which includes grant application preparation, environmental reviews, securing engineering and consulting services, implementing the bidding process, and supervision of construction projects to ensure compliance with federal, state, and local laws and regulations.

Over the past few years, Licking County has done many sidewalk projects in the eligible cities and villages.

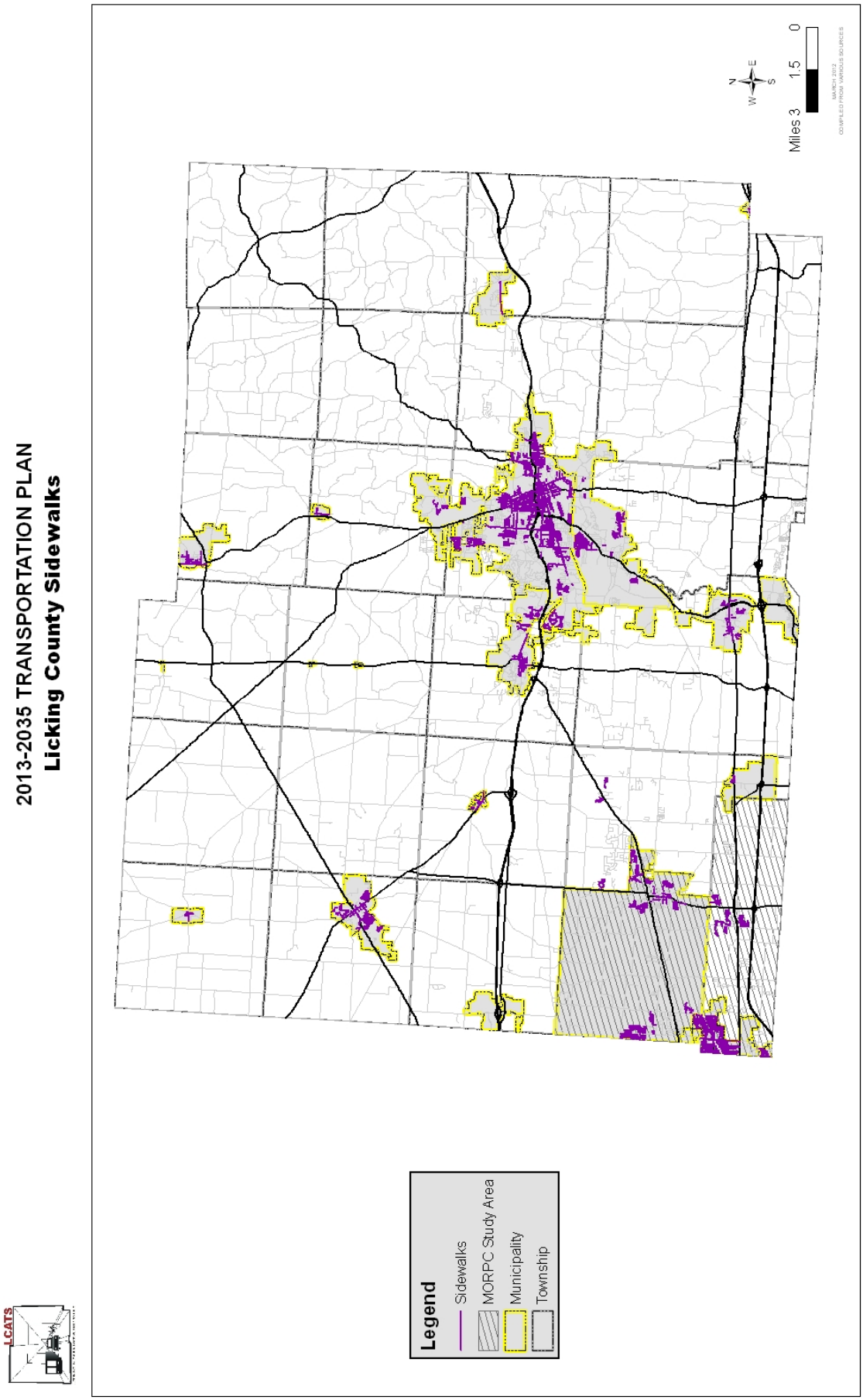
CDBG FY 2011		
Village of Buckeye Lake:	Curbs and sidewalks	$ 128,268
CDBG FY 2012		
Heath- Street Paving- Irving Wick Dr.		$ 11,500
Pataskala- Street Paving- West Street		$ 23,000
Buckeye Lake- Curb and Sidewalk		$ 13,000
CDBG FY 2013		
Hebron- 6th Street Drainage Improvements/Sidewalk Street Repair		$ 14,700
Utica- Maple Ave.-Paving/Drainage		$ 10,500
CDBG FY 2014		
Village of Buckeye Lake: Curb and Sidewalk Improvements		$ 70,896
CDBG FY 2015		
Alexandria- Liberty and College Street Improvements		$ 19,800
Heath- Green Valley Sidewalk/Road Improvements		$ 262,900
LCATS SFY2015		
Hebron South High Street Sidewalk Project		$ 540,185

NON-MOTORIZED TRANSPORTATION PLAN

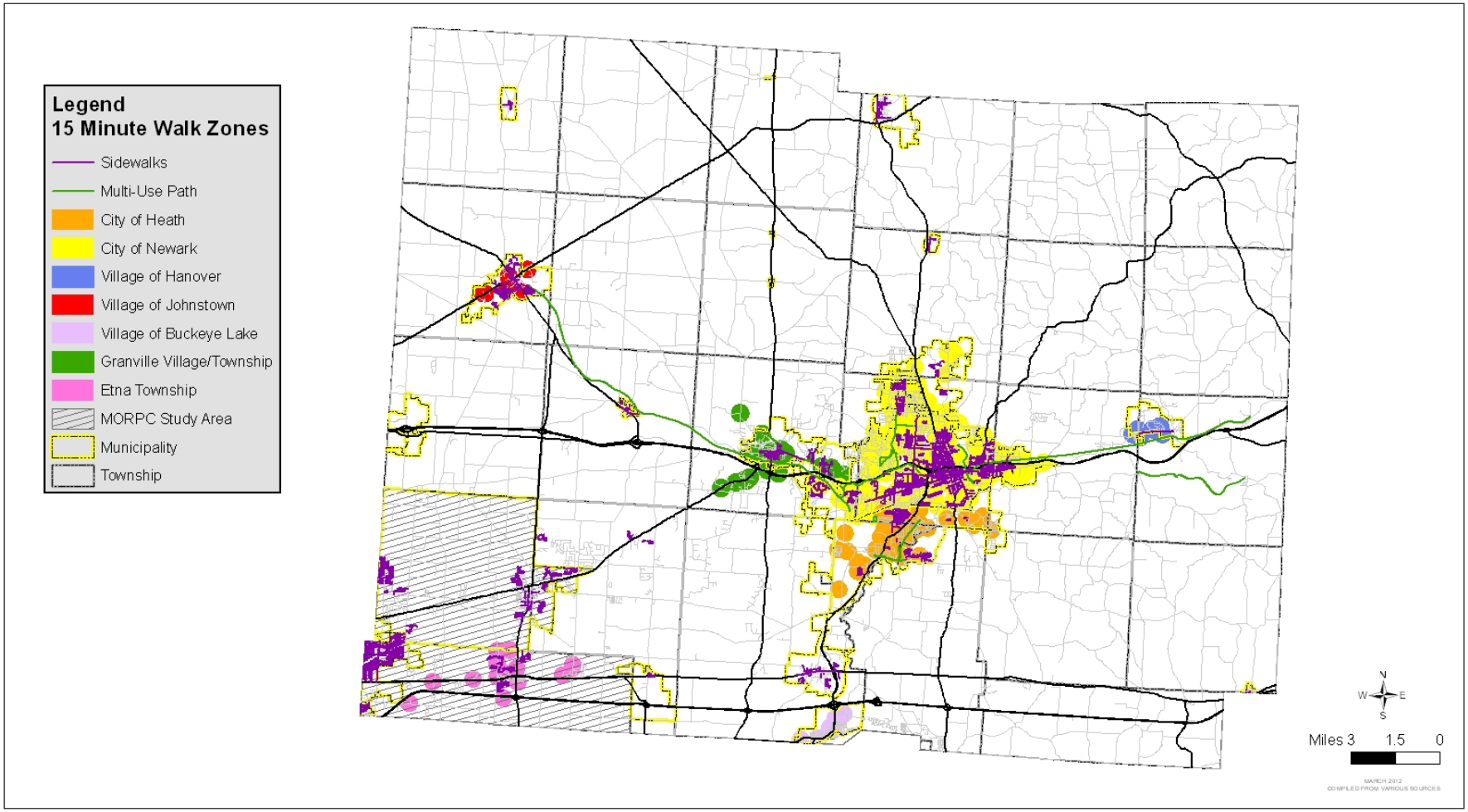
LCATS met with numerous entities in Licking County some work was completed by LCATS to include the information provided by the locals. This information included schools, doctors' offices and other potentially pedestrian friendly locations. The walk zones were then added as an overlay to the countywide bike path and sidewalk map to assist in the development of potential bike paths and sidewalk locations.

After the committee completed the mapping portion of the plan, a public information meeting was held to gather information to assist in development strategies. Due to the lack of participation we

have not advanced the plan. The LCATS staff is seeking other options to gain more viable information for the future development.


2013-2035 TRANSPORTATION PLAN
Licking County Sidewalks
LCATS
Legend
Sidewalks
MORPC Study Area
Municipality
Township
N
W
E
S
Miles 3
1.5
0
MARCH 2012
COMPILED FROM VARIOUS SOURCES

2013-2035 TRANSPORTATION PLAN
15 Minute Walk Zones to Destination Locations



RAIL

Just as automotive manufactures continue to develop fuel efficient environment friendly vehicles, so do railroad locomotives. The use of rail instead of trucking reduces greenhouse gases and helps to improve air quality. Even as rail road volumes are increasing, the amount of fuel consumed is staying nearly flat, creating additional savings.

Rail service can be a source of inexpensive transportation for both passengers and goods, while creating less pollution and using less fuel than trucks and automobiles. However, while rail is a less expensive means of shipping, it is still limited geographically. Rail is often not used because rail lines are not directly connected to a final market or shipping destination thereby requiring the final delivery of goods be made by trucks or water. Breaks in the shipping transaction such as these can cause confusion and further delay in an already slow shipping process.

Such problems can be remedied to some degree through the use of major shipping/distribution centers or hubs. These can provide for the computerized distribution of containers from rail to truck or ship, and vice-versa, thereby ensuring a quick and accurate exchange in an effort to minimize delays and guarantee the proper delivery of goods. Such centers should also have on-site access to warehouse facilities so that products can be stored at the hub and shipped in a timely fashion in accordance with market demand.

Officials should also be made aware of the transportation resource provided by rail in an effort to discourage further sale of railroads and standard railroad easements. The demand for rail transportation for shipping will continue to increase in the future and, as the Columbus urban area continues to grow, so will the need for mass transportation. Both of these factors highlight the importance of maintaining the existing rail lines. Purchasing these easements in the future will be expensive and will more than likely be subject to legal and time constraints. As development continues in the outskirts of Columbus, it will be more and more difficult to find new easements in areas already developed for housing.

In recent years, the scope of rail service has narrowed. Currently rail serves those industries or businesses that ship or receive shipment in heavy bulk, and those facilities or markets, which are

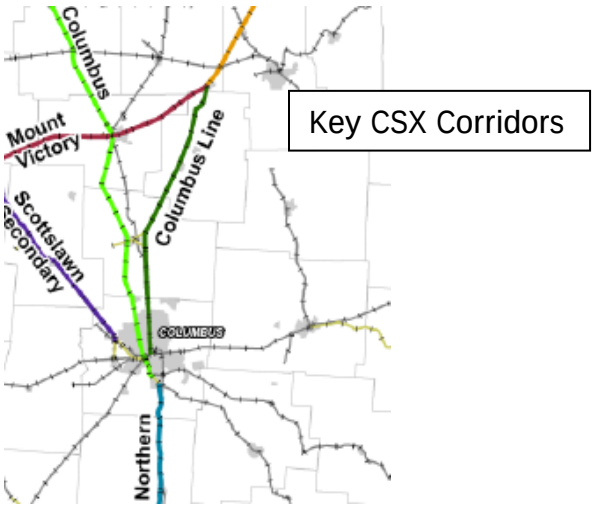
easily accessible by rail. The use of rail can also fluctuate in accordance with the economy. For example, as the national economy improves, the demand for rail increases as there is generally a short-fall in truck capacity during such times.

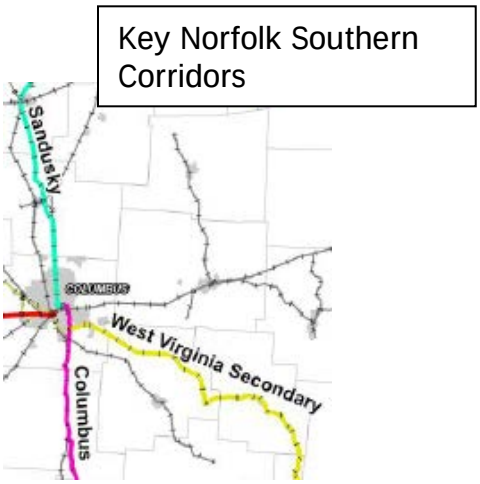
There are a few rail lines that service Licking County including, for example, the Consolidated Services Express (CSX line), Conrail, and Central Ohio (CUO). Existing railroads include the Conrail railroad which runs south through Utica to Newark and then east and west out of Licking County, and the Penn Central Railroad which runs south out from the Conrail Line to Hebron.

CLASS I CONNECTIONS

In Ohio, the key operators of rail lines are Norfolk Southern and CSX. Neither of these operates a Class I railroad line in Licking County. Class I railroads that operate out of the central Ohio region (Columbus) are expected to see 50-100 percent increase in growth by 2035. The Sandusky/Norfolk Southern line segment north of Columbus is projected to operate at a level of service 'F' by 2035. The Panhandle rail line does connect to these major railroads in Columbus to reach the national network. According to the Norfolk-Southern website, they do have trackage and haulage rights across the Panhandle line in Licking County.

"According to Norfolk Southern (Ohio Statewide Rail Plan, May 2010) clearances of up to 20 feet 9 inches above the rail are necessary to meet the height requirements of modern intermodal cars." This double-stack clearance does not exist in Licking County, but is available in Columbus, on several different lines, including the Heartland Corridor operated out of the Norfolk Southern Rickenbacker intermodal facility. The Heartland Corridor provides double stack clearances to the marine port at Norfolk, Va. The creation of this double stack corridor has required the efforts of multiple states and involved public and private partnerships. The first double stack train arrived in Rickenbacker on September 10, 2010.





The Association of American Railroads (AAR) estimates that <u>each freight rail job supports 4.5 jobs</u> elsewhere in the economy. There are 7,825 Ohioans employed by the railroads.

LOCAL NETWORKS

The Columbus & Ohio River Railroad (CUOH) runs through Licking County and is part of the Ohio Central Railroad Systems. It operates 272 miles in Ohio. In 2009, the Mt. Vernon spur line running from Newark to Mount Vernon had a $617,367 track rehabilitation that included replacement of 8200 ties and other track work over 25 miles from Newark to Mount Vernon. The Newark-Mount Vernon line serves two large shippers employing over 205 people.

Among the larger industries in Licking County which use rail are Owens Corning of Granville, Kaiser Aluminum of Heath, Rockwell and TECTUM of Newark, and DOW in Hebron.

When asked about the twenty year outlook for rail, an Owens Corning shipping manager stated that the demand for rail will most likely increase as, for Owens Corning, there will always be a need for bulk shipping. A shortage of truck transportation in the future would also trigger an increase in rail demand.

Ohio Central Railroad System

PANHANDLE Line – East west line plus the southern spur to Hebron

PANHANDLE

The east west Columbus and Ohio River line, also commonly called the Panhandle, provides a great benefit to the region. The Panhandle connects the Ohio River/Pittsburgh on the east and Columbus to the west. This creates a great opportunity for continued development along the corridor. Much of this area traverses part of the Ohio Appalachian region where unemployment is high, and this could be part of the recovery to those areas.

It is owned by the State of Ohio and offers open access by allowing multiple carriers to run on the line. This creates competition and a source of revenue to the state from the lease. This Panhandle section of rail received a significant upgrade in 2010 of nearly 7 million dollars that included track, bridge and the Gould tunnel rehabilitation.

It is important to keep this rail line well maintained and upgraded. Currently, there is a long term lease Ohio Central/Genesee & Wyoming to operate the rail line. Benefits of the lease include consistency of the operation and performance metrics. Funds from the lease are anticipated to be 'rolled back' into the upgrade/improvement of the rail line, creating a public-private partnership. **This is an important state asset that should not be sold.**

Open access allows for site selectors and future and current businesses to consider Ohio favorably for rail transportation. With open access, from a state controlled facility, a developer/site selector recognizes that their client's freight costs will be consistent. This is an advantage to the business and to the state in being competitive for businesses looking to relocate.

Part of the Panhandle line, Hebron spur, serves 3 major industrial parks: Heath-Newark Licking County Port Authority, Mid-Ohio Development and the Newark Industrial Park. This area is dubbed the 79 Seventy Advanced Materials Corridor. The local governments have invested heavily along the Cherry Valley/Thornwood corridor to provide utilities, zoning, etc. to serve manufacturing/industrial growth for the area; the same area that is served by the Panhandle Rail Line spur. This is not by accident, but by planning.

INTERACTION WITH OTHER MODES OF TRANSPORTATION

Rail grade crossings continue to be a priority in Ohio. Efforts like Operation Lifesaver, and set aside funding from the Ohio Rail Development Commission (ORDC) for rail grade separation projects remains important, especially as freight volumes and railroad cars increase. LCATS is supportive also improving rail crossing for vehicles and non-motorized users. Of particular concern are crossings that 'strand' citizens in wheelchairs and other users of mobility aids without a safe way to cross. The recommended standard to use for crossings and other roadway areas is PROWAG, Public Right of Way Accessibility Guidance.

Signalized roadway intersections that are close to railway intersections need to be evaluated for signal preemption to assure that vehicles are not 'caught on the tracks' when a train is approaching. This is easily accomplished by coordinating the tracks and the signal together. This activity is supported for obvious reasons, but also be LCATS ITS Plan, included in this document.

AIR

Local area airports include the following:

Newark-Heath Airport - Heath, Ohio: The Newark-Heath Airport (VTA) is located 20 miles east of Port Columbus. This airport has a runway of approximately 4,600 feet. The FBO on the field is operated and maintained by Aviation Works Inc. They offer many services to the general public and the aviation community. Some of the services they offer are hanger rental, full service refueling (Jet-A and 100LL), aircraft rental, aircraft training and maintenance. VTA is a great alternative to Port Columbus, offering congestion free runways and lower costs than Port Columbus.

Port Columbus Airport - Columbus, Ohio: The Port Columbus Airport is a major airport which services both domestic and international flights. The airport has three runways, which are used to service 17 commercial airlines. Port facilities include restaurants, shops, several on-site car rental services, area hotels and recreation.

Licking County airports should be in a position to expand as the market warrants. Provisions have been taken to protect surrounding properties from more intense development through the use of airport overlay zoning districts.

Heliports

A general aviation heliport accommodates helicopters used by individuals, corporations, and helicopter air taxi services. While most general aviation heliports in Licking County are privately owned, this is not required as they can be publically owned as well. Attention should be paid to the added transportation and development options that heliports can provide.

Within Licking County there are several private and a few publically owned heliports as depicted by blue circles in the following map. However, within the projected “development diamond” there is only one privately owned heliport. With power retailers, warehousers, developers, and manufacturers such as Amazon, Limited Brands, ProLogis, Boeing, and a slew of follow on companies, heliports may serve the development community of Licking County in ways that other modes cannot.

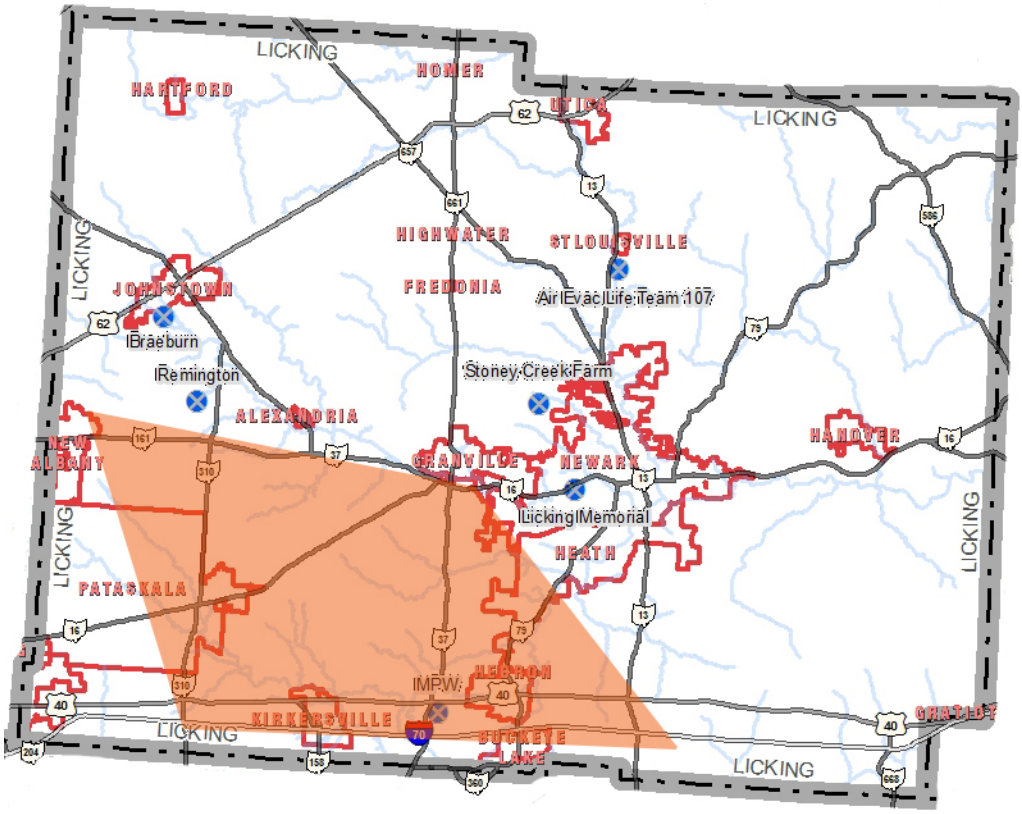
Advantages of Heliports

Heliports and helicopters can have many distinct advantages over traditional airports and airplanes. A heliport requires significantly less land and sterile (obstructions) environment to create. Therefore, it can be located closer to industrial areas that investors, CEO’s, Land Prospectors, and business people may be interested in. Heliports, and helicopters, also offer the ability to quickly leave the metropolitan area of Columbus and be in a business center on the outskirts of the city quickly; i.e. Licking County. Heliports also offer the advantage of being less costly to construct, meaning that they can be installed in business parks and onsite of businesses.

