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through development of a sustainable transportation system. Sustainability is a relatively new concept in transportation planning. Although the concept has many nuances, it primarily attempts to guide decisions by identifying environmental limits and maximizing societal benefits by working within these limits. The sustainability of a transportation system is difficult to gauge because of its many and varied impacts, which include resource consumption (land, energy, funding), form and visual quality (highways, rail lines, aesthetics), waste generation (air and water pollution), societal impacts (personal interactions, accessibility, inclusiveness, economics), and interrelationship with development patterns. However, transportation systems tend to be more sustainable with increasing levels of diversity and redundancy because these qualities interact to improve both efficiency and flexibility.

The contents of this report describe the sustainability elements of the 2030 Transportation Plan for the Columbus area. It begins with a discussion of environmental, social and development impacts of transportation. Then a variety of transportation modes are presented including non-motorized travel, transit, and other alternatives. Finally is a discussion of projects MORPG has conducted in the past three years and the role they play in advancing a sustainable transportation system.

2. Transportation impacts and issues

2.1 Interrelationship Between Land Use and Transportation

The rapid growth in Central Ohio that has opened the door for economic progress will continue to stretch the regional transportation network. From the mid-1970's to the present, most of Central Ohio's growth has been in suburban developments. These communities are most prevalent around the freeways and the outerbelt. This type of development pattern is expected to grow towards the outlying areas - rural countryside and farm land. Distribution of anticipated growth over the next 30 years is shown on Figure 1.

The physical characteristics and patterns of land development in a region influence the travel mode choices available to the citizens, and therefore, the types of transportation infrastructure and services demanded. Certain types of development patterns necessitate the use of personal cars for travel. For example, when jobs and housing are far away from each other and mass transit is not available, people are dependent on cars for daily travel. Development patterns that locate jobs, housing and recreation in closer proximity to each other can mean shorter and fewer car and truck trips, thus

Transportation Modes in a Livable Region

1 Introduction

The role of a transportation plan is to reflect the desires and needs of a community in a set of transportation facilities and services that allows people and commodities to move about and access various locations within and beyond the community. To do this effectively, the plan must accomplish three things: 1) determine the values and qualities of the community that transportation must serve, protect or enhance; 2) explore all available means of providing access and mobility; and 3) propose ways of providing access and mobility that do not compromise the community's values and qualities.

The overall effect of a transportation plan should be improved livability of the community through development of a sustainable transportation system. Sustainability is a relatively new concept in transportation planning. Although the concept has many nuances, it primarily attempts to guide decisions by identifying environmental limits and maximizing societal benefits by working within those limits. The sustainability of a transportation system is difficult to gauge because of its many and varied impacts, which include: resource consumption (land, energy, funding), form and visual quality (highways, rail lines, aesthetics), waste generation (air and water pollution), societal impacts (personal interactions, accessibility, inclusiveness, economics), and interrelationship with development patterns. However, transportation systems tend to be more sustainable with increasing levels of diversity and redundancy because these qualities interact to improve both efficiency and flexibility.

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2 Transportation Impacts and Issues

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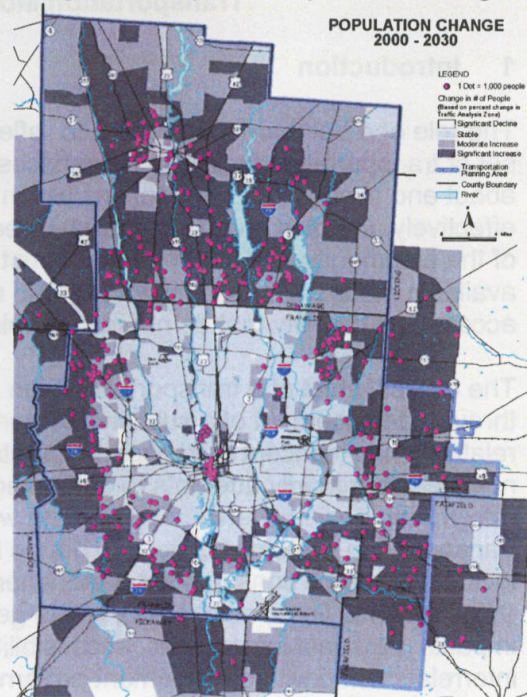
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reducing vehicle miles traveled (VMT). This development pattern also allows for alternatives to vehicular travel, such as mass transit, carpooling, vanpooling, walking or biking.

Although a better understanding of land use and transportation interaction is needed, it has come to the forefront of local policy-makers' agendas that land development patterns directly affect the transportation system, the environment and the general quality of people's lives. Congestion levels, the aesthetic quality of trips, levels of social interaction, public health and the demand for transportation funding are all real results of development decisions. In Ohio, local communities manage and control their own land-use development patterns and respond to their own citizens' concerns. The regional impact of these local decisions is becoming increasingly obvious and there is an increasing recognition of the need for regional approaches to manage development.

Figure 1: Projected Population Change



2.2 Air Quality

The quality of the air we breathe is affected by many human activities such as burning fuels, dry cleaning, painting and manufacturing. These day-to-day activities add gases and particles to the air, thereby changing the environment and negatively impacting our health. The contribution of transportation to air quality decline includes vehicle production, tailpipe emissions, evaporation of fuels, and construction of transportation facilities.

Public Health Consequences

Central Ohio continues to grapple with ground-level ozone: a colorless gas formed when hydrocarbons and nitrous oxides combine in the presence of heat and sunlight. Even at relatively low levels, ozone present in the air may cause inflammation and irritation of the respiratory tract, particularly during physical activity. The resulting symptoms can include throat irritation, coughing, and breathing difficulty. Breathing ozone can affect lung function, worsen asthma attacks, and increase the susceptibility of the lungs to infections, allergens, and other air pollutants. Children are at greater risk because they are more active outdoors and their lungs are still developing. The elderly also tend to be more sensitive to air pollution.

Another concern is fine particulate matter pollution, also referred to as PM_{2.5}. Fine particulates are composed of tiny solid particles and liquid droplets, which are released into the air by cars, trucks, power plants, industrial facilities, and from residential fire places. Unlike ozone, particle pollution doesn't need sunlight or heat to form and can occur year round and tends to be a problem in Central Ohio during the summer and fall. Particle pollution, being microscopic in size, can be inhaled deeply into lungs causing

serious health problems, and exposures can aggravate lung disease such as asthma and bronchitis. PM_{2.5} has also been linked to heart attacks and cardiac asthmas, and can change the variability of heart rate, making one susceptible to heart attacks.

Federal Air Quality Standards

There are two broad classifications for a region's air quality under the federal Clean Air Act: Attainment and Non-Attainment. Attainment indicates that a region's air quality meets the standards, and non-attainment indicates that a region's air quality has not met the standard for air quality. Franklin, Delaware and Licking counties were classified as a *marginal non-attainment* area for ozone according to the 1990 Clean Air Act Amendments. In the February 1, 1996, Federal Register, U.S. EPA issued a direct final rule to redesignate the three-county area to *attainment*. The redesignation to attainment was effective April 1, 1996. However, based on new federal standards, six Central Ohio counties have been proposed as "non-attainment," or failing to meet air quality standards for ozone. One or more counties will also be in non-attainment in late 2004 for failing to meet the new PM_{2.5} standard. This situation will require the region to pursue strategies to reduce both ozone and fine particulate pollution.

The Clean Air Act requires that the projects in Transportation Plans in non-attainment areas lead to improvements in air quality, and in maintenance areas ensure the air quality standards are maintained. The process that shows that transportation plans lead to improvements in air quality or maintain the air quality is called a *conformity determination*. Until the specific Central Ohio counties are officially designated, the conformity process applies only to Franklin, Delaware and Licking counties.

A determination of conformity of the Transportation Plan was made by MORPC with technical assistance from ODOT. The technical procedures were developed by ODOT and agreed to by MORPC. The emissions analysis was based on the MOBILE 6.2 model. Complete documentation of the conformity process, the procedures used and the analysis results are contained in a separate appendix and are available on request.

Inputs to the transportation network models were provided by MORPC based on the program of projects contained in the Transportation Plan. The results of the draft conformity analysis are shown below and show that the draft Transportation Plan is in conformity.

Figure 2: Air Quality Conformity Analysis Results

	VOC	Budget	NOx	Budget
2010 Build	27.986	67.99	35.230	70.99
2020 Build	17.166	67.99	15.091	70.99
2030 Build	17.394	67.99	11.671	70.99

Initiatives taken by MORPC

The following initiatives have been undertaken by MORPC to monitor and improve the air quality in the region:

- **Air Quality Alert:** An Air Quality Alert is issued by MORPC when ozone and/or PM_{2.5} levels are forecast to reach unhealthy levels. During an Air Quality Alert, the community and local businesses are encouraged to follow voluntary actions

to reduce emissions of pollutants that contribute to ground-level ozone or PM_{2.5} formation.