Heliports can also offer another industry to Licking County. Just like airplanes helicopters need maintenance. The Newark-Heath airport would be a suitable place to offer the main hub of heliports. This facility has hangars, and can employ maintenance staff to service/repair helicopters. In addition to this, the facility is located adjacent to the Port Authority which houses many major companies on its campus; such as Boeing. The installation of a heliport at this location could prove invaluable as development rapidly occurs in Licking County.

Uses of Heliports

Heliports and helicopters are not only used by businesses. Medical helicopters routinely fly out of, and into, Licking County. Currently, Air Evac Team 107 is located in the Village of St. Louisville. A more centrally located Air Evac Team that is closer to the greater population could prove beneficial in the care and safety of those involved in a life threatening emergency. A central hub would also let the helicopter crew get the craft serviced without having to fly to Columbus, which would add extra time to the craft being offline. Helicopter services could offer tours of the Licking County area, as well as commuter service to Columbus and surrounding areas. Other examples of services are aerial surveying, law enforcement, search and rescue, inspection, and maintenance of infrastructure.



Map illustrating current heliports and the development diamond.

Transportation Impacts

Heliports may impact transportation systems in ways that are not immediately recognizable. Firstly, they would offer a different way of commuting and would require different rules and regulations. Therefore, the airport authorities would have to enact a different set of airport zoning regulation that would establish the needs of heliports. Heliports also may spur development within Licking County. This development directly correlates to the volume of freight traffic located on roads in Licking County. In addition to freight traffic, heliports would also create more commuter traffic as employment is generated. As the volume of traffic increases, authorities have to be cognizant of the increase and take measures pertaining to safety, congestion, and traffic flow in order to maintain a properly working system.

Heliport Assistance

The FAA administers a grant program that provides financial assistance to eligible sponsors to develop a public use heliport. Information on federal aid program eligibility requirements is available from FAA Airports Regional and District Offices and on the FAA Airports web site, www.faa.gov/airports.

Many state departments of transportation, aeronautical commissions, or similar authorities require prior approval and, in some instances, a license for the establishment and operation of a heliport. Several states administer a financial assistance program similar to the federal program and are staffed to provide technical advice. Contact your respective state aeronautics commissions or departments for particulars on licensing and assistance programs. Contact information for state aviation agencies is available at http://www.faa.gov/airports/resources/state_aviation.

Some communities have enacted zoning laws, building codes, fire regulations, etc. that can affect heliport establishment and operation. Some have, or are in the process of, developing codes or ordinances regulating environmental issues such as noise and air pollution. A few localities have enacted specific rules governing the establishment of a heliport. Therefore, make early contact with officials or agencies representing the local zoning board, the fire, police, or sheriff's department, and the elected person(s) who represent the area where the heliport is to be located.

It would be remiss to not consider the construction and use of air travel in this plan. As fuel prices lower and commercial development pressures increase on Licking County, the consideration of alternate, less common, modes of transportation should be analyzed. Increased air facilities and heliports could prove to be that extra bump that Licking County needs to distinguish itself from other competing communities.

FREIGHT

The Freight Transportation System

Freight transportation is defined as the movement of goods from one location to another. In contrast to passenger transportation, freight transportation tends to be more multi-modal, meaning that goods frequently changes modes of transportation on their way from origin to destination. Due to the heavier vehicles needed to transport goods; freight transportation has a greater negative impact on the transportation infrastructure than passenger transportation.

The freight transportation system is comprised of the following:

1. Highway Network
2. Railroad Network
3. Aviation Network
4. Waterway Network
5. Pipeline Network
6. Inter-Modal Connectors

Freight Transportation Planning

Planning for freight transportation is important because it affects:

1. Economic vitality and competitiveness
2. Safety and daily life
3. National security
4. The environment

An efficient freight transportation system can help a region attract new businesses, especially in the manufacturing sector. It can have a positive effect on the quality of residents' lives as it moves goods from producers to consumers, supplies fuel to power plants, and delivers packages to homes. The freight transportation network also enables the movement of the military equipment, thus it is an essential part of national security.

Freight transportation, however, also has negative impacts. It affects residents and the environment due to vehicle emissions, cargo spills, accidents, congestion, noise, and energy use. One example of this impact is that the noise from one truck traveling at 55 mph is equivalent to 238 cars traveling at the same speed.

Freight Transportation Planning Challenges

There are a number of challenges associated with incorporating freight transportation into the transportation planning process. For example, private carriers can be reluctant to share certain types of data that may be helpful in the planning process for competitive reasons. In contrast, the public data that is available usually lacks the detail needed for it to be useful to planning agencies in their decision-making. Another challenge is that improvements, which private freight transportation companies make to their facilities, are often not coordinated with public sector

transportation improvements. As a result, public agencies are frequently in a position of having to react and catch up with the private sector improvements.

There are also challenges when it comes to funding freight transportation projects. Current regulations make it difficult to expend public funds on private transportation facilities for strictly freight purposes. Identifying and engaging private sector freight transportation stakeholders in the planning process are also a challenge. The private sector frequently does not have the staff time or resources to fully commit to the process, and the private sector can become frustrated with the comparatively slow process required in the public sector to implement improvements.

The multi-jurisdictional aspect of freight transportation is also a challenge to incorporating it into the planning process. For example, the impacts of a particular freight movement problem may not just be local. Thus, is can be difficult to justify a single area bearing the entire cost of an expensive freight transportation project that may have a minor benefit to the immediate region, although it may have a significant benefit to adjacent regions.

CONGESTION & TRAVEL DEMAND MANAGEMENT

LCATS is not required to have a specific Travel Demand Management (TDM) because we serve an area with an urbanized population of less than 200,000. We are however, conscious of the value of these techniques and support their use to reduce congestion, improve the health of residents, and help the environment.

When congestion increases, the cost to society increases. Travel times increase and the quality of life decreases. Air pollution increases and the health of our citizens become jeopardized. Crash rates increase in congested areas. Additional crashes have a compounding effect on the congestion. With crashes, the increase cost of insurance, property damage and human suffering weigh on the community. Now is the time to prepare for the future. It is not possible to build our way out of congestion. It will require a mix of options for individuals to consider. Most importantly, for these options to be viable, they must be capable of being integrated into individuals' everyday habits and routines.

Currently our primary causes of congestion stems from old, outdated, design standards, cash strapped schools cutting bussing and long standing land use practices by entities with a lack of access management regulations.

What does LCATS do about this:

1. Safe Routes to School; this program is developing throughout the county. While this is a separate program, many of the premises instilled into the program are actually travel demand strategies. Currently, many of our schools exhibit significant local street delays surrounding our school buildings during bell times. Parents driving their children to school predominantly cause this delay. LCATS will be working with local school districts and local jurisdictions to move these programs forward.
2. Non-Motorized Transportation; the addition of bicycle and pedestrian facilities to the community provide another way to 'get out of the car and off the streets'. As more options for individuals to travel in more efficient and environmentally conscious ways become

available, the more likely they will be used and help reduce congestion on our roadway network. To date LCATS has linear referenced our bike path system, mapped every sidewalk in Licking County and are identifying gaps in both. Some target locations are schools, support agencies, shopping and parks.

3. Highway projects; to date LCATS has been a significant contributor to updating interchanges to current design standards, assisted entities in access management retrofits and strategies for adoption, updating intersections signals systems with geometrics and traffic flow project.
4. Transit; LCATS spends a portion of their CMAQ funds on transit vehicle replacement. One of the hurdles to transit ridership is to overcome the stigma of the use of the vehicles. Clean, well-maintained and courteous drivers are intangible in helping to overcome this hurdle. While funding is not the only answer, keeping fleets current is certainly a part of the solution.
5. Van and Car Pools; LCATS works with our neighboring MPO, MORPC in their travel demand management (TDM) strategies. The Columbus urbanized area is over 200,000 and therefore, MORPC is a designated Transportation Management Area (TMA) and required to have a formal TDM program. MORPC operates a Ride Solutions program that matches riders to carpools and vanpools. This service is available to Licking County residents traveling to the Columbus metropolitan area. The program also includes a guaranteed ride home feature. This feature serves as a safety net in case participants have unexpected needs that require them to leave early or stay late. Currently, MORPC has 14 vanpools traveling from Licking County each day. In 2008, there were only eight. These vanpools eliminate 182 autos from the roadways each day, contributing to better air quality and less road congestion.
6. Another aspect that is well supported is the use of Park and Ride lots. Park and Ride Lots encourage car and vanpooling and reduce the number of vehicles on the major arterials. Currently, there are three official park and ride lots in the study area, IR 70 at the State Route 13 interchange, State Route 16 at the Country Club/Granville Road interchange area, and State Route 161 at the Beech Road interchange. The first two locations are heavily used. They have been expanded in the past and may need to be expanded again in the future. The new park and ride location that was constructed as part of the SR161 upgrade project at Beech Road on the south side of SR161 is rarely used. In a recent survey, additional Park and Ride facilities should be considered along the IR 70 Corridor and State Route 16/37/161 Corridor.
7. Congestion due to construction; During project development, discussions are held concerning detours, detour routing, maintenance of traffic issues. Many factors are considered such as inter-relationships between modes, school bus routing, EMS availability, adjacent entities, traffic volumes, and nearby road conditions. Early in the project development phase, LCATS tries to look at projects from a multi-modal perspective. Common examples are to bench an area under a bridge for a future bike lane and assuring proper clearance and pier spacing, or allowing for width for pedestrians or bike lanes on the bridge. Particular consideration is given to bridge replacements since they have a design life of 50 years and minor accommodations during initial construction can create opportunities in the future.

8. Future Possibilities; in the future LCATS may include promoting telecommuting, flexible work schedules, and compressed workweeks. These solutions will require the building of more partnerships and education of business leaders and citizens.
9. Utilize strategies and project types included in the LCATS Intelligent Transportation System (ITS) Plan, included in this document.
10. By working with site designers and existing retail lot owners to develop park and walk lots will allow for better use of existing facilities, improved health of our citizens and reduce congestion, particularly in dense retail areas.

Congested Corridors

Following is a list of corridors that exhibit congestion and it's' cause. The corridors were determined by utilizing the 2012 and 2035 Travel Demand Forecasting Model (TDFM). The TDFM takes into account current and future plans for development, population projections, workforce, etc. to determine future traffic patterns and volumes on each segment of roadway.

Local leaders and LCATS work to identify the needed treatments to alleviate or reduce the congestion. Some projects have funding assigned in the future, while others do not have any funding assigned currently. Below is a list of congested locations, what is needed and the status of funding:

- State projects:
    - IR70 West of SR79. Needs third lane added per direction from SR256 to SR79. Funded by 2030.
    - SR37 from SR16 to IR70. Hybrid project consisting of turn lanes, access management, reduction of vertical curves and wider shoulders. No funding.
    - SR16 from Taylor Rd to SR16. Hybrid project consisting of turn lanes, access management and wider shoulders. No funding.
    - US62 from Johnstown to IR270. Hybrid project consisting of turn lanes, access management and wider shoulders. No funding.
- Local Projects:
    - SR79 in Heath from 30th St to limited access in Hebron. Access management retro fit. No funding.
    - King Rd at Sharon Valley Rd to Sharon Valley at Country Club Dr. Need's intersection improvements to two intersections in very close proximity to one another. No funding.

INTELLIGENT TRANSPORTATION SYSTEM (ITS) ARCHITECTURE PLAN

PURPOSE OF THE ITS PLAN

ITS is defined as "*electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system*". An ITS is a transportation system that uses modern communication, computer, and control technologies to increase and maximize the use of the existing transportation network.

ITS is used to solve transportation problems, to improve safety, to provide services to travelers and to assist transportation service providers to implement suitable traffic management strategies. ITS focuses on increasing the efficiency of existing transportation resources, in order to improve the overall performance of the system. Improving the system is achieved by providing better management of transportation systems, and by providing services and information to travelers so they can make better travel decisions.

MPOs are required to development of an Intelligent Transportation System (ITS) Plan in order to use federal funds for ITS projects. To meet the federal rule ITS projects should:

- Engage a wide range of stakeholders
- Enable the appropriate electronic information sharing between stakeholders
- Facilitate future ITS expansion
- Consider the use of applicable ITS standards

Now that LCATS has participated in funding a project that includes ITS characteristics, we are required to adopt an ITS within four years of the completion. The threshold project was an interchange project that included an intersection close to a railroad crossing. The need to coordinate the two intersection falls under 23CFR940s statement *"(c) All other regions not currently implementing ITS projects shall have a regional ITS architecture within four years of the first ITS project for that region advancing to final design".*

Currently, our primary causes of congestion stem from outdated design standards, cash strapped schools cutting bussing and long standing land use practices by entities with a lack of access management regulations. Licking County has little recurrent vehicle volume based congestion.

This plan is designed to guide ITS development within the Licking County Area Transportation Study (LCATS) service area. During the last 10 years, ITS technologies have been successfully deployed across the nation to facilitate traffic operations, reduce traffic delays, improve safety and enhance the ability of transportation agencies to manage their transportation systems. While the majority of ITS deployment has been limited to the largest metropolitan areas in the United States and other high traffic priority corridors, it is now expanding into smaller metropolitan and rural areas.

One of the key elements of successful deployment of ITS technologies is effective planning. Both federal and state agencies have recognized the need for a planned and strategic approach to ITS deployment. This approach establishes a direct link between ITS planning and other transportation and strategic planning efforts. Ideally, the outcomes of ITS planning are activities (projects) incorporated and programmed into statewide, regional, and metropolitan transportation plans.

BENEFITS OF AN ITS

In today's economy, it costs significantly more to build a new freeway or widen an arterial than to manage the existing one. Research has shown that implementing transportation management systems has yielded benefit to cost ratios ranging from 4 to 20, whereas the ratio of constructing a new roadway is often lower. Benefits can accrue in terms of both quantifiable values and in more subjective non-quantifiable benefits. Traditionally, the method of system justification is a benefit to cost analysis which compares benefits accruing to the public in dollars compared to capital operating and maintenance dollar costs.

Benefits measured in dollars include:

- Travel time savings
- Reduction in fuel consumption
- Reduction in accidents

Other benefits, less readily quantifiable are:

- Improved air quality
- Improved customer service in terms of information and dependability
- Special event management
- Heightened sense of personal safety
- Database for system performance evaluation and planning

KEY STAKEHOLDERS

The stakeholders and involved agencies for this ITS plan shall include the LCATS Technical Advisory Committee (TAC) which includes the following:

- Licking County Engineer
- City of Newark
- City of Heath
- ODOT District 5
- Public Transit Agencies
- Village of Granville
- Heath-Newark-Licking County Port Authority
- Village of Granville
- Village of Hebron
- Licking County Planning Commission
-

Other entities will be incorporated and invited as stakeholders if a project being proposed or considered falls in their jurisdiction. Likely additions include the Village of Johnstown, Village of New Albany and members of the MORPC study area.

TRAFFIC OPERATIONS

Licking County's transportation system provides adequate service to its users. Except for the busiest urban areas, traffic congestion is not an issue on Licking County roads during normal conditions. However, the performance of the system can quickly change with changing weather conditions, especially during inclement winter weather. Accurate and timely information, as well as effective information access, are critical to improving winter operations and reducing potential safety risks to motorists. Another way to improve road-operating conditions during inclement weather is by using automated systems for controlling ice in trouble spots (i.e., bridges known to have an ice problem). Use of such systems would reduce the staff resources required to implement ice control strategies at the sites and improve service to motorists because of significantly reduced response time.

A safe and efficient transportation system is an invaluable asset to any city. Not only does it affect the quality of life for daily commuters but it also has a direct impact on economic growth and vitality. The ability to move goods and services efficiently through our city is a determining factor for businesses deciding where to locate corporate headquarters and distribution centers.

ITS PROJECTS

ITS Projects will be incorporated into other projects if possible to help reduce the overall cost, decrease disruption to the public and assure coordination of systems. Priority will be given to congested and high speed/high volume corridors such as IR 70, SR 79, 21st Street, and 30th Street. Other projects that help improve safety will also be considered strongly.

LCATS ITS projects are broken into three different phases based upon their current level of implementation. Phase 1 includes projects that are currently in use, but that can be improved to further enhance the transportation network. Phase 2 describes projects that are currently underway, but that have not been integrated into the existing Transportation network. Phase 3 projects include activities that may be pursued in the future to further improve the existing transportation system.

Phase 1 Projects

Railroad Coordination

Signalized roadway intersections that are close to railway intersections need to be evaluated for signal preemption to assure that vehicles are not 'caught on the tracks' when a train is approaching. This is easily accomplished by coordinating the tracks and the signal together. This activity is supported for obvious safety reasons, but also for operational improvements. The most likely area for this to happen is within the City of Newark. Anytime this type of coordination is needed within the city of Newark it should operate within the city's current central signal system.

Signal Coordination

Both the Cities of Newark and Heath currently utilize some signal coordination on their main arterials. However, as both municipalities continue to grow, they will need to expand the area involved in signal coordination. In the future they will also need to coordinate with one another as the jurisdictional boundaries are blurred.

The basic function of most arterial streets and roadways is to move traffic safely and efficiently with minimum delay. The main source of delay and congestion along most arterial streets and roadways are traffic signals. Too often motorists are required to make unnecessary stops because adjacent traffic signals bear no relationship to each other. This results in longer travel times and increased vehicle emissions and fuel consumption. Additionally, increased driver frustration related to unnecessary stops or undue delay may also result in a potential increase in accidents.

The goal of signal coordination is to get the greatest number of vehicles through a corridor with the fewest stops in the safest and most efficient manner. It would be ideal if every vehicle entering a corridor could proceed without stopping. This is not possible, even in the most well designed system. Therefore, with signal coordination, the heaviest traffic movements are given precedence over the smaller traffic movements.

The benefits of coordination are as follows:

- Reduces overall stops and travel delays.
- Allows for large groups of vehicles to efficiently flow through a series of traffic signals without stopping.
- Reduction in the number of stops reduces vehicle emissions and thus improves air quality. Most of the vehicle emissions occur during acceleration (stop and go traffic).

The main disadvantage of signal coordination is that side street traffic typically experiences a longer wait time. In the development of signal coordination, we have to manage the competing interests of providing continuous flow of traffic on the arterials, providing adequate time for pedestrians to cross the street, and minimizing the wait time for side street traffic.

As we strive to improve signal progression and coordination within the City, it is important that the public understand the limitations of signal coordination. While traffic signal coordination can reduce stops and travel delays along a particular corridor, travel along a particular street may not completely experience non-stop free-flow conditions due to the following conditions:

- Capacity issues as a result of increased traffic caused by growth.
- Complexity of the street system.
- Equipment malfunction.
- Street construction.
- Traffic incident.

In order to operate traffic signals safely, several things must be considered. Because of the fixed amount of time for the "coordinated" traffic signal to provide a green light for all of the traffic movements, each of the following has a direct relationship to the amount of time available for the green light at each traffic signal within a coordinated group along a roadway.

- *Pedestrian Crossing:* For safety, enough time must be allowed for a pedestrian to cross the street from curb-to-curb walking at a pace of four (4) feet per second*. This is called the pedestrian clearance interval and is represented by the flashing "DON'T WALK" or upraised hand symbol. The wider the street, the more time needed to cross and the less time available for the green light in the opposite direction. (**It should be noted that four(4) feet per second is a "rule of thumb". Other variable such as railroad preemption and/or a higher population of elderly pedestrians may affect the values used in this calculation.)*

- *Cross Traffic:* Like pedestrian crossing, enough time should be allocated to clear the waiting traffic on the cross street. The heavier the cross traffic, such as experienced near schools, businesses, and other heavy traffic generators, the more time needed to clear them through the intersection and the less time available for the green light in the "coordinated" direction.

- *Left-Turn Signals:* Where left-turning traffic is especially heavy and/or the amount of opposing traffic is so heavy that there are not enough gaps in the traffic to safely complete a left-turn, left-turn signals are usually installed. The amount of time for left-turning traffic also limits the time permitted for the "through" traffic flow in the opposite direction.

Each of the above factors limit the amount of time for the green light in the "coordinated" direction.

- *Two-Way Traffic Flow:* Another thing that limits the amount of time for the green light in one direction is the need for "coordination" in the other direction as well. The distance between traffic signals and the speed of the traffic determine the way in which the green lights at the next traffic signal "line up". If the spacing is not equal between traffic signals, the green lights may only "line up" well in one direction. When this happens, the green lights will normally "line up" better in the direction with the most traffic. The traffic in the other direction may have to stop.

- *Off-Peak Traffic Periods:* Another reason that you may have to stop is that the traffic signals are not coordinated. During times when traffic is light, traffic signals often are allowed to run independently. Traffic signals are most often coordinated during the "peak" travel times when traffic is heaviest. These times are usually between 7:00-9:00 in the morning and 4:00-6:00 in the evening.

Phase 2 Projects

Preemption

Constrained by tight budgets, officials must make decisions on how to provide appropriate levels of service while at the same time coping with increasing demand for services and increasing

congestion levels. One alternative is to implement an Emergency Vehicle Preemption (EVP) system.

Both the City of Newark and City of Heath utilize Main Street and 30th Street extensively for connecting to the regional hospital, Licking Memorial Health Systems. While the two cities are independent, their EVP systems should be coordinated to allow for better service to the communities.

EVP systems are designed to give emergency response vehicles a green light on their approach to a signalized intersection while providing a red light to conflicting approaches. The most commonly reported benefits of using EVP include improved response time, improved safety, and cost savings. These benefits have been realized since the early deployments of EVP and have been documented since the 1970s.

The sudden appearance of an emergency vehicle en route to an emergency can be extremely disruptive to nearby vehicles as individual drivers maneuver to get out of the way. Some drivers become confused and create conflicts that can cause emergency vehicle crashes or block lanes increasing response times. Using ITS to provide emergency vehicles a green light at intersections can reduce driver confusion, reduce conflicts, and improve emergency response times.

EVP has the potential to:

- Reduce the potential for an EV to be in a crash en-route to the emergency scene or to the hospital, reducing liability and keeping EVs in service.
- Help to get fire/rescue and EMS apparatus to the scene quickly and to put law enforcement in a tactically advantageous position.
- Be a cost-effective alternative to building new stations by increasing the effective service radius of current facilities.

When EVP is implemented well, the negative impacts on traffic flow are not significant and public acceptance of the system is high.

Transit Management System

LCATS has assisted the Licking County Transit Board (LCTB) in acquiring and implementing a management system to further improve customer service and decrease operation costs. At present, the RouteMatch software is being utilized by the LCTB. This software was purchased by LCATS with the understanding that other public transit operators could also utilize the purchase, but would be responsible for additional fees based on per vehicle costs.

Another aspect to a Transit Management System is to integrate the use of Mobile Data Units (MDU) and Automatic Vehicle Locators (AVL) into the system. This will allow for real time routing and information of the vehicles.

Benefits of an Advanced Transit Management System (ATMS) include:

- Improve service and increase on-time percentages
- Reduce costs out in the field and in the office
- Increase safety and security trough emergency messaging and GPS reporting components
- Get up-to-date information to ensure accurate and efficient schedules
- Improve operating efficiency by reducing vehicle layover and non-revenue deadhead miles

New routing and scheduling software helps providers avoid the tedious, time-consuming function that are detail intensive, but critical for successful transportation management: scheduling and integrating on-demand and recurring trips with fixed-route, determining an optimal route for efficient service, and producing complete, informative reports for driver manifest and regulatory compliance.

Instead of spending hours each day trying to determine how to efficiently accommodate all trip requests, new technology combining advanced logistic algorithms with GIS based technology can process information on requested trips in a matter of seconds, computing and producing realistic, highly accurate routes and schedules quickly and efficiently.

Adopting advanced routing and scheduling software is not a decision made in a vacuum. This sophisticated technology is also a key step towards the realization of statewide and regional Web-based coordination and intelligent transportation systems (ITS) and will be at the heart of any plan developed with state agencies and DOTs.

So, while routing and scheduling software brings with it immense operational efficiencies and bottom-line savings, it also allows operators to improve customer service and expand mobility options for the community by working in concert with state and regional entities.

RouteMatch is an ATMS that fully automates the customer, vehicle, trip request, scheduling, routing, dispatch management, billing and reporting requirements for public and private paratransit and demand-responsive transportation management.

Key features include: fully-automated computer assisted, and manual scheduling and routing for increased efficiencies, increased customer service, and decreased operation costs; Geographic Information Systems (GIS) integrated scheduling and routing utilizing the real-world GIS street network for vehicle scheduling, routing, automated vehicle tracking, and display.

Phase 3 Projects

Field Devices

Cameras

The ability to view traffic flow conditions is an essential tool for engineers when adjusting traffic signal timings from a remote location. As the signal timings are implemented, a real-time view of the effects of those changes is necessary for optimal results. Cameras also allow 911 dispatchers to determine the precise location of an incident and the appropriate emergency equipment required.

Dynamic Message Signs

Providing up-to-date information about traffic flow conditions allows motorists to make decisions about their trip, such as taking a different travel route, changing modes of transportation, or postponing a trip. Unless a complete road closure occurs, freeway and arterial message signs will not indicate the use of a specific alternate detour route - only facts about the incident location. Posting specific routes would quickly over saturate the freeway exit ramp and arterial.

This would include extensions of the current system operated in the Columbus region onto corridors such as IR 70, SR 161, SR 16, and US 62 that continue into the central Ohio region. LCATS will coordinate with MORPC and their stakeholders in these joint interconnected corridors.

Dynamic Turn Lane Signs

In the event of a traffic incident, it may be necessary to change the number of left or right turning lanes. The ability to change lane assignments to fit the percentage of turning vehicles can significantly reduce delay.

Dynamic Detour Route Signs

When a freeway incident occurs and congestion begins to build on the freeway, a percentage of the motorists will decide to exit to the surface streets. Signs (like the one illustrated on the right) will be placed along paralleling streets informing motorists when they have passed the incident location and can return to the freeway system.

ITS AGREEMENTS AND UPDATES

ITS treatments and strategies will be considered on a project by project basis as each project is scoped. Specific items to be included will be recorded in the PDP document, Project Initiation Package. This document is used to specify the details of a project. It includes sections that address ITS, to assure that it is considered.

The adoption of the LCATS long range metropolitan plan, updated every four years shall be considered as the adoption and update for a regional ITS Plan for the LCATS service area. Any changes or modifications should be completed via the plan adoption or modification process.

ENVIRONMENTAL CONSIDERATIONS

PROJECT DEVELOPMENT PROCESS

In order to appreciate how the environmental process fits into the development of the transportation system, one needs to understand the Project Development Process (PDP). The PDP was developed to allow for ample and appropriately timed communication points on various types of projects. Very simple maintenance oriented projects will have minimal impact to the environment and hence, minimal outreach for public involvement. On the counter-side, large projects built on new alignments or involving significant right of way acquisition will likely have more potential impacts to the environment. These types of projects will allow for more interaction between interested parties. To achieve this type of balance between varying types of projects a Project Development Process was established.

As a project is being considered, it is assigned a PDP Path ranging from 1 to 5. Very simple projects are either Path 1 or Path 2. Path 1 projects are maintenance oriented, minimal utility impact, and no right of way. Typical projects include resurfacing, bridge deck replacement, guardrail and sign replacement, etc. Many transportation projects fall into the minor category. Path 2 projects may include some right of way and utility relocation. Path 2 is frequently used for bridge replacements, minor widening projects, safety improvements, and resurfacing with drainage improvements. The majority of projects fall into either Path 1 or Path 2. Slightly more complex projects will fall into Path 3. They may involve right of way relocations or impacts to more sensitive resources. Path 3 projects generally require a categorical exclusion 2 (CE-2), and require more time to coordinate and develop appropriate points of contact. Categorical Exclusions are actions which meet the definition of environmental regulations, 40CFR 1508.4, that based on past experience with similar actions, do not involve significant environmental impacts. Projects in Paths 4 and 5 are rare, but also very time consuming and involve much higher levels of planning and coordination. Path 4 will typically be in rural settings, and Path 5 will tend to be more urban settings. Path 4 and Path 5 projects are significant projects that generally require a detailed categorical exclusion or higher level environmental document. They are more complex projects and are frequently on new alignments or in sensitive areas.

Regardless of the type of PDP, interaction and coordination with environmental resource agencies is included. On the lower level projects (path 1-3) it may be more informal via email and coordination letters. The public involvement process for lower level projects is likely as part of STIP and TIP development. Whereas, higher level projects will instigate more specific and targeted outreach to the public, resource agencies, and stakeholders.

The PDP follows roughly the same process from Planning to Construction. The difference is in the level of detail needed for various paths. More information on the PDP can be found on ODOT's website on the Office of Environmental Services page.

ENVIRONMENTAL PROJECTS

Occasionally, opportunities arise where environmental projects and typical construction projects collide and create win-win scenarios for both the infrastructure system and the environment. See the following as examples.

ENVIRONMENTAL MITIGATION

Although it is the intent of LCATS and ODOT to strive to avoid, to the fullest practical extent, any activity that adversely impacts the environment during the design, construction, or maintenance of the transportation system; this analysis was completed to identify those long range transportation projects that could potentially impact the various resources. It is important to keep in mind that projects are conceptual at the Transportation Plan stage. When a project moves forward from the Transportation Plan and begins development it also begins the Project Development Process (PDP). This process triggers the National Environmental Policy Act (NEPA); allowing for project specific data to be collected and investigated in further detail. The intent of this early identification of potential conflicts between environmental resources and projects is to encourage early communication and cooperation between resource agencies and transportation officials and project sponsors.

This section includes mapping of project locations overlaid with environmental resources. These mapping efforts illustrate potential environmental impact areas that will be further defined and evaluated during the PDP. This mitigation was process was developed by ODOT in cooperation with the state, federal and tribal resource agencies.

Water Resources

General Discussion:

ODOT and LCATS strive to avoid, to the fullest extent practicable, any activity that adversely impacts streams or wetlands during the design, construction, or maintenance of the state transportation system. ODOT takes appropriate action throughout the project development process to avoid, minimize, and mitigate impacts as required by federal, state, and local law. In the event that impacts to streams and wetlands are unavoidable, ODOT considers a wide variety of mitigation strategies, which always begins with evaluation of on-site opportunities (e.g natural channel design techniques, bankfull culverts, wetland creation, etc.) within the project work area. Once the on-site (within the project area) resources are exhausted, the search for mitigation opportunities may shift to on-site, within one mile of the project area, followed by a search within a specific 8 Digit Hydrological Unit Code (HUC) watershed. Mitigation opportunities may include

mitigation banking, stream and wetland creation, restoration, and/or preservation, and possibly even preservation of upland buffer adjacent to stream and wetland resources.

Impact analysis and mitigation are integral parts of the project development process. Early review and analysis of project alternatives by regulatory and resource agencies combined with effective inter-office coordination are required to develop successful transportation projects.

ODOT follows guidelines for the development of mitigation as required by the U.S. Army Corps of Engineers (USACE) and Ohio Environmental Protection Agency (OEPA). The USACE mitigation guidelines are outlined in the latest USACE Regulatory Guidance Letter (RGL) 02-02, dated December 24, 2002. This guidance can be located in Appendix T. Ohio EPA has specific guidelines for wetland mitigation, which is included in the Ohio Administrative Code Sections 3745-1-50 through 3745-1-54, "The Wetland Water Quality Standards." Although mitigation is now being required for unavoidable impacts to streams there are currently no formal rules in Ohio. Stream mitigation for ODOT projects is being accomplished on a case-by-case basis and is negotiated with OEPA and USACE by OES through the pre-application/coordination and waterway permit processes.

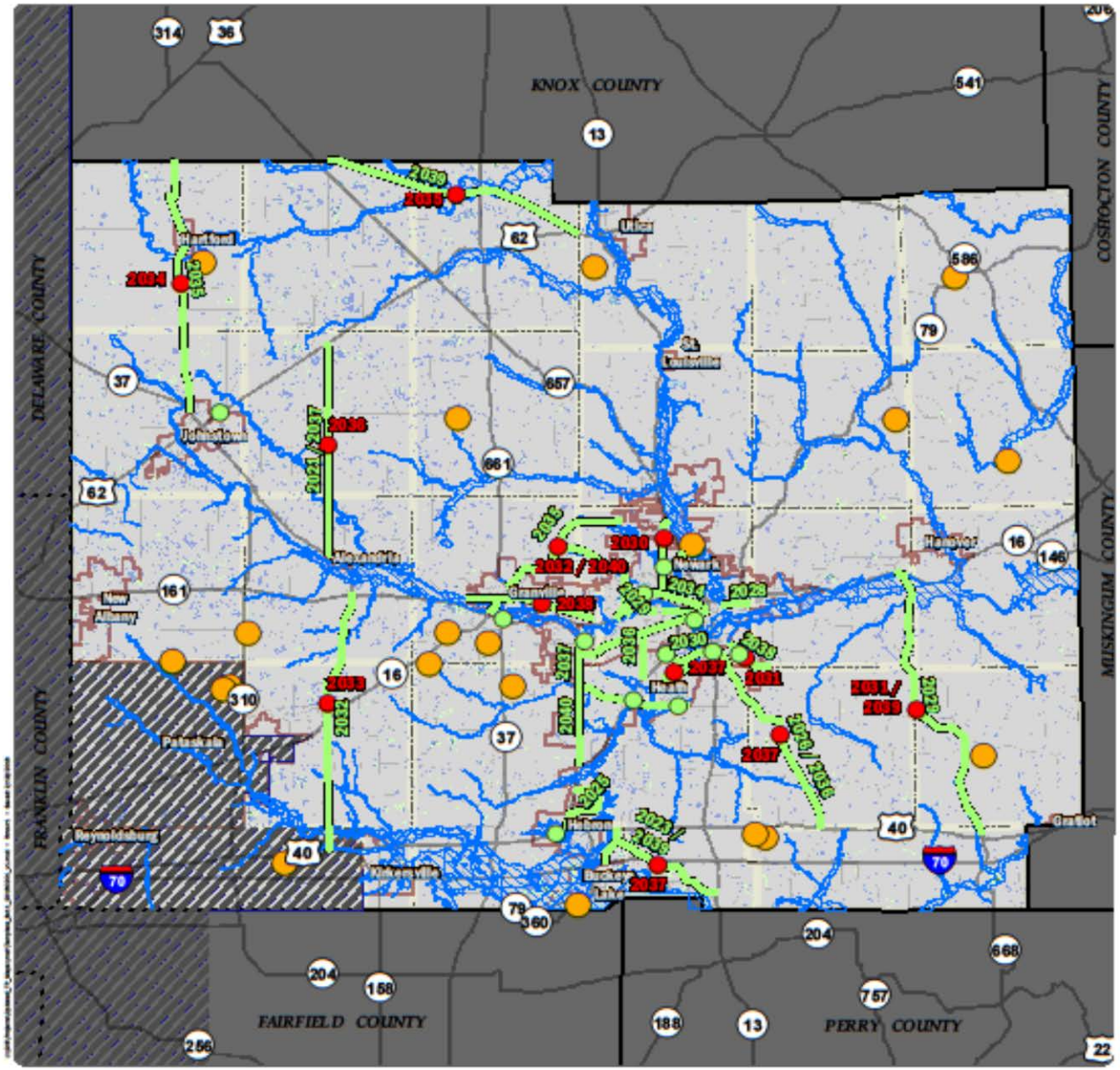
Development of Mitigation Projects:

ODOT's general procedure for securing required mitigation for stream and wetland impacts includes:

A. Determination of mitigation needs. The Ecological Survey Report (ESR) documents these potential project impacts.
B. Analyze potential mitigation opportunities within the project area and/or close proximity (one mile) or within a specific 8 Digit Hydrological Unit Code (HUC) watershed (See Appendix O for 8 Digit HUC Watershed Map) where the impacts are anticipated to occur. This may require a partnership between ODOT and various organizations or individuals such as a watershed groups, conservation groups, a local park districts, the Ohio Department of Natural Resources, or even a private landowner to secure appropriate mitigation.
C. Develop preferred plan of action for mitigation
   - Select mitigation site(s); [on-site, off-site, or mitigation banks
   - Provide funds to partnering organization for mitigation projects
   - Pursue conservation easements
D. Develop conceptual mitigation plan/report.
E. Coordinate conceptual mitigation plan/report with resource and regulatory agencies.
F. Submit approved conceptual mitigation plan/report with waterway permit applications.
G. Develop final mitigation plan, for submission to agencies prior to permit authorization.
   - Develop construction plans
   - Procure conservation easements
   - Provide funds to partnering agencies
   - Procure credits at Mitigation Banks
H. Construct Mitigation Project.

I. Monitor Mitigation Project. ODOT performs post construction monitoring on all mitigation sites for a minimum of 5years to assure successful development and to meet waterway permit conditions.

ODOT-Office of Environmental Services in cooperation with ODOT Districts, the ODOT- Office of Real Estate, the ODOT- Office of Aerial Engineering, and project consultants coordinate to develop all stream and wetland mitigation projects.



2017 - 2040 TRANSPORTATION PLAN
LCATS FUNDING - WATER RESOURCES

Licking County, Ohio

- Dam Locations
- Woody Wetlands
- Wetlands
- Flood Hazard Areas
- Funded Projects
- Funded Projects
- Unfunded Projects
- Municipal Limits
- Township Sections
- MORPC Study Area

0 Miles 225

LOCATION MAP

LCATS

LICKING COUNTY PLANNING COMMISSION

Threatened & Endangered Species

Statewide, Ohio harbors a great diversity of wildlife and plant communities. Many species receiving federal or state protection are tied closely to their habitats. Land-use change has been the most common cause for decline in species range and diversity. Contamination and degradation of natural waters has also contributed to loss of habitat. Loss of wetlands and forests has contributed largely to the federal and/or state listing of over 500 plants and animals within Ohio, including a variety of mammals, birds, reptiles and amphibians, mollusks, insects, fishes, and plants. Of those species, there are less than 10 mammals including bobcat, black bear, and the Indiana bat.

During project development ODOT coordinates with numerous regulatory agencies to determine if protected species are likely to be encountered within the project area. If a threatened or endangered species is suspected of existing within the project area a specific survey is often undertaken to determine presence.

During the development of the Cherry Valley interchange project, the area was surveyed to identify the types of bats that habitat in the area. Bat netting was conducted and the bats collected were evaluated. No Indiana bats were found, however, several varieties were catalogued.

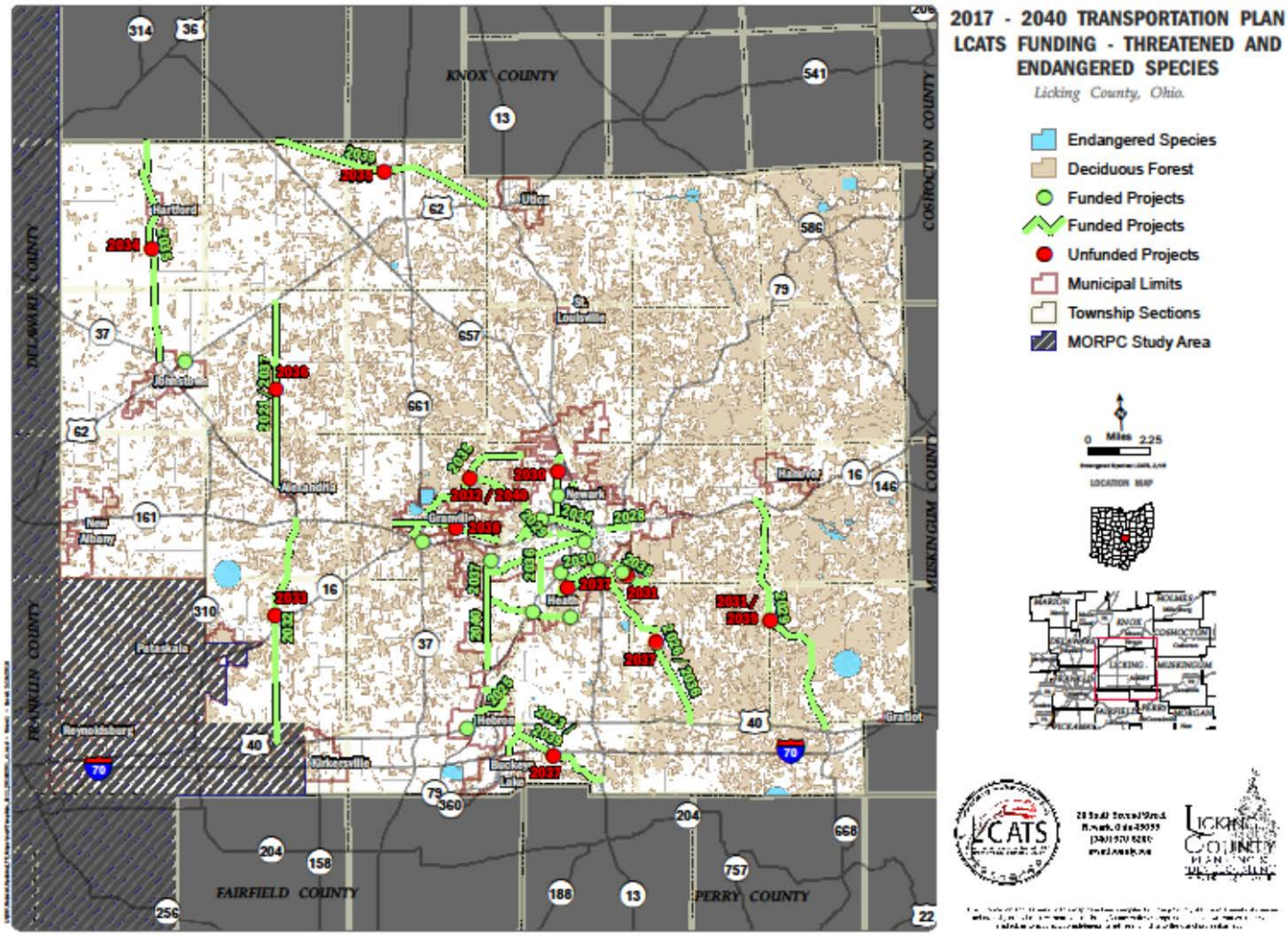
All ODOT projects are planned and designed to comply with the National Environmental Policy Act, Endangered Species Act, Clean Water Act, and Ohio Revised Code to name a few. The Endangered Species Act and Ohio Revised Code are the specific federal and state legislation that provides for the protection and conservation of plants and animals within Ohio. The rules and regulations associated with these laws dictate that ODOT will build and operate their roadway projects with no, or minimal impacts to protected species and their habitat (including potentially unoccupied habitat).

There are a variety of commitments and mitigation techniques that ODOT utilizes on projects to protect listed species. These differ depending on the habitat and the species that are to be protected. The more common commitments and mitigation ODOT makes regarding protecting federal and state listed species include:

- Restricting the clearing of trees to the period between September 15 and April 15 to avoid potential impacts to roosting Indiana bats.
- Relocation of listed mussel and plant species out of construction areas.
- Prevention of disturbance of Indiana bats from blasting activities near sensitive subterranean areas (primarily in southeastern Ohio).
- Timely removal of carcasses from roadways to minimize the potential of vehicles striking scavenging bald eagles.
- Measures to allow terrestrial species such as bobcat, black bear, timber rattlesnake, etc. to pass unharmed through construction areas.
- Measures to ensure that all equipment is in proper working order to minimize construction noise and reduce the risk of equipment spills and leaks.

- Construction and post construction plan notes are included requiring strict adherence to ODOT's Construction and Material Specifications for Sedimentation and Erosion Control.

An example of integrating animal features into the design was on the Etna Parkway Extension, a Job Ready Site project in Etna Township and the City of Pataskala. On a another project constructed in Licking County using state and local funds, a wetland located outside of the limits of construction was identified as growing and becoming more healthy. Although there was no evidence of threatened or endangered species, a special crossing was included so that animals could reach the growing wetland habitat unharmed.



Section 4(f)

Overview

Section 4(f) of the U.S. Department of Transportation Act requires that special effort be made to preserve public park and recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) specifies that federally-funded transportation projects requiring the use of land from a public park, recreation area, wildlife and waterfowl refuge or land of significant historic site can only occur if there is no feasible and prudent alternative. Using Section 4(f) land requires all possible planning to minimize harm.

Ohio has numerous Federal, state and local parks, wildlife and waterfowl refuges and national registrar historic sites. These sites are important to our communities and heritage. However at times, transportation projects impact Section 4(f) resources and require specific measures to minimize harm or mitigate the impacts. These activities involve close coordination with the officials that have jurisdiction of the specific resources.

Investigation of Section 4(f) resources and investigation of potential impacts occur throughout ODOT's Project Development Process (PDP) for individual projects. The intent of evaluating project resources throughout the process helps to guide projects toward practical solutions while minimizing impacts when no feasible and prudent alternative exists. The availability of detail during the PDP on the preferred alternative allows for closer examination of the potential for Section 4(f) impacts and a clearer determination of how impacts should be processed. Once this is known, project sponsors and officials that own the resources can follow a process for mitigation.

Often times, transportation officials are aware of and account for regional Section 4(f) resources that are important for preservation and community cohesion. Other resources may not be as well known, but are afforded the same protection under Section 4(f). Long range planning should account for well-known Section 4(f) resources throughout the region that would pose a significant loss if impacted. It is however, premature to analyze individual projects' Section 4(f) impacts this early in the process.

Measures to Minimize Harm and Mitigation

In cases where projects do have Section 4(f) impacts and there is no feasible and prudent alternative to avoid use of the resource, the project approval process requires the consideration of "all possible planning to minimize harm". Minimization of harm may entail both alternative design modifications that lessen the impact on 4(f) resources and mitigation measures that compensate for residual impacts. Minimization and mitigation measures should be determined through consultation with the official or the agency owning or administering the resource. Neither the Section 4(f) statue nor regulation requires the replacement of 4(f) resources used for highway projects, but this option is appropriate as a mitigation measure for direct project impacts.

Mitigation measures involving public parks, recreation areas, or wildlife and waterfowl refuges may involve a replacement of land and/or facilities of comparable value and function, or monetary

compensation, which could be used to enhance the remaining land. Mitigation of historic sites usually consists of those measures necessary to preserve the historic integrity of the site and agreed by FHWA. In any case, the cost of mitigation should be a reasonable public expenditure in light of the severity of the impact on the Section 4(f) resource in accordance with Federal requirements. Mitigation for common Section 4(f) resource impacts may be:

- Improving access or expansion/pavement of parking area
- Landscape or screening of resource
- Installation of beautification enhancements such as park benches, trash receptacles, signage, etc...
- Maintenance of traffic accommodation or rerouting of traffic
- Minimizing construction noise or limiting construction to specific times
- Direct compensation for improvements to on-site resources
- Design refinements

While we strive to identify and protect all aspects of Section 4F and Cultural Resources, of particular interest is part of our regions earliest transportation network and culture. While many communities can trace their transportation network back to early toll roads of the 1800s and a few have histories that can match up early settler and Indian trails as the basis for their community's earliest paths back to the 1700s. Our community clearly has many miles of roadways that now lay on those same paths. However, our earliest road network, with vestiges that still exist, date back more than 3,000 years.

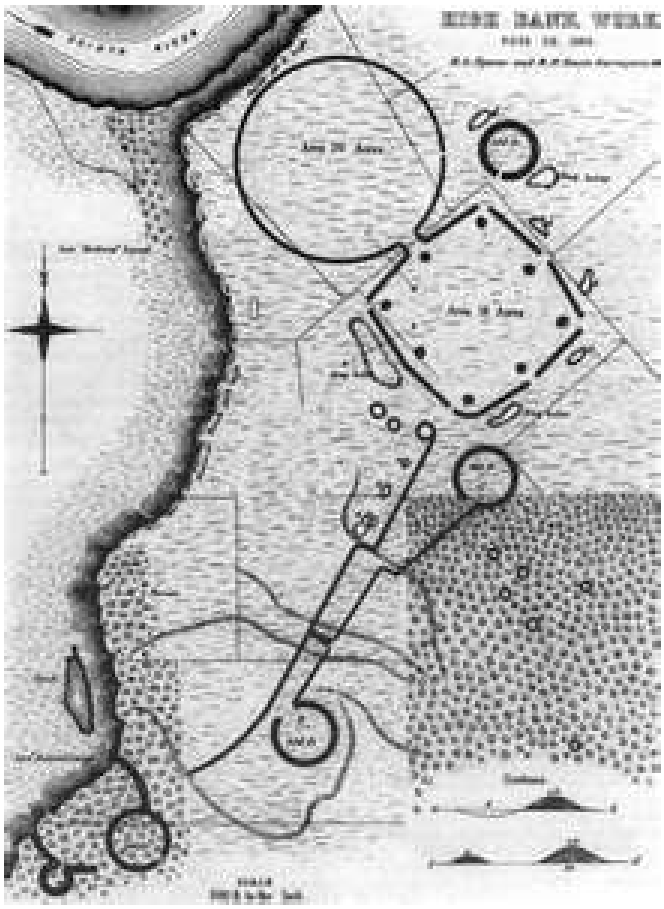
A series of "earthworks" comprising of raised earthen mounds and large earth "drawings" were connected by a roadway that appears to have been marked with five-foot high, 200 feet apart parallel earth berms.

> "These walls proceed south a short distance, thence making one or two slight turns, finally settle to S. 27º W., in which direction we have traced them some six miles over fertile fields, through tangled swamps and across streams, still keeping their undeviating course. The extent of this great fortified high way, and what other ancient stronghold or place of importance it connects with, is as yet unknown..."
>
> James and Charles Salisbury, 1862

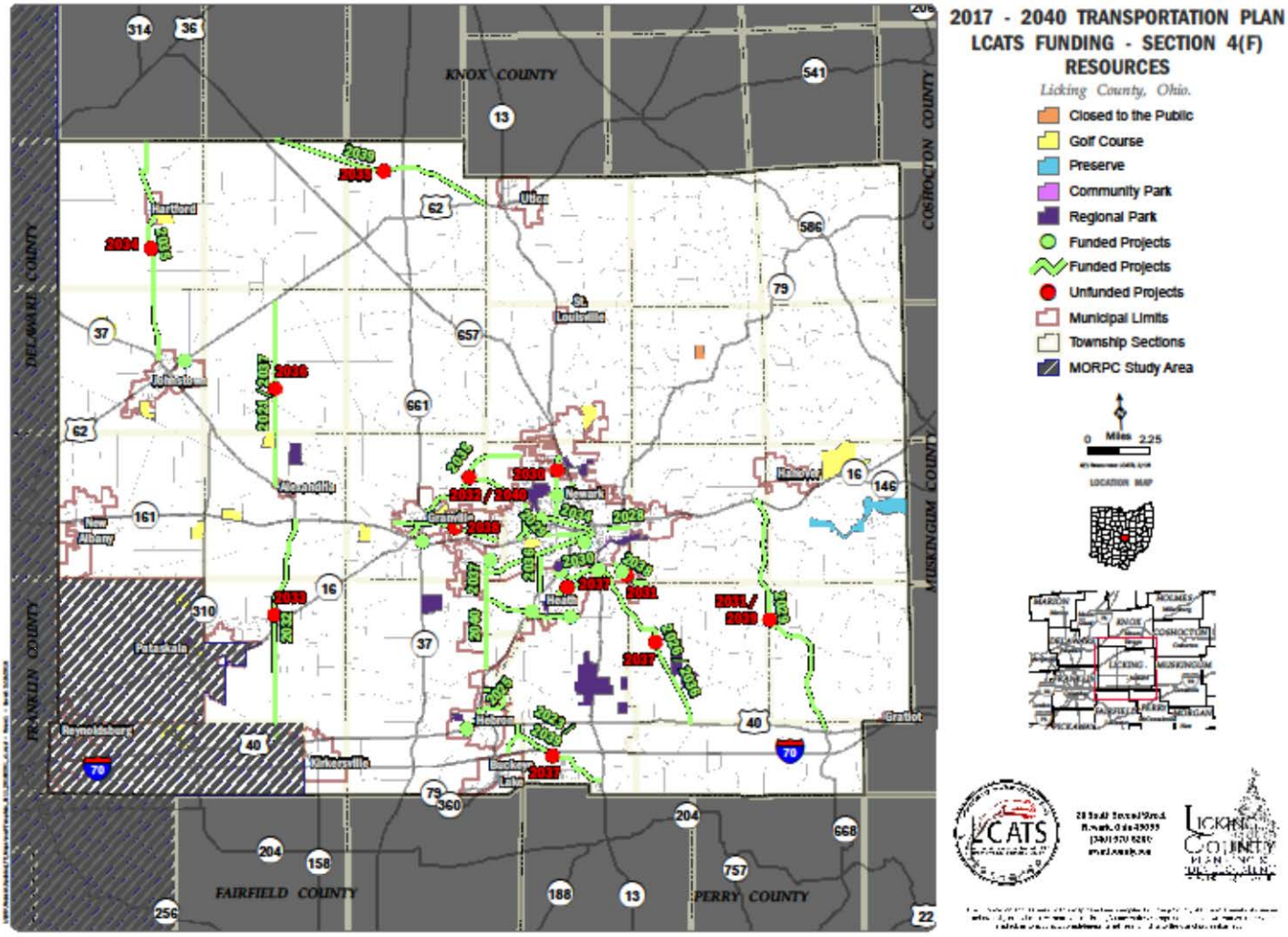
These roadways and impressive earthworks, first documented by the Smithsonian Institution in 1847, may have included a roadway over 50-miles from what is now Chillicothe to Newark Ohio according to some archeologists. The two most incredible earthworks are knows as the Newark Octagon and the Newark Great Circle. Both of these are part of the State of Ohio's official prehistoric monument and are also under consideration to be listed on the United Nation's UNESCO World Heritage sites. The site of the Octagon was apparently used, at least in part, as a lunar observatory. It is now protected by a long-term lease between the Ohio Historical Connection and Moundbuilders County Club and purposes as a golf course. The Great Circle, with its high walls and interior trench or moat appears to have been used for great gatherings and ceremonies of the Hopewell people and has served for many purposed throughout the years. All development and roads have been built around this massive property. Tying these, and other,

major earthworks was a roadway. Multiple roads seem to have also led different directions from these earthworks.

Scattered throughout the countryside of our community, various earth sculptures and large mounds were also built thousands of years ago that still uniquely identify our community's landscape. These mounds, the roads, the earthen sculptures, and prominent man-made earthworks were created in what archeologists refer to as the Early Woodland Period, circa 800 B.C. to 100 A.D. The people who lived here (now referred to as the Hopewell Indians) as well as a much larger area of the Ohio River Valley apparently established the roadways, not just paths, but for great volumes of people (and likely products) to use them to tie the various communities together. This is much in the same way we first had toll roads, then national roads and later the interstate system. The ancient roads led to large gathering places like our roads now lead to villages, towns, and cities.



It is not possible to view these massive, enduring identities of our community without leaving with the impression that we now live, work, and travel in and on land that has been extremely valued by prior people for thousands of years and we bear the responsibility of continuing care of the lands.


2017 - 2040 TRANSPORTATION PLAN
LCATS FUNDING - SECTION 4(F)
RESOURCES
Licking County, Ohio.
Closed to the Public
Golf Course
Preserve
Community Park
Regional Park
Funded Projects
Funded Projects
Unfunded Projects
Municipal Limits
Township Sections
MORPC Study Area
0 Miles 2.25
LOCATION MAP
KNOX COUNTY
COSHOCTON COUNTY
MUSKINGUM COUNTY
DELAWARE COUNTY
FRANKLIN COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Newark
Granville
New Albany
Hanover
Heath
Pataskala
Reynoldsburg
Kirkersville
Buckeye Lake
Gratiot
LCATS

Cultural Resources

Overview

Cultural resource reviews for all ODOT projects are planned and designed to comply with the National Environmental Policy Act, the National Historic Preservation Act, the Department of Transportation Act, the Ohio Revised Code and 36 CFR Part 800 (the implementing regulations for Section 106 of the National Historic Preservation Act). All of these require that cultural resources be considered during the development of all highway projects in Ohio. An element of that consideration involves consulting with various entities, including the Federal Highway Administration (FHWA), the State Historic Preservation Office (SHPO), Advisory Council on Historic Preservation (ACHP), City Historic Preservation Offices, local public officials, local organizations, and the public.

Mitigation measures developed through the Section 106 Memorandum Of Agreement consultation process provide ways to avoid, minimize, or mitigate adverse effects to historic properties (i.e., those listed in or eligible for listing in the NRHP) impacted by projects. These mitigation measures are carried through as environmental document commitments and must be completed and accounted for with SHPO and FHWA. Furthermore, the MOA is not closed until all stipulations are fulfilled. A failure to meet all stipulations can potentially jeopardize a project sponsor's funding or other agreements or projects.

A plan for mitigating an adverse effect is site/property specific and requires a separate research design or approach for each historic property impacted by the project. It should be based on the context development and refinement through the preceding Phase I and Phase II work.

Mitigation measures may involve a variety of methods including, but not limited to, aesthetic treatments, avoidance, archaeological data recovery, creative mitigation, salvage and re-use of historic materials, informing/educating the public, and Historic American Buildings Survey (HABS)/ Historic American Engineering Record (HAER) documentation. Approaches vary widely depending on the type of historic property, the qualities that enable the property to meet the National Register of Historic Places (NRHP) Criteria of Eligibility, the location of the historic property with respect to the project, etc. Mitigation plans are developed in consultation with ODOT, SHPO, FHWA, consulting parties (i.e., local officials, organizations, public), federally recognized Native American Indian tribes, and on occasion, the ACHP.

HABS/HAER Recordation

HABS/HAER recordation documents buildings and engineering structures (e.g., bridges), respectively, that are listed in or eligible for listing in the NRHP. In Ohio, the SHPO requires Level 2 documentation for HABS/HAER recordation. Level 2 archival documentation consists of large-format (4'x5') black-and-white negatives and prints, a written historical report, and photographs or photographic reproductions of selected existing drawings.

The following bridges are included on the register in Licking County:

Location/name	Crosses	Type of Structure	Year Built
Blackhand Gorge bikepath	Claylick Creek	Metal Thru Truss	1890
East Main Street – Newark	North Fork	Steel Thru Truss	1898
Gregg Mill Covered Bridge – Fallsburg	Wakatomika Creek	Wood Thru Truss	1881
Pedestrian – Fireman's Park		Wood Thru Truss	1871
Shoults Covered Bridge	Wakatomika Creek	Wood Thru Truss	1879
Old national Road near Amsterdam	Tributary Bowling Green	Stone Slab	1830
Boy Scout Camp – Previously the Seven Hills Rd over Columbus & Ohio Railroad	Rocky Fork Creek	Metal Pony Truss	1875
Golf Course Path	Former Johns Creek	Steel Pony Truss	1905
Rodrick at OSU Newark	Stream	Metal Thru Truss	1872
Bike Path near Reddington	Raccoon Creek	Metal Thru Truss	1887
Pedestrian at Boy Scout Camp		Wood Thru Truss	1900
Private Drive near Hickman	Rocky Fork	Wood Thru Truss	1947

Documentation must follow the Secretary of the Interior's Standards and Guidelines for Architectural and Engineering Documentation:

- HABS/HAER Standards (U.S. Department of the Interior 1993)
- HABS Historical Reports (U.S. Department of the Interior 2000)
- Recording Historic Structures & Sites for the Historic American Engineering Record (U.S. Department of the Interior 1996).

All are available online at http://www.cr.nps.gov/habshaer.

Archaeological Data Recovery

Phase III archaeological data recovery investigations are intended to mitigate the adverse effect to archaeological sites listed in or eligible for listing in the NRHP. Mitigation is achieved through intensive large-scale excavations and through detailed analysis of the resultant cultural remains which were encountered during these excavations. Archaeological data recovery plans are developed in consultation with ODOT's Office of Environmental Services and the SHPO. The results of all data recovery investigations are summarized as a technical report that are reviewed and approved by ODOT-OES and the SHPO. Completion of the fieldwork and the final report of findings are considered an environmental document commitment. Approval of the final report generally fulfills the agency's responsibility for the commitment.

Data recovery plans are developed on a project-by-project basis and are designed to recover appropriate types of pertinent information related to the context, which makes the sites significant. Field investigations and analyses are problem oriented and are designed to answer specific questions regarding the site and its context. Data recovery plans specifically outline the site context and formulate hypotheses how site research can address these hypotheses. The plans also outline field procedures and propose methods needed to record a site's physical context and any structural elements related to the resource. Each plan should also outline approaches to better recover data and devise analytical methods to best describe associated artifacts, which may be recovered.

The final data recovery mitigation report should include a summary of the approach from the data recovery plan along with the findings of the excavation in order to address how the recovered assemblage relates to the site's historic context. Ways to publicly disseminate the results of data recovery investigations are also considered to be an important part of any mitigation plan.

Superfund Sites & Environmental Site Assessments

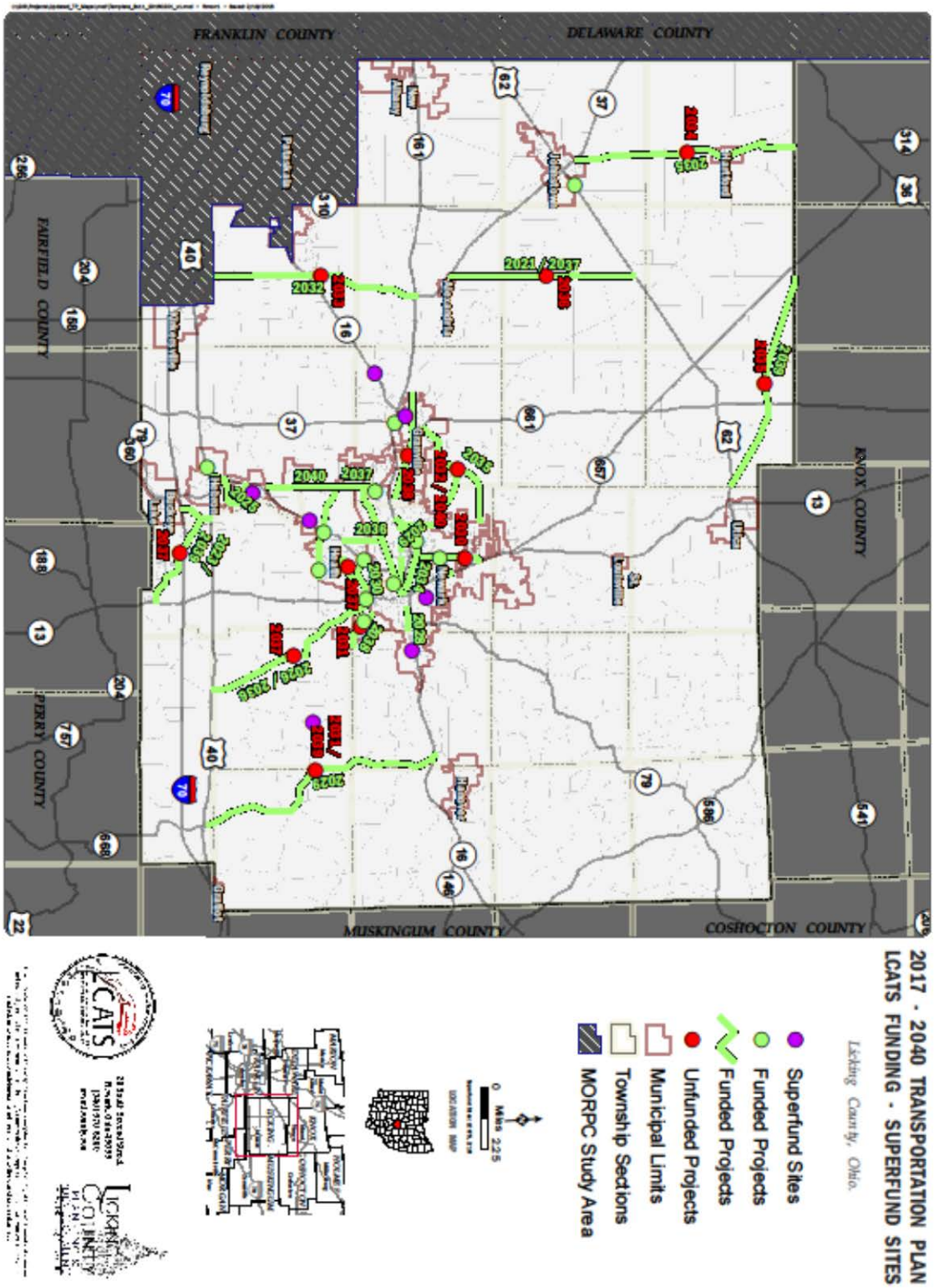
Overview

While other types of environmental mitigation activities are generally to nullify negative impacts to valuable resources, environmental mitigation activities are also considered for sites where land has been contaminated from previous uses. During the Project Development Process (PDP) the project study area or site is evaluated for the need to complete an Environmental Site Assessment (ESA). An Environmental Site Assessment (ESA) is a study used to determine if any hazardous substances are present and determine the potential involvement of a project's earth-disturbing construction activities with documented environmental releases from adjacent properties.

In general, ESA's are conducted in response to two federal laws: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (Public Law #96-510) as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986 (Public Law #99-499) and the Resource Conservation and Recovery Act (RCRA) of 1976 (Public Law #94-580). RCRA deals with waste management including the manufacture, storage, transportation, use, treatment, and disposal of wastes including hazardous waste. CERCLA establishes liability that forces cleanup costs of contaminated sites to responsible parties. SARA modified CERCLA to provide defenses to the liability provisions for contaminated sites.

Project locations that involve Superfund sites will be very costly to mitigate, and will likely result in added time and expense for the overall project. For this reason these sites are considered in the planning process as they could significantly impact the project alternative selection process as major 'red flags.'

As with any other form of environmental mitigation, the exact mitigations that are appropriate are defined and evaluated on a project-by-project basis as part of the Project Development Process.


FRANKLIN COUNTY
DELAWARE COUNTY
FAIRFIELD COUNTY
KNOX COUNTY
PERRY COUNTY
MUSKINGUM COUNTY
COSHOCTON COUNTY
2017 - 2040 TRANSPORTATION PLAN
LCATS FUNDING - SUPERFUND SITES
Licking County, Ohio.
Superfund Sites
Funded Projects
Funded Projects
Unfunded Projects
Municipal Limits
Township Sections
MORPC Study Area
0 Miles 225
LOCATION MAP
LCATS

ENVIRONMENTAL JUSTICE

A good transportation system is not optional for economically viable and sustainable communities. Individuals with limited financial resources or disabilities are even more at risk if the transportation system adversely affects them. Environmental Justice is the fair treatment of individuals regardless of their race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, or policies.

It is LCATS intent to not adversely affect any specific population of our community. To assure this, we have evaluated project lists included in the plan and compared the impact to EJ populations versus the population as a whole. The technical findings are summarized below. But, the results show that projects improve the quality of transportation and transportation choices to all residents equally regardless of their EJ status. This meets the goal of treating everyone fairly and equitably. LCATS will also continue to develop project specific evaluations to assure that for a specific project there is not an adverse effect to any specific population.

ENVIRONMENTAL JUSTICE TECHNICAL ANALYSIS SUMMARY

Completed by Greg Giaimo, P.E.
Ohio Department of Transportation
Bureau of Planning
Office of Technical Services
Section of Modeling and Forecasting

The Travel Demand Forecasting Model was used to objectively quantify the impact of the transportation plan on the population subject to environmental justice consideration (henceforth referred to as the EJ population). Impacts were determined in two categories, accessibility benefits and negative impacts related to the acquisition of land for major new alignments.

To calculate accessibility benefits, the accessibility of each zone with respect to the trip purposes in the model (work, school, shop, other) was calculated as:

$$ACCi = \Sigma j\ (F(TTij) * Aj)$$

Where:
ACCi = Accessibility of zone i.
F(TTij) = Function of the travel time from zone i to zone j (referred to as friction factors).
Aj = Trip attractions of the given trip purpose in zone j.

The area-wide accessibility of a given segment of the population with respect to a given trip purpose was then calculated as:

ACC = $(\Sigma i\ (ACCi * POPi))/POP$

Where:
ACC = Accessibility of subject population segment in the study area.
POPi = Population of the given segment in zone i.
POP = Area-wide total of the given population segment.

This computation was made for both the total area population and the EJ population. This was done for both year 2012 and two scenarios for year 2035 (build and no-build).

The second category of impact was determined by flagging all new roadways in the 2035 build network (versus 2012). These flagged links were then used to flag the traffic analysis zones that they intersect. The total and EJ populations in these flagged zones was then calculated and the percentage of each versus the area wide totals was calculated and compared.

Outcome:

Percent of Area Population in Zones Impacted by Major Right of Way Acquisition

Disadvantage	2.55%
Total	2.54%

Number	Desc
1	Raccoon Cr bridge
2	Mink Rd/SR 161 interchange

Note, IR 70 widening assumed in median with minimal RW impacts
Note, US62 two-way left turn lane asumed strip takes only with minimal RW impacts

Accessibility of EJ Population

Accessibility to	work	school	shop	other	Tot
2015 existing	8201	14889	8945	7712	39747
2040 no build	8851	14872	11418	9534	44674
2040 build	9567	15083	11531	9712	45893

Accessibility of Total Population

Accessibility to	work	school	shop	other	Tot
2015 existing	6970	11790	7133	6254	32148
2040 no build	7445	11441	8744	7553	35182
2040 build	8130	11653	8835	7706	36324

2040 Build/Existing					
EJ	1.167	1.013	1.289	1.259	1.155
Total	1.166	0.988	1.239	1.232	1.130
2040 Build/Nobuild					
EJ	1.081	1.014	1.010	1.019	1.027
Total	1.092	1.019	1.010	1.020	1.032

For entire Environmental Justice computation set see Appendix II.

FINANCIAL ANALYSIS

FINANCIAL CONSTRAINTS

One of the requirements of the FAST Act is that Long Range Transportation Plans be fiscally constrained. That is, the plan must demonstrate that the funding necessary to implement the projects in the plan can be reasonably expected to be available. In order to fulfill this requirement, project costs must be estimated and federal, state, and local funding revenues must be forecasted. In addition, project costs must take into account inflation forecasts.

In order to perform such an analysis, LCATS reviewed various funding sources and trends to develop reasonable forecasts for federal, state and local transportation revenues. While these estimates were developed based on a variety of assumptions, it is a reasonable approach to demonstrating fiscal constraint.

IMPACT OF INFLATION

With the requirement to consider future costs and future revenues into long range transportation planning, the impact of inflation becomes a significant factor. For many years construction inflation was steady or rose at nominal rates. Moderate revenues increases, primarily from increase in gas tax revenues, were able to keep pace with inflation. During the early 2000's, overall construction costs increased at predictable rates. Increases have been felt on all levels of government, from the world marketplace to local governments. The costs have been driven up for a variety of reasons. Many transportation costs are petroleum based, causing increases in asphalt, plastic pipe, and machinery costs. Also impacted by the cost of petroleum is the delivery of components to the construction site. The world demand for cement, the binder in concrete, has pushed concrete oriented project costs higher. Further adding insult to injury, is the cost for steel.

The volatility makes it difficult to predict future costs. ODOT has been tracking and predicting futures using sophisticated economic models. LCATS recognizes these efforts and has adopted these forecasts as the best available information available to forecast costs. ODOT bases their projections on future market analysis and ties estimates to producer price indices (PPI) for a wide range of construction related products. They also utilize a 'market basket' approach that prorates the various product types to calculate overall expected inflation rates.

AVAILABLE FUNDING RESOURCES

IMPACT ON REVENUE SOURCES

While inflation is unpredictable, traditional transportation revenue sources are not keeping pace with the increases. Many revenue sources are remaining flat or decreasing. With the increase in gas prices, consumers are becoming more efficient in their driving habits, causing the total gallons sold to flatten. Gas tax is collected on a per cent basis per gallon, not as an index of the total cost

per gallon. The increase in fuel-efficient cars and alternative fuels that are not taxed has also added to the flattening and decrease in gas tax receipts.

LCATS used actual TIP allocations from 2000-19 to project future funding. The annual rate of increase was projected to be 2.6% for STP and 2.34% for CMAQ. These percentages are a full point below ODOTs business plan rate.

LCATS looked at federal and non-federal revenue streams. Federal revenue streams were also assigned to specific projects or to line item project types for preservation and safety projects. As each funding source was evaluated the revenue streams were also calculated based on the expected revenue of the source.

FUNDING CATEGORIES

There are a variety of federal, state, and local revenue sources available for transportation projects. Some of these funds are made directly available to LCATS, and therefore are under the control of the LCATS Policy Board. Other funds, which may be used on routes within the LCATS area, are also available, but are generally controlled by the State and local jurisdictions. Additionally, funds are available for the operation and maintenance of transit programs. The City of Newark and the Licking County Transit Board (LCTB) is a recipient of these funds.

FEDERAL FUNDS MADE DIRECTLY AVAILABLE TO LCATS

Since the inception of ISTEA in 1991, LCATS has been sub-allocated Surface Transportation Program (STP) funds, Congestion Mitigation Air Quality (CMAQ) funds. These funds are granted to LCATS based on the population of its urbanized area and are administered through the Ohio Department of Transportation.

Surface Transportation Program

The Surface Transportation Program (STP) is a block grant type of program. The highways eligible for STP funding include those highways defined as Federal-Aid Routes. Additionally, STP funds are flexible and allow funds to be used for other modal projects, such as capital transit projects, carpool projects, traffic monitoring, and bicycle/pedestrian trails. The participation rates for STP funds are 80 percent federal and 20 percent local. LCATS has used the 2000-19 TIP funding to project future funding amounts. For STP funding LCATS projected a 2.6% annual increase in funding.

Congestion Mitigation Air Quality

Congestion Mitigation Air Quality (CMAQ) funds are less flexible and funding is directed towards transportation projects in areas designated as non-attainment or maintenance for air quality. (Licking County currently is designated as maintenance for air quality area.) Projects and programs are only eligible for CMAQ funds if they can document that they will improve air quality and reduce congestion. The participation rates for CMAQ funds are 80 percent federal and 20

percent local. The Energy & Independence Act passed via congress allows up to a 100% federal rate on projects. LCATS has used the 2000-19 TIP funding to project future funding amounts. For CMAQ funding LCATS projected a 2.34% annual increase in funding.

ODOT CONTROLED FUNDING SOURCES (Not under the control of LCATS)

ODOT handles or administers many different federal silos of federal transportation funds. LCATS **adopted the ODOT assumptions of funds increasing at 3.5% per year until 2040**.

Pavement Funds for State system

Funded projects under this program are determined by the Ohio Department of Transportation and are for 2-lane, multilane and interstate projects. ODOT District 5 estimates the use of an average of $8,230,086 per year from 2013 – 2020. This estimate was increased by 3.5% inflation for the years 2021-2035.

Bridge Funds for State system

Funded projects under this program are determined by the Ohio Department of Transportation and are included in the district preservation bridge funds. ODOT District 5 estimates the use of an average of $2,347,551 per year from 2013 – 2020. This estimate was increased by 3.5% inflation for the years 2021-2035.

Bridge Funds for Municipal system

The Bridge funds for the municipal system for the region are available for use for bridges that are structurally deficient or functionally obsolete. Currently, the maximum that is available per bridge is 2.5 million dollars. Local jurisdictions must apply for these funds. LCATS is assuming that the local jurisdictions will receive an average of ½ million every 3 years. This amount was also increased by 3.5% inflation for years 2021-2035.

County Engineers Association of Ohio (CEAO)

The County Engineers Association of Ohio (CEAO) receives a federal funding allocation of federal transportation dollars for Surface Transportation Program (STP) and Bridge Replacements/Rehabilitation. Some additional funds are also available for safety upgrades. LCATS is assuming that the county engineer will receive an average of 1 million every 2 years. This amount was also increased by 3.5% inflation for years 2021-2035.

Safety Projects

Both LCATS and ODOT pursue and use safety funds aggressively. Currently LCATS has several projects under construction on State Route 16 and State Route 79. Safety Projects are for any location that exhibits higher than average accident numbers, rate or severity based on statewide accident records. Cost-effective solutions to highway safety deficiencies are implemented through the Safety Program. Examples of projects include intersection improvements such as traffic signal installations and additional turning lanes, two-way left turn lanes, access management measures and sight distance improvements. LCATS is assuming that the region will receive an average of 1 million dollars every 2 years. This amount was also increased by 3.5% inflation for years 2021-

2035.

Major New /TRAC

This major construction project allotment has had many names over the years. It is specifically for large-scale projects and is a very competitive program based on many varying factors. Currently, there is a move to place a higher value on projects that will also provide increases in economic development.

Railroad Crossing Lights & Gates

Funded projects under this program are determined by the Ohio Department of Transportation and the Ohio Rail Development Commission.

Metro & State Park Resurfacing

ODOT directly allocates a small amount of funds to the Licking County Metro Park System for roadway rehabilitation. State Park funded projects are controlled by the Ohio Department of Natural Resources and administered by ODOT.

Misc. Programs

ODOT handles several other smaller miscellaneous programs. These are competitive in nature and selected directly by ODOT. These are specialized programs and constitute a small part of the overall federal budget.

Other Programs

Several other statewide programs also exist, but are unlikely to have funds allocated to the Licking County region. These include Slips/Slides and Mines, Rest Area reconstruction, retrofit noise walls, rail overpass, Amish Buggy, Appalachian Development, and small cities program.

Summary

LCATS has followed ODOT's 2017-40 Business Plan for its long range plan funding. Using this method shows a total funding amount of $38,150,008 for STP and $31,473,598 for CMAQ funding. These figures were used to align LCATS project and to bring them into projected fiscal constraint.

Federal Revenue Projection 2019-2040 Based off ODOT Business Plan							
					% Change		
Year	STP	CMAQ	Other Federal	Total Federal	STP & other Federal	CMAQ	Total Federal
2016	$1,140,253	$940,704	$21,097,210	$23,178,167	0.00%	0.00%	0.00%
2017	$1,163,742	$960,083	$21,531,813	$23,655,637	2.06%	2.06%	2.02%
2018	$1,188,879	$980,820	$21,996,900	$24,166,599	2.16%	2.16%	2.11%
2019	$1,215,629	$1,002,889	$22,491,830	$24,710,347	2.25%	2.25%	2.20%
2020	$1,244,682	$1,026,858	$23,029,385	$25,300,925	2.39%	2.39%	2.33%
2021	$1,274,430	$1,051,400	$23,579,787	$25,905,617	2.39%	2.39%	2.33%
2022	$1,304,889	$1,076,528	$24,143,344	$26,524,761	2.39%	2.39%	2.33%
2023	$1,336,076	$1,102,257	$24,720,370	$27,158,703	2.39%	2.39%	2.33%
2024	$1,368,008	$1,128,601	$25,311,187	$27,807,796	2.39%	2.39%	2.33%
2025	$1,400,704	$1,155,575	$25,916,124	$28,472,402	2.39%	2.39%	2.33%
2026	$1,434,180	$1,183,193	$26,535,519	$29,152,893	2.39%	2.39%	2.33%
2027	$1,468,457	$1,211,471	$27,169,718	$29,849,647	2.39%	2.39%	2.33%
2028	$1,503,553	$1,240,425	$27,819,075	$30,563,053	2.39%	2.39%	2.33%
2029	$1,539,488	$1,270,072	$28,483,950	$31,293,510	2.39%	2.39%	2.33%
2030	$1,576,282	$1,300,426	$29,164,717	$32,041,425	2.39%	2.39%	2.33%
2031	$1,613,955	$1,331,506	$29,861,754	$32,807,215	2.39%	2.39%	2.33%
2032	$1,652,529	$1,363,329	$30,575,449	$33,591,308	2.39%	2.39%	2.33%
2033	$1,692,024	$1,395,913	$31,306,203	$34,394,140	2.39%	2.39%	2.33%
2034	$1,732,464	$1,429,275	$32,054,421	$35,216,160	2.39%	2.39%	2.33%
2035	$1,773,870	$1,463,435	$32,820,522	$36,057,826	2.39%	2.39%	2.33%
2036	$1,816,265	$1,498,411	$33,604,932	$36,919,608	2.39%	2.39%	2.33%
2037	$1,859,674	$1,534,223	$34,408,090	$37,801,987	2.39%	2.39%	2.33%
2038	$1,904,120	$1,570,891	$35,230,443	$38,705,454	2.39%	2.39%	2.33%
2039	$1,949,628	$1,608,435	$36,072,451	$39,630,515	2.39%	2.39%	2.33%
2040	$1,996,225	$1,646,877	$36,934,582	$40,577,684	2.39%	2.39%	2.33%
Totals	$38,150,008	$31,473,598	$705,859,774	$775,483,380	56.66%	56.66%	55.35%

LOCAL & OTHER AVAILABLE FUNDING SOURCES (Not under the control of LCATS)

State and local government must also rely on a stream of income for projects that are not eligible for the use of federal funds and to provide the required local match for federal aid projects. Below is a summary of the most common types of local funds used for transportation projects.

Local Gas Tax Revenues

Gas tax revenues have been a traditional mainstay in transportation funding for many years. Recently, gas tax revenues have been flat, and are not anticipated to increase dramatically in the coming years. LCATS has adopted the following growth projection. The revenues will increase slightly, by a total of 3.5% between 2012 and 2016, and then remain flat through 2035. Municipalities and townships rely on these funds as local match to federal projects. The amount received per year, based on 2012 estimates:

In 2012 - $ 2,816,004, which will gradually increase until 2016

In 2016 - $ 2,914,564, which will remain stagnant until 2035

This generates a total of **$69,703,139 from 2012-2035.**

State fuel Tax Distributions

Entity	Name	2012	2016	2017-40
Alexandria	Village	$9,380	$9,708	$9,708
Bennington	Township	$47,164	$48,815	$48,815
Bickeye Lake	Village	$48,560	$50,260	$50,260
Bowling Green	Township	$47,164	$48,815	$48,815
Burlington	Township	$47,164	$48,815	$48,815
Eden	Township	$47,164	$48,815	$48,815
Fallsbury	Township	$47,164	$48,815	$48,815
Franklin	Township	$47,164	$48,815	$48,815
Granville	Township	$47,164	$48,815	$48,815
Granville	Village	$77,334	$80,041	$80,041
Gratiot	Village	$4,252	$4,401	$4,401
Hanover	Township	$47,164	$48,815	$48,815
Hanover	Village	$20,774	$21,501	$21,501
Harrison	Township	$47,164	$48,815	$48,815
Hartford	Village	$6,844	$7,084	$7,084
Heath	City	$205,427	$212,617	$212,617
Hebron	Village	$58,182	$60,218	$60,218
Hopewell	Township	$47,164	$48,815	$48,815
Jersey	Township	$47,164	$48,815	$48,815
Johnstown	Village	$83,487	$86,409	$86,409
Kirkersville	Village	$9,660	$9,998	$9,998
Liberty	Township	$47,164	$48,815	$48,815
Licking	Township	$47,164	$48,815	$48,815
Madison	Township	$47,164	$48,815	$48,815
Mary Ann	Township	$47,164	$48,815	$48,815
McKean	Township	$47,164	$48,815	$48,815
Monroe	Township	$47,164	$48,815	$48,815
Newark	City	$870,996	$901,481	$901,481
Newark	Township	$47,164	$48,815	$48,815
Newton	Township	$47,164	$48,815	$48,815
Pataskala	City	$288,113	$298,197	$298,197
Perry	Township	$47,164	$48,815	$48,815
St. Albans	Township	$47,164	$48,815	$48,815
St. Louisville	Village	$8,932	$9,245	$9,245
Union	Township	$47,164	$48,815	$48,815
Utica	Village	$39,291	$40,666	$40,666
Washington	Township	$47,164	$48,815	$48,815
	County Total	$2,816,004	$2,914,564	$2,914,564
	% Increase		3.50%	0.00%

Vehicle Registrations

Townships, the County and Municipalities receive a portion of the revenue collected from vehicle registrations; this is in addition to the permissive license plate tax collected by municipalities. The state collects a mandatory $ 20 license plate fee that is distributed to local jurisdictions. The $20 is divided to locals in the following distribution:

34% to local municipality or township
47% to the county
9% to the county based on their share of mileage across the state
5% to the township based on their share of mileage across the state
5% to the county based on equal distribution among all 88 counties

Since the majority of these funds are directly sent back to the locals, and the remainder is prorated, LCATS assumes that approximately all of the $20 state collected fee will return to the local jurisdictions. This revenue source is expected to remain fairly constant. **Approximately $3,788,180 will be collected per year, based on $ 20 per registration**, and a total of 189,409 registrations.

An additional amount is also collected for commercial trucks, which is retained by the state. The state also collects $11.00 per plate that is utilized as a highway safety fee. $3.50 is also allowed as a service fee for Deputy Registrar. Personalized license plate fees also generate additional funds for the state and are directed to the State highway Fund.

Local Permissive License Plate Tax

Townships, Licking County and Municipalities currently collect between five and twenty dollars in license plate fees per vehicle registration in addition to the state collected fee of $20. Since 2008, several have increased their plate fees to meet the demands of their infrastructure.

While it is uncertain as to who will or will not increase fees, it is likely that they will increase them as allowed as the condition of the infrastructure continues to decline. This is a frequent source of funds for local resurfacing, culvert replacement, and roadway maintenance staff.

With declining infrastructure condition and ever increasing costs, local jurisdictions will be forced to increase revenues. LCATS predicts that the county, municipalities and townships that are not currently collecting the maximum of twenty dollars to do so in five year and five dollar increments beginning in 2016. The following chart represents these increasing revenues.

Local Permissive License Plate Tax

Name of Entity	Type	2008 per plate fee	2011 per plate fee	# Registrations	2012 projected annual $ available	2016 projected annual $ available	2021 projected annual $ available	2022-2040 projected annual $ available
Alexandria	Village	$10	$10	511	$5,110	$7,665	$10,220	$10,220
Bennington	Township	$5	$5	2,409	$12,045	$24,090	$36,135	$48,180
Buckeye Lake	Village	$20	$20	2,364	$47,280	$47,280	$47,280	$47,280
Bowling Green	Township	$5	$5	2,659	$13,295	$26,590	$39,885	$53,180
Burlington	Township	$5	$5	1,665	$8,325	$16,650	$24,975	$33,300
Eden	Township	$5	$5	1,731	$8,655	$17,310	$25,965	$34,620
Etna	Township	$5	$10	10,545	$105,450	$158,175	$210,900	$210,900
Fallsbury	Township	$5	$5	1,401	$7,005	$14,010	$21,015	$28,020
Franklin	Township	$5	$10	3,094	$30,940	$46,410	$61,880	$61,880
Granville	Township	$5	$5	5,175	$25,875	$51,750	$77,625	$103,500
Granville	Village	$10	$10	4,118	$41,180	$61,770	$82,360	$82,360
Gratiot	Village	$5	$5	194	$970	$1,940	$2,910	$3,880
Hanover	Township	$5	$5	2,678	$13,390	$26,780	$40,170	$53,560
Hanover	Village	$5	$5	1,176	$5,880	$11,760	$17,640	$23,520
Harrison	Township	$5	$5	9,857	$49,285	$98,570	$147,855	$197,140
Hartford	Village	$5	$5	401	$2,005	$4,010	$6,015	$8,020
Hartford	Township	$5	$5	1,648	$8,240	$16,480	$24,720	$32,960
Heath	City	$15	$20	10,654	$213,080	$213,080	$213,080	$213,080
Hebron	Village	$5	$5	2,811	$14,055	$28,110	$42,165	$56,220
Hopewell	Township	$5	$5	1,785	$8,925	$17,850	$26,775	$35,700
Jersey	Township	$5	$5	4,369	$21,845	$43,690	$65,535	$87,380
Johnstown	Village	$5	$5	4,574	$22,870	$45,740	$68,610	$91,480
Kirkersville	Village	$5	$5	508	$2,540	$5,080	$7,620	$10,160
Liberty	Township	$5	$5	3,506	$17,530	$35,060	$52,590	$70,120
Licking	Township	$5	$5	6,149	$30,745	$61,490	$92,235	$122,980
Madison	Township	$5	$5	4,044	$20,220	$40,440	$60,660	$80,880
Mary Ann	Township	$5	$5	2,992	$14,960	$29,920	$44,880	$59,840
McKean	Township	$5	$10	2,200	$22,000	$33,000	$44,000	$44,000
Monroe	Township	$5	$5	3,572	$17,860	$35,720	$53,580	$71,440
Newark	City	$10	$20	44,264	$885,280	$885,280	$885,280	$885,280
Newark	Township	$5	$5	2,822	$14,110	$28,220	$42,330	$56,440
Newton	Township	$5	$5	3,882	$19,410	$38,820	$58,230	$77,640
Pataskala	City	$20	$20	15,740	$314,800	$314,800	$314,800	$314,800
Perry	Township	$5	$5	2,137	$10,685	$21,370	$32,055	$42,740
Reynoldsburg	City	$10	$10	8,177	$81,770	$122,655	$163,540	$163,540
St. Albans	Township	$5	$5	3,001	$15,005	$30,010	$45,015	$60,020
St. Louisville	Village	$5	$5	440	$2,200	$4,400	$6,600	$8,800
Union	Township	$5	$5	6,405	$32,025	$64,050	$96,075	$128,100
Utica	Village	$5	$5	1,996	$9,980	$19,960	$29,940	$39,920
Washington	Township	$5	$5	1,757	$8,785	$87,850	$26,355	$35,140
	County Total			189,411	$2,185,610	$2,837,835	$3,349,500	$3,788,220

Township Road and Bridge Tax Levies

In Licking County a portion of the townships have specific road and bridge real estate tax levies passed by the residents. These resident passed levies are in addition to taxes collected based on real estate values that are allocated to roads and bridges. LCATS assumes that over time the increase will be linear. This source of funding is tied to real estate values and is anticipated to increase by modest amounts, generally around 2 % per year.

The anticipated total to be collected **from 2016 – 2035 is $ 36,386,531**

Road & Bridge Levies

Township	2000	2005	2010	2016	2020	2025	2030	2040
Bennington	$97,444	$155,959	$179,759	$245,171	$281,623	$327,188	$372,753	$463,883
Bowling Green	$27,655	$36,921	$41,204	$50,534	$55,883	$62,569	$69,256	$82,628
Burlington	$16,424	$21,368	$24,347	$29,544	$32,763	$36,788	$40,812	$48,861
Eden	$17,897	$67,767	$126,616	$200,393	$246,773	$304,747	$362,721	$478,670
Etna	$131,598	$236,722	$257,665	$364,395	$419,368	$488,085	$556,801	$694,235
Fallsbury	$11,422	$17,461	$21,339	$25,802	$29,656	$34,472	$39,289	$48,923
Franklin	$81,099	$113,990	$133,999	$175,982	$199,423	$228,725	$258,026	$316,629
Granville	$464,693	$711,343	$797,877	$1,060,092	$1,212,291	$1,402,540	$1,592,789	$1,973,286
Hanover	$87,838	$106,142	$113,175	$131,391	$141,203	$153,469	$165,734	$190,264
Harrison	$568,743	$775,279	$827,330	$1,020,345	$1,121,643	$1,248,266	$1,374,888	$1,628,133
Hartford	$137,261	$249,052	$301,814	$429,805	$503,130	$594,785	$686,441	$869,752
Hopewell	$61,948	$92,957	$104,799	$133,570	$151,334	$173,540	$195,746	$240,158
Jersey	$206,643	$267,636	$399,337	$403,555	$452,790	$514,333	$575,876	$698,963
Liberty	$88,756	$131,403	$152,924	$203,224	$231,779	$267,471	$303,164	$374,549
Licking	$148,598	$202,974	$229,705	$288,964	$322,990	$365,522	$408,054	$493,118
McKean	$50,084	$71,992	$75,512	$97,273	$97,273	$97,273	$97,273	$97,273
Madison	$125,902	$221,992	$256,488	$399,487	$468,378	$554,492	$640,605	$812,833
Mary Ann	$56,574	$79,808	$98,362	$129,637	$146,873	$168,417	$189,962	$233,050
Monroe	$43,143	$58,576	$63,919	$79,439	$87,950	$98,588	$109,226	$130,503
Newark	$84,804	$103,635	$108,700	$130,791	$142,806	$157,825	$172,845	$202,883
Newton	$95,642	$120,871	$132,739	$156,144	$171,315	$190,278	$209,242	$247,168
Perry	$13,622	$19,865	$23,297	$30,936	$35,298	$40,752	$46,205	$57,112
St. Albans	$135,573	$182,658	$192,111	$244,238	$270,855	$304,125	$337,396	$403,938
Union	$263,965	$317,800	$333,775	$398,264	$432,346	$474,949	$517,551	$602,756
Washington	$109,585	$132,646	$161,100	$199,966	$223,381	$252,650	$281,920	$340,458
Total	$3,126,913	$4,496,817	$5,157,893	$5,948,705	$6,469,725	$7,121,000	$7,772,275	$9,074,826
% increase		7.57%	1.99%	2.22%	2.01%	1.83%	1.68%	8.61%

Specific Streets Levies in Municipalities

While many townships ask voters to approve road and bridge levies, it is uncommon for municipalities to have specific street levies. This is predominantly due to the 10 mills that are already available for operating and establishing capital improvement budgets.

Local Transportation Improvement Program (LTIP) & State Capital Improvements Program (SCIP)

The Ohio Public Works Commission (OPWC), District 17 receives state funds for local road and bridge projects. These funds are competitively selected from applicants in the Delaware, Knox, Licking, Morrow, Fairfield, and Pickaway Counties. These funds are available from state issued bonds. 100% of LTIP funds are used for transportation projects, and historically a portion of SCIP funds are used for transportation related projects. Based on data from 1990-2011 the total amount of OPWC, LTIP and SCIP funds that have been made **available to Licking County is $2,305,104 annually, for about 15 projects.**

Municipal Capital Budgets

Municipalities leverage up to ten mills of real estate taxes for operation of the city. A portion of this is frequently designated into capital improvement budgets.

Community Development Block Grants (CDBG)

Community Development Block Grants funds are available throughout the county for improvements in low and moderate income neighborhoods. The City of Newark is an entitlement area and receives an average of $900,000 per year. The remainder of the county receives approximately $350,000 per year, which includes direct set asides for the cities of Heath and Pataskala. Roughly 50% of this fund will be used for transportation infrastructure. This revenue source is considered flat and is not expected to increase in the foreseeable future.

Fines

Various fines collected throughout the region are available for use as infrastructure improvements. Currently, these collections are low, but in the past the City of Heath collected nearly $400,000 per year for speed and red light cameras. These were removed via referendum of the voters.

TRANSIT FUNDING

Currently, Licking County's Transit is serviced by the Licking County Transit Board (LCTB).The LCTB receives a direct allocation from ODOT of Federal Transit funds to operate their agency. The two types of funding granted to the LCTB is Federal Sac 5307 (Urban Transit Program) and state funding Elderly & Disabled. The participation rate for these funds are 80 percent federal for vehicle purchases and 50 percent federal for operations. The LCTB struggles to find funds to match these sources and use a combination of local general funds, CDBG funds, and various other minimal state matching grants. Often the state E&D is used to match the federal funds that are received for operating a system that provides ½ fare for the elderly or disabled and the Urbanized Transit Program (UTP). Both of these state funding sources are unstable and have been decreasing sharply over the last several years.

With the decrease in state funds to be used as local match the transit agencies must be creative in developing local sources. Pure local revenue funding sources dedicated to transit do not exist within LCATS. Locally, Senior Levy funds, United Way grants and contracts with other agencies have been filling in the shortfall. In the future even more creative funding will be required. Contracts and the use of other federal sources as a match to federal transportation sources will

need to be pursued. In addition, an offering of services to other partners can help generate much needed matching funds. Possibilities include mechanic services, shared storage facilities, vehicle sharing, utilization of private vehicles and mileage vouchers for volunteers, etc. This is an arena where flexibility and coordination must be developed to be successful.

PRESERVATION NEEDS OF THE SYSTEM

Our current transportation system is made up of many components. The most prevalent is the highway system. However, for the system to work efficiently, all the modes need to operate together and be well maintained. The current system includes interstate corridors, a soon to be completed additional 4-lane corridor, many miles of 2-lane roadways, two transit systems, thirty miles of bikeway, and railway connections to other markets. Licking County is fortunate to have this diverse system. One of the critical needs for the continued strength of the system is to maintain the existing infrastructure in an acceptable manner.

Highway System

To maintain our highway system will require the maintenance of two critical components, the roadway surface and the bridge structures. Some infrastructure facts of note for Licking County are: over 4,000 lane miles of roadways, 216 bridges with 1,189,361 Square feet 1,121 culverts over 36" and 5,000+ culverts under 36".

Roadways

Licking County's highway network is vast and includes various levels of access, or functional classes. The following table illustrates the amount of lane miles and cost of roadway resurfacing in Licking County. The table does not necessarily mean that will be the resurfacing cycle, but it does illustrate the limited funding available.

Ownership	2-Lane Centerline Mileage	Multi-Lane Centerline Mileage	Total Lane Mileage	Cost per Lane Mile	Total Cost to Resurface System	Annual Resurfacing Budgets	Resurfacing Cycle in Years
State	198.39	68.21	669.62	$160,000	$107,139,200	$8,230,068	13
County	411.9	0	823.8	$30,000	$24,714,000	$1,200,000	21
Township	726.35	0	1452.7	$75,000	$108,952,500	$6,361,018	17
Municipal	726.15	22.2	1541.1	$75,000	$115,582,500	$7,025,600	16

Notes: ODOT assume $160,000 as average between General & Primary Systems resurfacing cost
County Engineer 1" overlays at $30,000 per lane mile, also used 2016 resurfacing budget
Townships assumed 60% of Road and Bridge Levies, State Gas Tax & Vehicle Registration fees used for resurfacings at $75,000 for 2" overlay
Municipal assumed 95% of License Plate revenues, State Fuel taxes and LCATS STP funding allocation

66.5% of OPWCs Licking County average accumulation + 30% local match

The predictions for funding is currently that life cycles will need to reach 20 years on many low and medium volume segments of roadways, which exceeds the recommended 12-year cycle. Recycling of roadways may become a viable option as well as cold asphalt placement technologies that also reduce environmental impacts. Below are two graphs from the Licking County Engineers Office showing cost per mile of two lane resurfacing and Chip Seal.

CHIP SEAL COST/MILE

Develop cost effective resurfacing solutions

Chip Seal is a cost efficient way to reduce the cost of resurfacing while still maintaining a hard surface roadway. Chip Seal can help build pavement base, improve drainage in advance of typical resurfacing. On the contrast, it does not provide as smooth of a ride as resurfacing.

With the ever-increasing costs to resurface roadways, the cost to resurface all roadways will become a significant need in the future. In general, resurfacing of roadways has a historical life cycle of 12 years. This will vary greatly depending on several factors. Minor roadways with less traffic that have a full pavement design, such as recently constructed subdivision streets may well last beyond 12 years with minimal work. High truck volume roadways or those with poor drainage or construction may not reach the life expectancy. Further factors affecting the cost of the roadway are:

- Cross section and roadway features
- How wide is the pavement surface
- Are there curbs that need addressed to maintain drainage
- Will the guardrail height become an issue with added pavement thickness
- Are there water valves, manholes, etc. that must to be raised or adjusted
- How thick is the proposed resurfacing
- Are there pavement repairs that must be made prior to resurfacing
- Do traffic signal loops need to be reestablished
- Will mailboxes need replaced to meet safety criteria
- Are there drainage considerations
- Do sidewalk curb ramps need upgraded or replaced
- What type of pavement marking/striping is needed or not needed

These and other factors impact the cost of the roadway project. For long term planning consideration, several estimates were used. In general a cost of $80,000 per lane mile, based on $160,000 per centerline mile of a 2-lane roadway section was used. This value is based on ODOT's typical resurfacing costs for a 3" mill and fills on 2-lane rural roadways. The county engineer's office uses 1" overlays and that is $20,000 per lane mile and ODOT uses $120,000 for general system and $160,000 for primary.

In the future as funds become more restricted the life cycle will need to extend well beyond the typical 12 years, as shown in the table above. This is one of the reasons why more cost efficient resurfacing products and processes must be developed. Lower functional classified roadways may not be resurfaced for extended periods of time. Many township roads and lower volume municipal and county roads, as well as a few state routes will likely revert to less expensive surfaces, such as chip 'n seal. Changes and improvements in the industry and the use of new materials may make achieving these life cycles possible. In order to demonstrate the fiscal constraint, the following assumptions had to be made due to the impact of inflation on construction projects:

All this illustrates the limited funding available. These assumptions do not change who has control over individual funding sources, but reveals the likelihood that our roadway conditions are likely to decrease. Township roadways and municipal streets were decreased because many of their roadways are narrower and smaller. While larger roadways in municipalities are costly, many of the neighborhood streets and lower classification side roads are less expensive. In addition, these smaller roadways may only require 1½" to 2", and the estimates were based on 3" resurfacing projects.

While, this will not produce an accurate estimate for a specific roadway, on the whole, it should be a valid estimate for long term and broad basis estimates. In general, more urban sections of roadway that are wider will be more costly than narrower low volume township roadways.

Bridges

Even with a well-maintained roadway surface, if travelers cannot navigate across streams and rivers, the roadway network value is greatly decreased. Licking County's bridges are in various conditions and a variety of sizes.

With the ever-increasing costs in construction, bridge replacement costs will become a significant factor in the coming years. Typically, bridges have a design life of fifty years, but this can vary greatly depending on the individual structure. The most measurable cost driver for bridges is square foot of deck area. Many other items also impact the replacement costs. Some of these considerations are:

- Does the new structure need to be larger
- Can portions of the existing structure still be used, such as abutments
- Material types, steel or concrete
- Are sidewalks needed
- Are utilities mounted to the bridge
- What is the height, or clearance, required
- Can a less expensive alternative be utilized
- What type of Maintenance of Traffic will be required
- What is the subgrade, will piling be necessary
- Are there special stream mitigation requirements
- Removal of existing structure

The majority of the larger bridges in Licking County are under ODOT's jurisdiction, which insinuates that the majority of funds for bridges will be utilized on state routes. These and other factors impact the cost of rehabilitating and replacing bridges. For long range planning and budgeting purposes, $140 per square foot was utilized. This is based on the Licking County Engineer's office 2015 standard bridge reconstruction planning rate. The estimate includes both removal and replacement of single span structures and typical ancillary items.

While, this will not produce an accurate estimate for a specific bridge, it should be a valid estimate for typical bridge replacements in Licking County. Actual costs will vary by structure and surrounding conditions.

2016	Number of Bridges	Deck Area Sq.Ft.	Ave. $/Yr
State (ODOT)	218	1,158,742	$3,244,476.56
County Engineer's Office	444	459,700	$1,287,159.06
Cities	60	163,633	$458,172.40
Total	722	1,782,074	$4,989,808.02

Within the Licking County Engineer's Office is responsible for 443 bridges. The 444 bridges are made up of 238 bridges on County Road system and the 206 bridges on the Township Road system.

Within the 60 Cities bridges the City of Newark is responsible for 43 bridges, the City of Heath is responsible for 5 bridges and the City of Pataskala is responsible for 12 bridges.

Bicycle and Pedestrian Network

Bicycle and Pedestrian networks generally fall into two categories, either publicly or privately maintained. Bicycle Paths are generally publicly maintained and sidewalks are predominantly privately maintained.

During resurfacing projects, local governments frequently upgrade curb ramps and crossings at street intersections. Occasionally, sidewalks will be replaced as well. These costs are included in the overall costs of resurfacing projects as outlined above. Individuals and developers are responsible for constructing and maintaining sidewalks in from of their homes and business in most cases. This is most often enforced by a property maintenance code. Sidewalks are often required to be constructed in new subdivisions and commercial developments at the initial time of construction by the developer as part of development regulations at either the municipal or county level.

Bicycle path maintenance is considered a public responsibility and is an expectation of the users to be addressed by government, much as roadways. There are far less appurtences on bicycle paths than on roadways and therefore the cost is significantly less to resurface.

From an estimating perspective, the cost will likely be equivalent to the cubic yards of asphalt placed and some minor additional work for maintenance of traffic, mobilization, striping, and other minor items. For this purpose, the maintenance cost was calculated by assuming a 10-foot width, 2-inch thickness of asphalt plus an additional 15 percent for incidentals. The 2011 bid cost of a cubic yard of asphalt in place is an average of $105 for representative size projects. This equates to a maintenance cost of $39,355 per mile for bike paths. In addition, the life cycle of bicycle paths will be greater than roadways due to the lighter weight vehicles. Furthermore, many of the paths were built on old railroad base or with properly designed drainage and base materials. Bicycle paths can be expected to last an average of 15 years between resurfacing cycles.

With a life cycle of 15 years, and ~60 miles of paths, the annual funds required to maintain the existing system is $173,914. Again, costs were adjusted for anticipated inflation. Below is the annual predicted cost to maintain the existing path system.

	2013-2020	2021-2025	2026-2030	2031-2035	2036-2040
Inflation Rate	1.052	1.127	1.127	1.182	1.238
Annual Bicycle Pedestrian Path Preservation Costs	$173,914	$175,874	$177,856	$179,958	$182,185

Rail System

While our rail system does not include Class I rail lines, it does connect to two class I carriers and has had a major upgrade in 2009 of nearly 7 million dollars. The long term lease of the state owned Panhandle line should secure the future of this valuable asset. In addition, the state control allows for open access, creating a competitive edge for manufacturers seeking rail service to the area.

Transit System

Key items in funding a transit system include capital and operating expenses. Capital includes vehicles and facilities. Capital assets also need to be maintained. The cost of maintenance is also a significant expense. Due to routine maintenance and care, many of their vehicles have exhibited extended service life. This practice needs to continue and funds expended to maintain a vehicle replacement schedule.

Another need is to maintain and operate their vehicles efficiently. Operation costs include fuel, drivers, and staff. In order to have the best possible system will require coordination of other entities, including non-profit providers and other government partners, such as Board of Developmental Disabilities and Job and Family Services. The main goal is to provide the best service for the least cost, both to the user and the public entity. LCATS recognizes the need to have a current and efficient fleet of vehicles to meet the needs of the aging and less mobile population.

INNOVATIVE FUNDING OPPORTUNITIES

With the constant burden of an ever-aging transportation infrastructure and the imploding force of inflation, the current funding mechanisms will not meet the growing demand. What will be needed is a combination of new ways to generate funds in addition to the traditional funding sources. The nation's economy hangs in the balance of maintaining a transportation system that can handle the increasing needs being placed on the system.

While federal revenue streams may change as a result of a new federal transportation bill, it is obvious that innovative funding sources will become a more prominent part of funding packages, especially for large projects. Local authorities and public private partnerships will drive many of these funding mechanisms.

Tax Increment Financing Districts

Tax Increment Financing (TIF) Districts will become more prevalent and used to offset the burdens of new businesses on the infrastructure systems. This does not mean that the new business is void from making on site improvements; it means that offsite improvements will be made upfront and paid for with future funds as a result of increased tax revenues. This creates a win-win scenario for both businesses and local governments. The businesses are more likely to locate in an area with a solid infrastructure network. The government body is now able to make needed improvements and have a source of designated funds to be reimbursed. There is now no need to wait till it is horrible to fix it mentality can end. Several TIF's are already in place in Licking County and the City of Newark, many other locations have been discussed as industry moves in to the region.

Joint Economic Development Zone (JEDZ)

A Joint Economic Development Zone (JEDZ) is used in unincorporated areas that do not have a income tax. Specific zones are defined as a JEDZ location. Often a location that is being used for industrial, commercial, or manufacturing are frequent locations. An agreement is put into place that allows for a different governing body, typically a city, to collect income taxes from workers' paychecks on behalf of the lower jurisdiction. The 'collecting' agency receives a share of the collections in return for processing the collections. Currently, Etna Township has a JEDZ and the City of Newark is the partnering city. Other locations are being discussed as development continues.

State Infrastructure Bank

The State Infrastructure Bank (SIB) offers another source of possible innovative financing for transportation projects, particularly those that will spur economic benefit. In essence the State of Ohio operates a revolving loan fund that can be leveraged for large projects and paid back over time. It is possible that SIB monies could be leveraged for projects such as Cherry Valley interchange or Thornwood Drive improvements.

TIGER Discretionary Grants

The Transportation Investment Generating Economic Recovery (TIGER) program enables the

federal DOT to use a rigorous process to select road, rail, transit and port projects that promise to achieve critical national objectives. Projects are selected based on their ability to contribute to long-term economic competitiveness, improve condition of facilities, improve energy efficiency, reduce greenhouse gas emissions, improve safety, and improve quality of life to communities. This is a nationally competitive program.

TIFIA (Transportation Infrastructure Finance and Innovation Act)

This program provides credit assistance to large scale projects (over 50 million) for projects of regional or national significance that might not otherwise be delayed or not constructed because of risk, complexity or cost. Three forms of credit assistance is available- secured loans, loan guarantees, and standby letters of credit. The interest rate for TIFIA loans is the US Treasury rate and the debt must be repaid within 35 years.

Projects of National or Regional Significance

This program was created to provide grant funds for high-cost (greater than $500 million) projects of national or regional significance. Projects eligible for funding include and surface transportation project including rail projects. The federal share for this program is 80% of the total project cost.

Vehicle Miles Traveled Fees

Vehicle Miles Traveled (VMT) fees are a new concept, but being tested across the country. This fee structure could be used either in addition to or replace gas tax. In Oregon, during a test case study, users paid a monthly bill based on the miles they traveled the previous month. Technology would allow for this different, but fairer user based system. This is a long-term solution, and short-term solutions are still needed to meet the needs of the system.

Tolling

Across the country regions are moving to a toll system requirement for any new expansion project. In essence if an entity is interested in building a new roadway/freeway to provide access to a currently underdeveloped area, it is being built as a toll facility. The tolls collected are then used to repay the bonds sold for the construction. This may also work in areas were added lanes to an existing facility are only used by those willing to pay a toll. With the increase in technology, this may be possible with minimal overhead costs to operate the toll system by using EZ Pass technologies.

Congestion Fees

Congestion fees are another new system that works based on supply and demand. Just as private parking providers charge different rates based on the demand, the same principal could be applied to lane usage of highways or passenger space on transit. These new or increases in tolls or transit fees would serve to disperse peak travel times. It may also increase carpooling in an effort to share the cost of premier lane use.

Tax on Vehicle Sales

Either a portion of the current sales tax collected on vehicles or an additional tax could be dedicated to transportation infrastructure purposes.

Other Taxable Sources

There are several other taxable sources that could be allocated to transportation. Freight feed could be imposed and directed to transportation. The possibility of taxing replacement fuels to match the gasoline tax may be a source of revenue. Customs duties currently are not made available to transportation. Perhaps a ticket tax on air, water, rail and transit passenger trips would support shortfalls.

Gas Tax Indexing

One potential solution to increasing gas taxes would be to index the amount of gas tax collected. This could be indexed to the total cost, similar to a sales tax model. Another option of indexing would be to tie the increase annually to the Consumer Price Index (CPI.) Either way this allow for a gradual increase in revenues collected overtime.

Hydraulic Fracturing

Much of eastern Ohio, including Licking County is on the edge of a energy boom in the form of hydraulic fracking operations. While this provides a great opportunity for energy production, it also poses significant challenges. The roadway networks that will serve these sites are not equipped to handle the constant water hauling operations necessary for the extraction operation. These impacts must be quantified and addressed as part of a permitting or approval process either at the state or local level. This activity will either be a benefit or a downfall to our roadway network. In order to assure that our roadways are not degraded from this activity local roadway agreements are being developed to assure that all parties are protected. Various formats are under development by ODOT, County Engineer and others.

Revolving Loan Fund

A Revolving Loan Fund supports local independent businesses. It provides small business loans to producers of goods and services and provides initial loans for startup costs and expansion. Some of these funds may potentially be used for improvements at entrances to facilities that are being built or expanded.

SID

A Special Improvement District (SID) can deliver supplemental services such as sanitation, maintenance, public safety and visitor services, marketing and promotional programs, capital improvements, and beautification in a designated area. Generally, SID's are paid for via a special assessment paid by property owners within a special district. One potential use of funds such as this could be a downtown district that collected and distributed funds for sidewalk and lighting upgrades, or other similar enhancement oriented type of projects. The assessment district may be a specific area or an entire village. An assessment is determined for each parcel in the district based on the share of benefit to be derived. Assessments may be made by property owners up front in cash or financed through the issuance of bonds, allowing for contracts to be sold and paid for work completed.

While adding new taxes or increasing taxes are not appreciated by consumers, the backbone of the country's economic prowess relies on an efficient and safe transportation system.

FUTURE OF TRANSPORTATION FUNDING

Transportation funding in the future is at a crossroads. The Highway Trust Fund that was used to build the interstate system and has long been a major source of transportation funding, but the fuel tax used to develop the Highway Trust Fund has been decreasing since 1995 and has operated as insolvent since.

As a requirement of the past SAFETEA-LU, The National Surface Transportation Policy and Revenue Study Commission was formed and they have completed a report that includes various strategies to meet the changing needs of the United States Transportation System. Members of the commission are made of federal, state, Local, MPO, public interest experts, and transportation industry leaders. The commission was created because "it is in the national interest to preserve and enhance the surface transportation system to meet the needs of the United States for the 21st century."
Some of the funding highlights of the commission report include:

- Increasing investment commitment significantly, recognizing that national transportation is a national problem that affects our economic prowess.
- Developed strategies for short-term, interim and long-term financing strategies
- Short-term includes finding funds from various sources to meet the FY 2009 shortfall
- Interim recommendations include increased motor fuel taxes, freight fees, customs duties, and ticket taxes. Also included are tolling for new capacity on the interstate, congestion pricing for interstate and develop private partnerships.
- Long-term solutions include a transition to VMT Tax, and replacement fuels taxation.

The challenge to implementing these or any other changes to funding mechanisms include the willingness to make changes and look to the future.

Some other considerations that will help utilize our funds more efficiently include:

80/20 Rule

In the current federal transportation world, projects are required to be designed and built to meet traffic predictions 20 years into the future. These are estimates and many factors can affect the accuracy of these estimates. In addition, many projects are exceedingly expensive to attain this level of 'comfort'. There are frequently smaller projects that will address 80% of the problem, for 20% of the cost. Identifying these smaller 'footprint' projects should be encouraged. In addition to decreasing costs, it also decreases impacts to the surrounding communities while offering an improved transportation system. In order for this to be put into action would require acknowledging that incremental improvements are an appropriate use of federal funds.

Removal of 'Stovepipe' Bias

In the current federal transportation world, available funding is by very specific project and is inflexible as to using the funds in the most efficient and needed way. This leads to projects being constructed that are needed, but not the highest regional or national priority. With the removal of the 'stovepipe' bias at the federal level, projects could be completed more efficiently and funds could be used to meet the most critical needs.

Build to Completion

Another needed change at the federal level is a commitment to build to completion. Often projects are allocated a specific amount of funding and when the funding is exhausted the next phase of the project is not completed. This has led to corridors across the country that is near completion, but not complete. This poor practice has led to increased costs because as portions are completed, developers buy up the remaining land either as speculation or to develop. Either way the future cost to acquire this property is significantly higher or becomes a 'show-stopper' for completing the corridor. If a build to completion commitment is adopted, whole corridors will be finished, cost less and serve their purpose of connecting various markets or states or regions together.

PROJECT LISTINGS

In compliance with the FAST Act, and from guidance received from the Federal Department of Transportation, all projects contained in long range transportation plans must be fiscally constrained. LCATS has made every effort to determine project costs from a variety of sources, predict revenue sources and account for inflation.

The following project lists and maps illustrate those projects that are predicted to be fiscally constrained. The last section also includes a listing of projects that are important to the region, but do not have funds readily identifiable.

As a result of public participation, LCATS staff input, and considerations of local elected officials, the following project lists was developed.

PROJECTS FUNDED FROM TRADITIONAL SOURCES

LCATS FEDERAL FUNDED PROJECTS

The LCATS Technical Advisory Committee (TAC) and Policy Committee developed a recommended project list for 2016-2040 that utilizes LCATS funding. Project costs were submitted in current dollars and inflated to the midpoint of the planning horizon.

The LCATS funded projects have specific locations identified, however, as projects move from the long range plan to the Transportation Improvement Program (TIP) for funding they may vary slightly. No capacity projects will change significantly, therefore keeping the air quality considerations consistent.

Projects funded with LCATS funds will also require the use of local revenue sources to meet any cost overruns, match requirements and frequently engineering and right of way costs. These funds will come from a variety of sources, most of which are outlined in local and other funding sources, under revenue available funding resources.

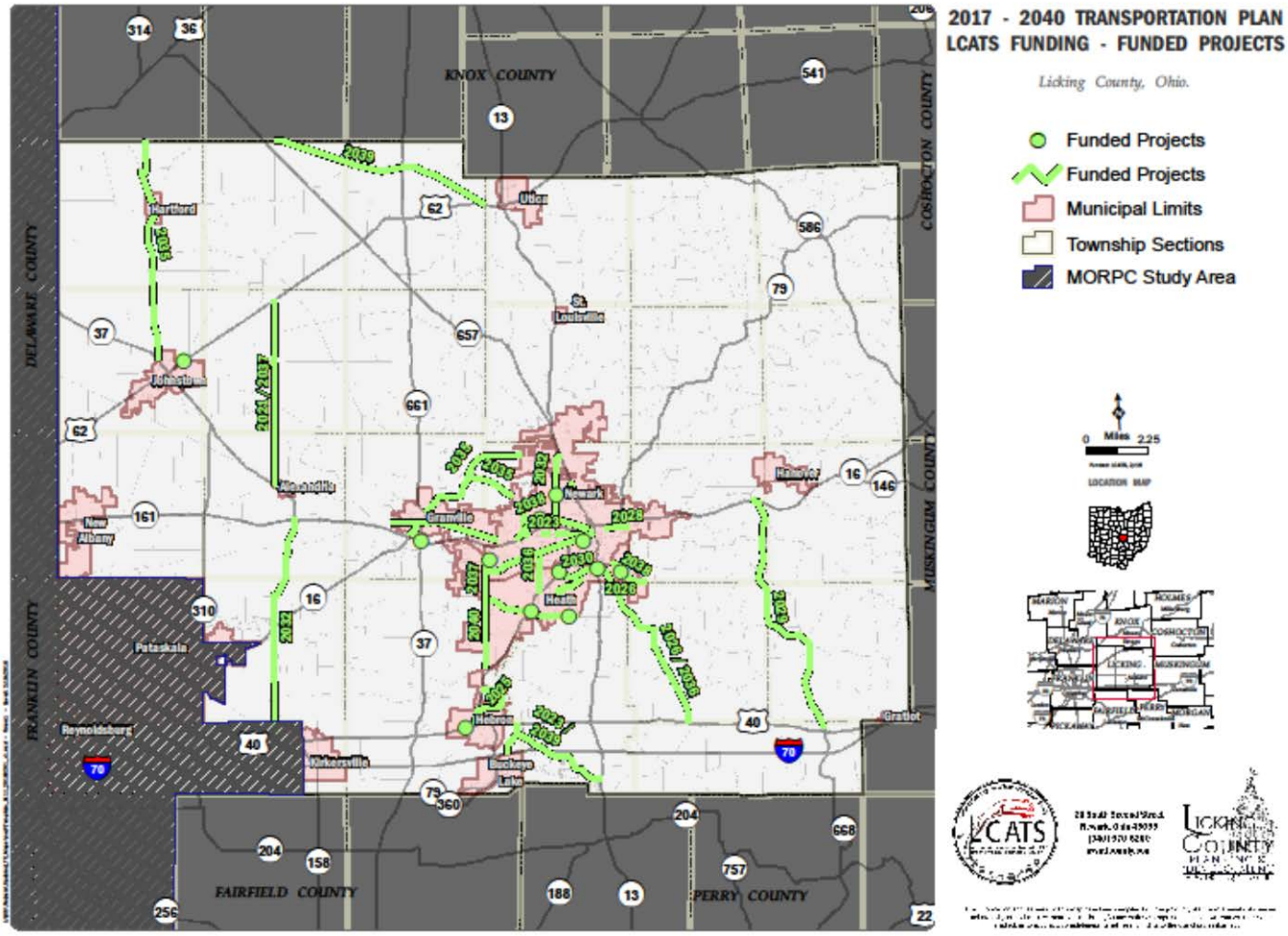
Highway funding dollars are made available to LCATS in the form of Surface Transportation Funds (STP) and Congestion Mitigation Air Quality (CMAQ) funds based on urbanized area population. The highways eligible for STP funding include those highways defined as Federal-Aid Routes. Additionally, STP funds are flexible and allow funds to be used for other modal projects, such as capital transit projects, carpool projects, traffic monitoring, and bicycle/pedestrian trails.

Congestion Mitigation Air Quality (CMAQ) funds are less flexible and funding is directed towards transportation projects in areas designated as non-attainment or maintenance for air quality. (Licking County currently is designated as maintenance for air quality area.) Projects and programs are only eligible for CMAQ funds if they can document that they will improve air quality and reduce congestion. CMAQ funds can also be used for other non-highway projects if they can

demonstrate congestion reduction and air quality improvements. Common projects of this nature may include transit support, bicycle and pedestrian facilities, and travel demand programs, such as ride sharing or van pooling operation and promotion.

TRANSIT PROJECTS

LCATS also developed a consolidated funding list for the Federal Transit Administration's 5307 funds. The list developed includes an opportunity to advance the transit system by potentially offering increased services or reduced fares. The long range goal will also include offering fixed or flex routes that meet the needs of the public.



Outlines of projects that are being considered for inclusion in the upcoming LCATS TIP for State Fiscal year 2017-19 are listed below for use of Transit 5307 funds.

2017-19 TIP Transit Projects - Accepted Beginning of 2017-40 Transportation Plan	
2017	
Bus Replcement	$136,000
Operating Assitance	$2,837,418
Preventative Maintenance	$400,000
2018	
Bus Replcement	$121,000
Operating Assitance	$2,937,418
Preventative Maintenance	$400,000
2019	
Bus Replcement	$121,000
Operating Assitance	$2,937,418

Projects that have already been included in the current LCATS Transportation Improvement Program (TIP) are shown below for STP and CMAQ, followed by a project listing for FY 2020-40 utilizing funds that are determined locally.

2017-19 TIP Highway Projects - Accepted Beginning of 2017-40 Transportation Plan		
2017		
Newark - Cherry Valley Rd Bridge	STP	$200,000
Newark-21st St Resurfacing from Granville to SR13 (Mt. Vernon Rd)	STP	$1,000,000
Hebron - North High St sidewalk project	STP	$8,000
Was 89501 Resurface Hopewell and add turn lane & signal at Licking view	STP	$323,000
Linnville Rd Turnlane	STP	$24,000
Newark - Widen Exit Ramp SR16EB to Church St to 2 Lanes	CMAQ	$400,000
2018		
Newark - Bridge deck and repairs Ohio and Manning	STP	$1,300,000
Johnstown - US62 Turnlane	CMAQ	$800,000
2019		
Newark - Cherry Valley Rd Bridge	STP	$1,999,999
Granville - Resurfacing of Cedar St. & Welsh Hills Rd	STP	$175,859
Heath-Linnville Rd Resurface & Realignment @ SR13	STP	$511,811
Hebron - North High St sidewalk project	CMAQ	$654,545

OTHER FEDERALLY FUNDED PROJECTS

The majority of federal funds that are available to the area are controlled by ODOT or reallocated to other agencies to determine the funding recipients. The County Engineers Association of Ohio (CEAO) receives federal funds from ODOT to disburse to all 88 county engineers. These funds are included under ODOT funded also, since they are not decided locally at LCATS. The majority of the funds are either district 5 allocations for preservation of pavements and bridges or funds controlled by central office for various other efforts or programs. A listing of the various types of funds controlled by ODOT is listed in the section entitled Available Funding Sources.

ODOT and LCATS recognize that the highest priority is to preserve our existing network; therefore the initial funding shows an allowance for preservation of pavements and bridges. This is based on estimates of needs from District 5, inflated by the adopted inflation factors included in ODOT's Business Plan. The list also includes specific large scale projects. This list is based on priorities such as condition, congestion, and economic vitality of the region. The last items on the list are for recurring type projects. These can be considered 'line items' in the project list. Specific projects that have already been identified for funding from ODOT sources have been listed separately.

From 2016-2021, ODOT District 5 anticipates:

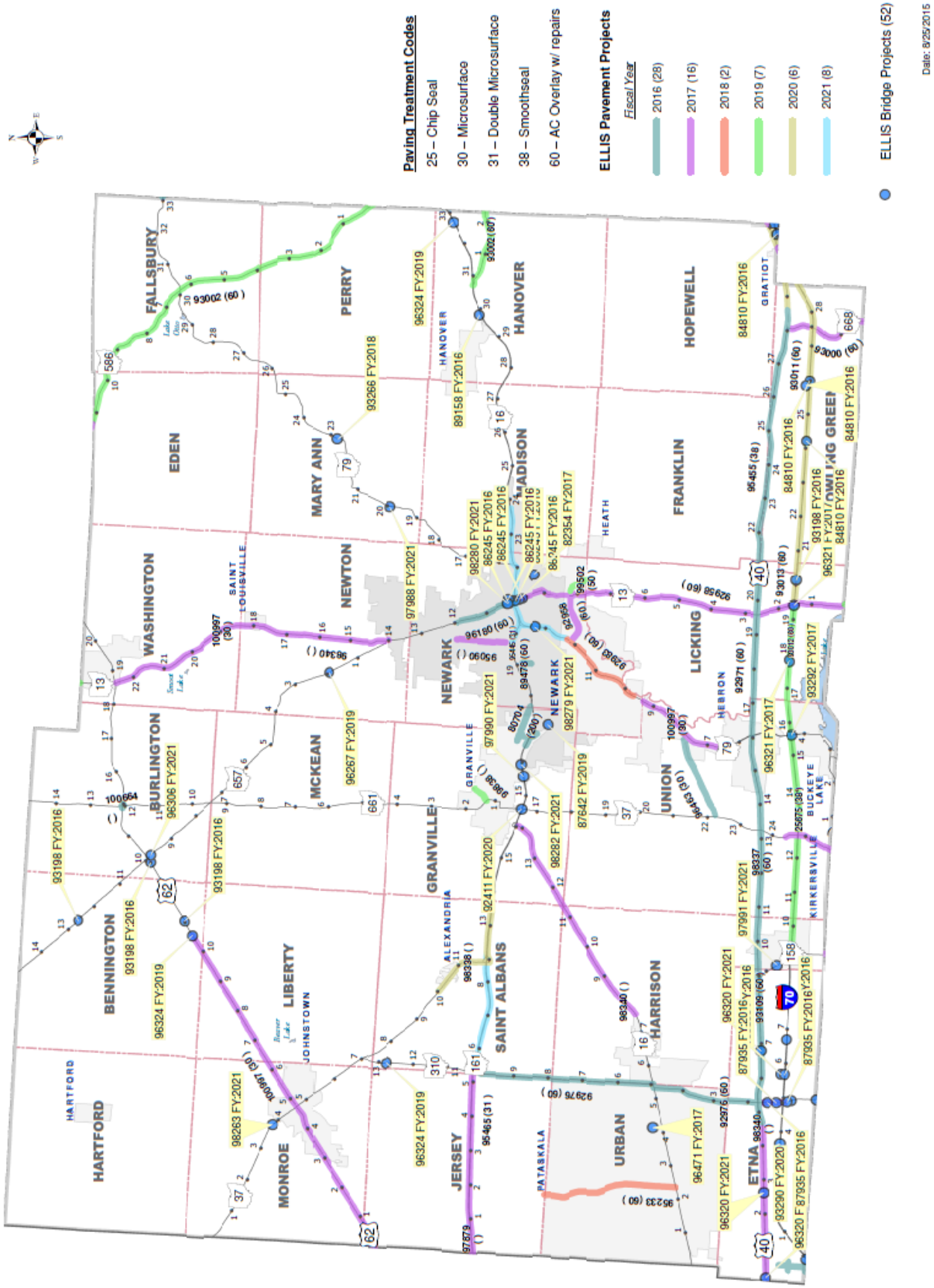
$8,230,086 per year on average for pavement preservation
$2,347,551 per year on average for bridge rehabilitation and replacement
$10,577,637 per year on average for district preservation projects

Other programs also include preservation activities such as the CEAO pavement and bridge program, municipal bridge rehabilitation and replacement. Other frequent funds used in our region are safety funds. For the purposes of assuring fiscal constraint 'line items' were added to include these types of projects. The following was assumed in calculating the amount of funds received to the area. All costs were then increased by 5% per year for construction inflation.

½ million every 3 years from Municipal Bridge Program
1 million every 2 years from CEAO Pavement and Bridge funds
1 million every 2 years from Safety Program
½ million every 3 years for miscellaneous smaller programs

There is a predicted $ 661,186,308 available in Non-LCATS federal funds for Licking County from 2012-2035. The list below illustrates the use of $ 658,537,787, expending 99.6% of the available funds expected to be available to the area.

LICKING COUNTY
Work Plan 2016-2021



Planning Horizon: 2021-2025				
Project	**Phase**	**$ Amount**	**Project Description**	**State FY**
FAI/LIC-70-1.27/0.00, FAI/LIC-70 Widening	R/W	2,000,000	Right-of-way funds for capacity additions on IR 70 from SR 256 to Canal Road	2021
FAI/LIC-70-1.27/0.00, FAI/LIC-70 Widening	CO	100,000,000	Construction funds for capacity additions on IR 70 from SR 256 to Canal Road, was $126.3 million, use tolls & Value Eng'r to reduce to	2022
ODOT Pavement Preservation Projects - 5 Years	CO	57,902,789	Maintenance and operations, Preservation Projects	Varies
ODOT Bridge Preservation Projects - 5 Years	CO	16,516,198	Maintenance and operations, Preservation Projects	Varies
Municipal Bridge Preservation - 5 Years	CO	1,407,100	Maintenance and operations, Preservation Projects	Varies
CEAO Bridge & Pavement Preservation - 5 Years	CO	5,628,402	Maintenance and operations, Preservation Projects	Varies
Safety Projects - 5 Years	CO	5,628,402	Identified Safety locations & improvements	Varies
Misc. Projects - 5 Years	CO	1,407,100	Misc projects & planning	Varies
Planning Horizon: 2026-2030				
Project	**Phase**	**$ Amount**	**Project Description**	**State FY**
ODOT Pavement Preservation Projects - 5 Years	CO	73,900,263	Maintenance and operations, Preservation Projects	Varies
ODOT Bridge Preservation Projects - 5 Years	CO	21,079,319	Maintenance and operations, Preservation Projects	Varies
Municipal Bridge Preservation - 5 Years	CO	1,795,856	Maintenance and operations, Preservation Projects	Varies
CEAO Bridge & Pavement Preservation - 5 Years	CO	7,183,425	Maintenance and operations, Preservation Projects	Varies
Safety Projects - 5 Years	CO	7,183,425	Identified Safety locations & improvements	Varies
Misc. Projects - 5 Years	CO	1,795,856	Misc projects & planning	Varies
Planning Horizon: 2031-2035				
Project	**Phase**	**$ Amount**	**Project Description**	**State FY**
ODOT Pavement Preservation Projects - 5 Years	CO	94,317,543	Maintenance and operations, Preservation Projects	Varies
ODOT Bridge Preservation Projects - 5 Years	CO	26,903,147	Maintenance and operations, Preservation Projects	Varies
Municipal Bridge Preservation - 5 Years	CO	2,292,018	Maintenance and operations, Preservation Projects	Varies
CEAO Bridge & Pavement Preservation - 5 Years	CO	9,168,073	Maintenance and operations, Preservation Projects	Varies
Safety Projects - 5 Years	CO	9,168,073	Identified Safety locations & improvements	Varies
Misc. Projects - 5 Years	CO	2,292,018	Misc projects & planning	Varies
Total Non-LCATS Federal Allocated		658,537,787		
Total Non-LCATS Federal Available		661,186,308		

REGIONALLY SIGNIFICANT UNFUNDED PROJECTS

NON- TRADITIONAL FUNDING

As the development of innovative financing progresses, more funds will become available. Another driving force for future funding is economically driven projects. TIF's and JEDZ's are becoming more prevalent. Currently, there are several areas in multiple jurisdictions throughout the county being investigated as potential locations. The Thornwood Drive Corridor, Cherry Valley Interchange, Central Parkway Extension in Heath, areas in the north end of Newark that are redeveloping, and the large manufacturing and warehousing acreage in the southwest portion of the county are all top candidates.

Fundamental changes in how transportation taxes are levied at the federal level and a movement to 'build thru completion' should help direct funds to needed corridors.

Many of the projects below may use non-traditional or traditional funding sources.

PARK and RIDE LOTS

Park and Ride Lots encourage car and vanpooling and reduce the number of vehicles on the major arterials. Two areas have been defined as possible sites for park and ride lots within Licking County. Other sites will be reviewed on an as needed basis. Locations along or near the high volume commuter routes of IR 70, SR 161/16/37 corridor, and the SR 16 roadways would be ideal locations. Other corridors near population centers are also viable considerations.

BICYCLE/PEDESTRIAN TRAILS

Bicycle and Pedestrian trails provide an alternative method of transportation thus cutting down on gas emissions and pollutants from automobiles. Trails also offer an alternative transportation system particularly helpful to young children and others with no access to private vehicles to travel safely to educational, recreational, shopping, and employment facilities and other destinations. Connecting existing trails and offering access to places of employment, education and recreation are desirable. Some of the key missing links are:

- Heath to Newark paths
- Licking County paths to the New Albany paths
- Downtown Newark to north east Newark
- Connection between New Albany and Johnstown trail system
- The central Licking County system to southwest Licking County (Pataskala area)

STATE ROUTE 37 CONGESTION AND SAFETY UPGRADE

State Route 37 is one of the main corridors that connect IR 70 to the SR 161/16 corridor. This roadway is currently relatively open and most of the structures are not encroaching on the roadway. The alignment is relatively straight with some vertical curves. There are interchanges at both IR 70 and SR 16, leading to a natural major north-south connector. This roadway should be upgraded to a 'Super 2' highway with appropriate turn lanes at intersections and some sight distance improvements.

SAFETY AND CONGESTED LOCATIONS

As shown in the travel demand forecast model runs there is a significant increase in total vehicle miles traveled being predicted for Licking County. Many of the congested locations are likely to become safety concerns as well. Potential candidates include, but are not limited to:

- Additional Safety projects between the Village of Hebron and Oberlin Drive in Heath on State Route 79
- 21st Street in the City of Newark
- Sharon Valley & King Road, and nearby Sharon Valley & Country Club intersection

ADDITIONAL ROADWAY CONNECTIONS

Several roadway connections have been identified as desired to help with flow of traffic and to help alleviate congestion. These include:

- Extending Integrity Drive to US 40 in Hebron
- Extending Canyon Drive to US40 in Hebron
- Central Parkway Extension in Heath
- Baker Blvd extension to King Rd in Newark
- Evans Blvd extension to Baker Blvd in Newark

Project Applications to LCATS That Did Not Receive Funding

LCATS Unfunded 2017-40 Transportation Plan Projects

Request Year	Project Description	Phase	STP	Local Match STP	Project Total
2030	Newark - 21st St Resurfacing Granville - Deo to Mount Vernon	Construction	$1,200,000	$300,000	$1,500,000
2031	Heath - Mill & fill 5% repairs Blue Jay Rd	Construction	$841,068	$210,267	$1,051,335
2031	LC Engineer - Resurface Brownsville Rd 0-9.82	Construction	$1,660,418	$415,105	$2,075,523
2032	LC Engineer - Price Rd 0-1.27, Welsh Hills 0-2.72, Sharon Valley 0-1.79	Construction	$1,067,370	$266,843	$1,334,213
2033	LC Engineer - Resurface York Rd 1.77-10.15	Construction	$1,482,005	$370,501	$1,852,506
2034	LC Engineer - Croton Rd	Construction	$1,268,108	$317,027	$1,585,135
2035	LC Engineer - Resurface Homer Rd 0-8.43	Construction	$1,554,331	$388,583	$1,942,914
2036	LC Engineer - Resurface North Ridge Rd 0.00-6.70	Construction	$1,270,831	$317,708	$1,588,539
2037	Heath - Mill & fill 5% repairs Licking View Dr	Construction	$1,132,688	$283,172	$1,415,860
2037	LC Engineer - Mill Dam/CristlandHills Rds .78-1.21/0-3.71	Construction	$966,881	$241,720	$1,208,601
2038	Granville - Mill & Fill 2 1/2" W & E Broadway & Newark-Granville Rd	Construction	$1,146,000	$286,500	$1,432,500
2038	LC Engineer - Linnville Rd 2.22-8.49 Resurfacing	Construction	$1,238,417	$309,604	$1,548,021
2039	LC Engineer - Resurface Brownsville Rd 0-9.82	Construction	$1,958,441	$489,610	$2,448,051
2040	LC Engineer - Price Rd 0-1.27, Welsh Hills 0-2.72, Sharon Valley 0-1.79	Construction	$1,254,746	$313,687	$1,568,433
	Project Summary Cost	Total	$18,041,304	$4,510,326	$22,551,630

Unfunded Projects that are Needed in Licking County

- Heath Newark Licking County Port Authority (HNLCPA) Runway Extension to 5000 feet. The Port Authority has on a number of occasions discussed the possibility of extending their runway to 5000 feet to allow small commercial passenger & freight jets to take off and land there. Using the Florida Department of Transportation, Division of Aviation's planning costs and the Federal Aviation Administrations' Table 3-2 Runway Design Standards as a basis for developing the planning level cost for the runway alternatives below. In every planning level

cost estimate below the rail road relocation, runway and taxiway cost are the largest cost associated with the project. (See appendix Miscellaneous Information & References.)

  - Extending the current runway, without upgrading to current design standard for the runway and taxiway width would be $14,793,200. This includes the purchase of five commercial structures, six residential structures, and 206 acres, realignment of 1 – 1.2 miles of rail road and realignment of 0.8 – 1.0 mile of roadways (Heath Road & Irving Wick Road).
  - If due to the use of federal funds the port authority will have to widen both the runway to 100 feet wide and the taxiway to 75 feet wide including the property, road and rail road realignment the cost would be $21,563,200.
  - If due to topography, development or other red flag issues a complete relocation of the Port Authority airport would be needed the cost would be $30,795,200.
  - This analysis would be extremely complex and require an FAA & ODOT prequalified consultant to do the planning and design for such a project. It would also be necessary to secure outside funding to make a project of this magnitude possible.
  - The planning and design cost for a project can generally be figured as 15% of the construction cost. Using that for a basis the planning and design cost would range from $2.2 to $4.6 million.
- Passenger Rail first from Newark area to Columbus then connectivity from Newark area to Zanesville. From 1889 to 1929 Newark was connected to Granville, Buckeye Lake, Zanesville and Columbus by an interurban line. Numerous time since then studies have been done to try to get some version of passenger rail to reconnect Newark to Columbus and Zanesville. The last in-depth analysis said that due to conditions of the tracks that the project would not be feasible due to the cost of having to upgrade the tracks from the current 25 Miles per Hour (MPH) speed to a 55 MPH speed. Recently this assumption has been brought into question. Would it be possible to start out with a 25 MPH passenger rail and upgrade the track in sections over time? A new feasibility analysis would be needed under this new assumption.
- Getting employees from the Newark, Heath & Granville area to new and growing employers in western Licking County. Currently there are several thousand jobs opening in the New Albany/Jersey Township area and in the Pataskala/Etna Township areas. The need to get potential employees from the central Licking County area to these employers is growing. There are plans for the high growth job areas to continue growing and with that the need to move potential employees will increase. To accomplish what is necessary numerous partnerships will be needed.
- State Bike Route 65 (SBR65) connectivity from Millersport to Hebron Ohio and from Hopewell Drive in Heath to Grant Street interchange in Newark. Starting in 2014 the Ohio Department of Transportation targeted developing a state wide bicycle network. To date they have laid out a draft network and developed many partners in doing so. While this

network is in the beginning stages SBR56 goes from Millersport in Fairfield County to Buckeye Lake to Heath to Newark to Johnstown all in Licking County and to Centerburg in Knox County. While all of SBR56 will need signed through Licking County two connections need upgraded. One is from SR79 north of Millersport to Hebron which is currently a cinder path that parallels the Erie Canal and Canal Rd and needs pavement. The other is from where the Shared Use path ends at Hopewell Drive in Heath to the Grant Street interchange over SR79. This last section of abandoned rail road also needs pavement.

- IR70 from SR37 to SR79 needs raised out of flood plain and possible addition of third lanes in each direction. Approximately every 10-15 years Licking County has storm events that cause IR70 to go under water. The last event was 2004, before that 1997 and before that 1988. It has been 11 years since the last event and while ODOT has done quite a bit of work to relieve the flooding a significant event could still cause IR70 to go under water. The need to develop a plan to more permanently remove IR70 from the flood plain is necessary for the section from SR37 to SR79.
- SR16 Access Management Study from Dayton Road to CR668 (Licking Valley Road.) With the SR16 & Cherry Valley Rd interchange under construction and development currently underway along the SR161, SR37 and SR16 corridor the need to focus on the SR16 east of Newark is now necessary to prepare for the future. This 3.3 mile section of SR16 has three at grade intersections starting with Dayton Rd in Newark, Marne Rd in Madison Township and Licking Valley Rd also in Madison Township but bordering Hanover Township. An Interchange Justification Study to determine the best location to plan for a future interchange in this area will allow us to focus on future needs, while minimizing the impacts to both the natural and manmade environments. To start this process a stake holders committee would be needed including LCATS Policy Board members, representative from ODOT District 5, a LCPC board member, a member of the Board of Licking County Commissioners and Trustees from both Madison and Hanover Townships. Then hiring an ODOT prequalified consultant to lead the study analysis.
- Buckeye Lake SR79 Two-Way Left Turn Lane (TWLTL) from the four-lane section of SR79 to SR360 (N Bend Rd) east intersection with SR79.

  Since 1980 this 0.75 mile section of SR79 has had traffic volumes grow from 3,060 to a peak of 10,720 in 2002. The latest volume for SR79 in this area in 2012 is 8,360. Using the linear trend method discussed above SR79 in this section has a 2035 traffic volume of 15,399. This section of SR79 will become congested at approximately 10,000 vehicles per day which is projected to be in the year 2019.

  One thing noticed in review of traffic counts SR79 at SR360/Canal Rd, AADT 3,010, compared to SR79 @ SR360/Pizza Cottage, AADT 8,360, which shows there is a very high incidence of intra-village vehicle travel. This type of travel behavior, using vehicles on trips less than .5 miles, adds to congestion reducing roadway operating capacity/speed as traffic turns to enter and then slows or stops to exit SR79 in close proximity. If this many short

trips are being produced in the village more pedestrian and bike friendly connections, sidewalks & bike paths, should be developed.

- Intra-Village Traffic – as already discussed short trips, less than half mile that begin and end in the village can significantly reduce roadway operations. As stated above Intra-Village travel can be reduced through well-developed pedestrian and bicycle friendly connections.
- Accesses - This short segment of roadways has 36 driveways including residential and commercial, 18 public intersections and five parking lots with to/from access their full length. When combined these parking lots have a length of 736 feet along SR79. When driveways, intersections and the five parking lots are combined there is an average of 60 feet between points traffic can slow/stop to turn and slow all traffic behind them. The close proximity of locations to turn leads drivers, wishing to enter SR79, not knowing where someone approaching them with a turn signal on is going to turn, and can lead to the person pulling out in front of the approaching vehicle resulting in an angle "T-Bone" crash.
- Dog-Legged Intersections - This section of SR79 also has three offset "T" intersections Springer/Leroy (separated by 114'), Tanner/Cliff (separated by 33') & Church/Stewart (separated by 40'). Offset intersections cause significant impedance to traffic flow. Using Tanner/Cliff for example traffic may turn on SR79 at Tanner causing through traffic to slow down and immediately slow traffic again to turn off SR79 onto Cliff. This one vehicle slows traffic twice. This will further exasperate the issue of projected 2035 traffic volume congestion.

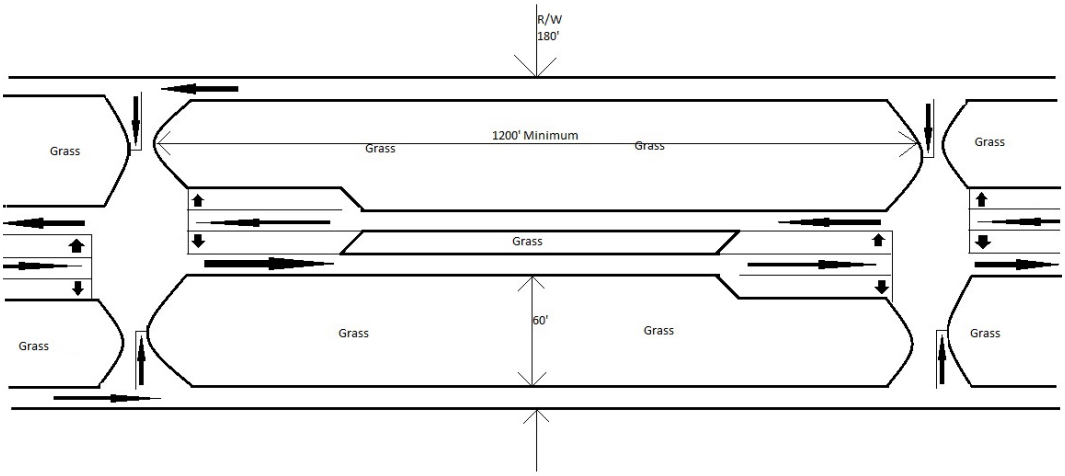
  Conflicting Lefts at Springer/Leroy - If during higher traffic volumes one vehicle wishes to turn left onto Leroy and causes a queue of vehicles to stack behind and then another vehicle wishes to turn left onto Springer and cannot turn through the queue both lanes of traffic stop. This causes large queues behind both vehicles and results in rear-end crashes. Conflicting Lefts can also result in unsafe turning behaviors, due to driver impatience, that result in angle/left turn crashes. This adds to further roadway blockage as both lanes are blocked until police arrive and clear the crash scene.
- The Village of Buckeye Lake needs to start planning now for a project that adds a Two-Way Left Turn Lane (TWLTL) and aligns the three offset "T" intersections. Without the TWLTL at approximately 10,000-11,000 vehicles per day this section of SR79 will be severely congested. These project types take 3-4 years to develop. As the projected congestion year is 2019 the village needs to start planning immediately. The TWLTL will allow left turning traffic to exit from the through lane to slow or stop and turn left allowing the through lanes to continue flowing. A TWLTL will allow traffic to flow at volumes up to 17,500 vehicles per day (according to the Local Road Research Board http://www.lrrb.org/media/reports/200625.pdf). On

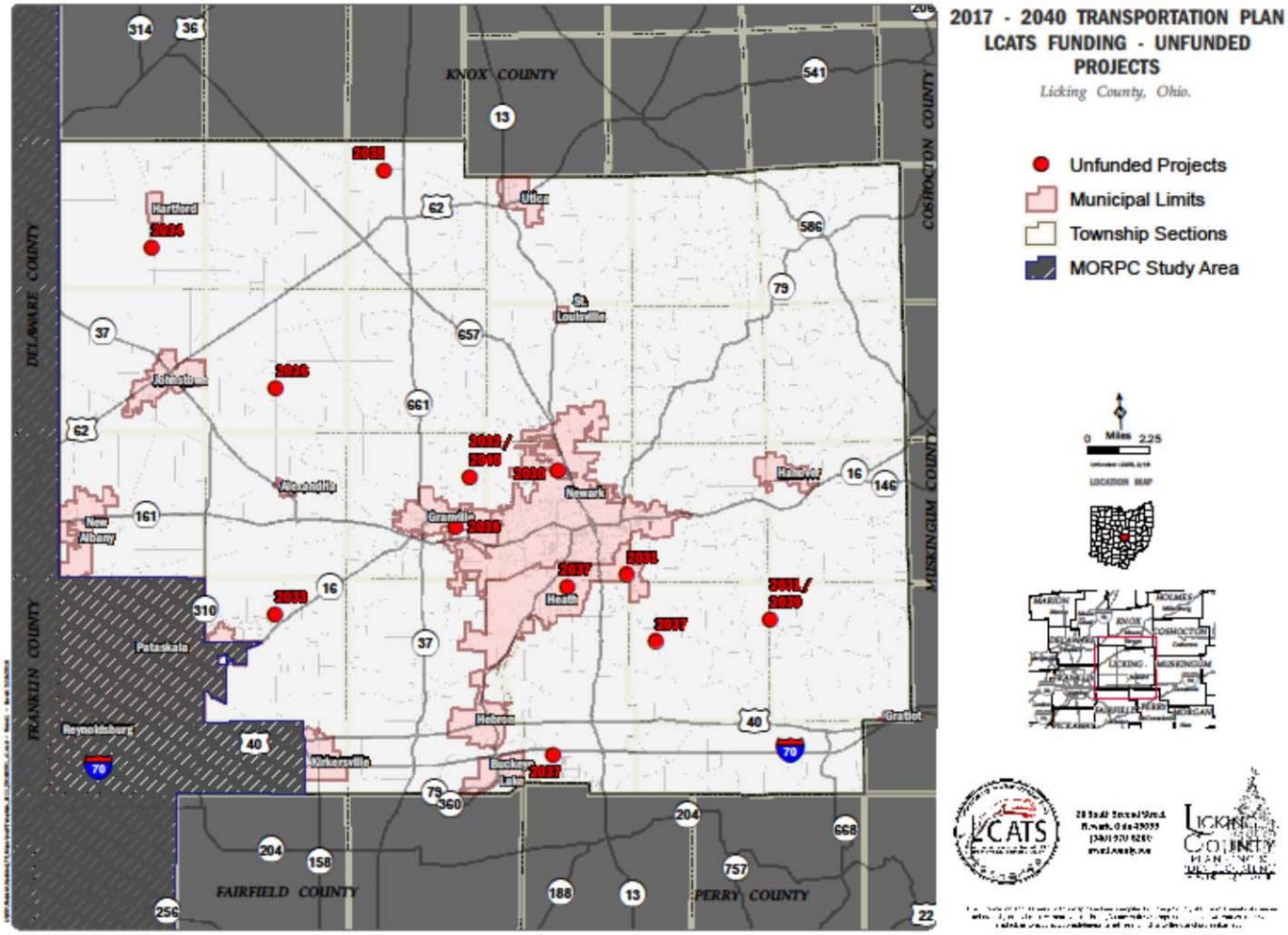
average TWLTLs reduce total crashes 29%, Injury crashes 19% and rear-end crashes 36% (According to FHWA analysis of TWLTLs

- A New Buckeye Lake SR79 Direct Alternate (DA) from SR79 near Mill Dam Rd to SR79/Canal Rd. If the current *Buckeye Lake Land Use Transportation Focus Plan* written by the Licking County Planning Commission comes to fruition this three lane section will become congested around 2030. Expanding this section of SR79 further is not feasible as numerous structure and strip takes would be need for widening beyond three lanes. There is a need for an alternate to SR79 to accommodate the projected traffic volume. This DA is not intended as a bypass but to give citizens, future visitors and emergency services an additional way through the village.
    - To accomplish the new roadway the Village of Buckeye Lake will need to hire a consultant, that is ODOT Pre-certified in Roadway Design, to perform a roadway study. The new roadway study area should be between 2-lane SR79 & IR70 and between 4-lane SR79 and Millersport Rd NE. The roadway will likely connect to the 4th St/Mill Dam Rd on the east end, but the west end could connect anywhere from west of Canal Rd to North Lynnwood Rd. See following study area map.

    - Once the new roadway location is known the Village of Buckeye Lake should develop a thoroughfare plan to protect the necessary Rights-of-Way width and not allow structures to be built within the future roadway's area.
    - There is a specific need for protecting the new roadway's capacity. An at grade Collector Distributor roadway system would use paralell service roadways to access businesses and homes that would be built along the service roads. This would also protect the flow of the primary roadway, the SR79 DA, by not having driveways

along it. There would be a need to allow only a small number, three maximum, of existing roadways within the village runing north from SR79 to intersect the Collector Distributor roadway. The intersections spacing should not be closer than 1,200 feet apart. See following Collector Distributor roadway schematic.




2017 - 2040 TRANSPORTATION PLAN
LCATS FUNDING - UNFUNDED PROJECTS
Licking County, Ohio.
Unfunded Projects
Municipal Limits
Township Sections
MORPC Study Area
KNOX COUNTY
DELAWARE COUNTY
FRANKLIN COUNTY
FAIRFIELD COUNTY
PERRY COUNTY
MUSKINGUM COUNTY
COSHOCTON COUNTY
Hartford
Utica
St. Louisville
Johnstown
Alexandria
Newark
Granville
New Albany
Hanover
Heath
Pataskala
Reynoldsburg
Kirkersville
Hebron
Buckeye Lake
Gratiot
LOCATION MAP
Miles
LCATS

Glossary

To aid individuals in understanding the many acronyms that exist within Transportation, the following glossary of acronyms was developed.

Acronym	***Definition***
AADT	Average Annual Daily Traffic
AAR	Association of American Railroads
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disability Act
ADAAG	American with Disability Act Accesibility Guidance
ASCE	American Society of Civil Engineers
ATMS	Advanced Transit Management System
AVL	Automatic Vehicle Locators
CD	Community Development
CDBG	Community Development Block Grant
CDBG	Community Development Block Grant
CE-2	Categorical exclusion 2
CEAO	County Engineers Association of Ohio
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CIC	Community Improvement Corporation
CMAQ	Congestion Mitigation Air Quality
CO	Construction
COTA	Central Ohio Transit Authority
COTC	Central Ohio Technical College
CPI	Consumer Price Index
CSS	Catholic Social Services
CSX	Consolidated Express Line
C-Tec	Joint Vocational School
CUO	Central Ohio Railroad
CUOH	Columbus and Ohio River Railroad
DOT	Department of Transportation
E&D	Elderly and Disabled
EE	Environmental Engineering
EJ	Environmental Justice
EMA	Emergency Management Agencie
EMS	Emergency Medical Services
ESA	Environmental State Assesment
ESR	Ecological Survey Report
EV	Emergency Vehicle
EVP	Emergency Vehicle Preemption
FAA	Federal Avaiation Administration
FBO	Fixed Base Operator
FE	Final Engineering Row
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GIS	Geographical Information Systems
GPS	Global Position System
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HUC	Hydrological Unit Code
HUD	Housing and Urban Development

Acronym	Definition
I	Interstate
IR	Interstate Route
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
JEDZ	Joint Economic Development Zone
JFS	Jobs and Family Services
JRS	Job Ready Site
LBRS	Location Response System
LCAP	Licking County Aging Program
LCATS	Licking County Transporation Study
LCPC	Licking County Planning Commission
LCTB	Licking County Transit Board
LEPC	Local Emergency Planning Committee
LTIP	Local Transportation Improvement Program
MDU	Mobile Data Units
MOA	Memorandum of Agreement
MORPC	Mid-Ohio Regional Planning Commission
MOTA	Mid-Ohio Transit Authority (Mt. Vernon, OH)
mph	miles per hour
MPO	Metropolitan Planning Organization
NDC	Neighborhood Design Center
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ODOT	Ohio Department of Transportation
ODOT-OES	Ohio Department of Transportation, Office of Environmental Services
OEPA	Ohio Environmental Protection Agency
OEPA	Ohio Environmental Protection Agency
OPWC	Ohio Public Works Commission
ORDC	Ohio Rail Development Commission
OSU-N	Ohio State University - North
OVI	Operation of Vehicle Impaired
PDP	Project Development Process
PE	Preliminary Engineering
PL	Planning
PPI	Producer Price Index
PR	Public relations
PROS	Professional Services
PROWAG	Public Rights of Way Accessibility Guidance
R&E	Retention and expansion
R/W	Right of Way
RCRA	Resource Conservation and Recovery Act of 1976
RGL	Regulatory Guidance Letter
RLR	Red Light Running
ROR	Run Off Road
SAFETA-LU	Safe, Accountable, Efficient Transportation Equity Act
SARA	Superfund Ammendment and Reauthorization Act of 1986
SBDC	Small Business Development Center
SCIP	State Capital Improvements Program
SHPO	State Historic Reservation Office
SIB	State Infrastructure Bank
SID	Special Improvement District
SR	State Route

Acronym	Definition
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
TAC	Transportation Advisory Committee
TAC	Technical Advisory Committee
TDFM	Travel Demand Forecasting Model
TDM	Travel Demand Management
TE	Transportation Enhancement
TIF	Tax Increment Funding
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TRAC	Transportation Review Advisory Council
TRAFx	Name of Company that has supplied us our traffic counters.
UNESCO	United Nations Educational, Scientific and Cultural Organization
US	United States
USDA	United States Department of Agriculture
US DOT	United States Department of Transportation
USACE	US Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UTP	Urbanized Area
UZA	Urbanized Area
VMT	Vehicle Miles Traveled
VTA	Newak-Heath Airport
Z-bus	Zanesville Bus System

APPENDIX I-STAKEHOLDER INPUT & PUBLIC COMMENTS

Under Separate cover

APPENDIX II - AIR QUALITY

Under Separate cover

APPENDIX III - ENVIRONMENTAL JUSTICE

Under Separate cover