- **Formation of Air Quality Committee:** The committee consists of MORPC board members, representatives from the health community, petroleum industry, other business leaders, and representatives from environmental groups who review and propose strategies to help the Central Ohio region in achieving early attainment and guiding the activities of MORPC's air quality program.
- **Clean Air Challenge:** With the help of local governments, business groups and the health community, MORPC is undertaking a very ambitious initiative to encourage the general public to take part in voluntary strategies that will improve the region's air quality. The Clean Air Challenge will kick off in May 2004, and will encourage people to participate in rideshare programs such as carpooling, vanpooling, and using public transit, as well as other "clean air" activities such as refueling after 6 p.m. and using electric lawn equipment. This program will run for a year and a half.
- **Joining Central Ohio Asthma Coalition:** MORPC will soon be joining the newly created Central Ohio Asthma Coalition to get its inputs and broaden the awareness base.
- **RideSolutions Program in the Region:** MORPC has a full-time dedicated RideSolutions team, which helps the daily commuters within and in the vicinity of the region in finding low-cost ride alternatives, such as vanpooling, carpooling, etc., by matching their routes, commute period and available source of transportation. At present, there are about 30,000 commuters benefiting from this program and more people joining the program. (See section 3.3.1 for more information.)

2.3 Environmental Justice

Recognizing that the impacts of federal programs and activities (including federally funded transportation projects) may raise questions of fairness to certain population groups, President Clinton, on February 11, 1994, signed Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. MORPC has extended this target population to also include people with disabilities, and for the purposes of this study, it also includes households without cars and the elderly population.

The U.S. EPA's Office of Environmental Justice defines environmental justice as follows:

- "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."
- Environmental Justice, while not a new requirement, amplifies the provisions found in the three-decade old Title VI of the Civil Rights Act of 1964. Title VI of the Civil Rights Act of 1964 prohibits discriminatory practices in programs and activities receiving federal funds. The transportation planning regulations, issued

in October 1993, require that metropolitan transportation planning processes be consistent with Title VI.

The executive order also refocuses attention on the National Environmental Protection Act (NEPA), the federal law that sets policy goals for the protection, maintenance, and enhancement of the environment.

Environmental Justice strengthens Title VI by requiring federal agencies to make achieving Environmental Justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its program, policies, and activities on minority populations and low-income populations. The Ohio Department of Transportation developed DOT Order 5610.2 to address Environmental Justice and respond to Executive Order 12898.

The Policy of DOT Order 5610.2 is to:

"Promote the principles of environmental justice through the incorporation of those principles in all DOT programs, policies, and activities. This shall be done by fully considering environmental justice principles throughout planning and decision-making processes in the development of programs, policies, and activities, using the principles of the National Environmental Policy Act of 1969 (NEPA), Title VI of the Civil Rights Act of 1964, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and other DOT statutes, regulations, and guidance that address or affect infrastructure planning and decision making; social, economic, or environmental matters; public health; and public involvement."

MORPC, in its response to this very important challenge devised a process to assess the impacts of the transportation planning process, the regional transportation plan, and the Transportation Improvement Program on the target populations. MORPC identified three principles to ensure environmental justice considerations are properly integrated into the transportation planning process.

- Adequate public involvement of low-income and minority populations in regional transportation decision making.
- Assess whether there were disproportionately high and adverse impacts on low-income and minority populations resulting from federal programs.
- Ensure that the low-income and minority populations receive a proportionate share of benefits of federal transportation investments.

The process to assess the impacts includes the following:

- Using data from the U.S. Census Bureau: 2000 Decennial Census, averages of regional totals for the various target populations are calculated to identify concentrations of these populations in the area. The averages are then used as thresholds.
- Using the thresholds at which areas fall above or below the average, the specialized areas were plotted to a map of the transportation planning area. This geographical representation of the distribution of the targeted populations alerts

planners to special areas of consideration when analyzing the effects of changes to the transportation system.

- Measures that compare the relative treatment of the target populations and non-target populations in the planning process are applied to the set of projects in the Transportation Plan and TIP. These measures provide some information on whether or not the transportation investments being made in the region are having a disproportionate adverse impact on the target populations and if the benefits from these investments are equitably distributed.

The totals and averages for the demographic variables identified for measuring environmental justice are listed in the table below.

Figure 3: Environmental Justice Target Populations

Data Set	1990 Totals for the Study Area	1990 Threshold Percent of Total Population	2000 Totals for the Study Area	2000 Threshold Percent of Total Population
Total Population	1,049,656		1,232,982	
Total Households	416,400		543,750	
Minority Population	177,965	17.0	262,705*	21.3
Hispanic	8,584	0.8	23,843	1.9
Population in Poverty	122,389	11.8	120,397	9.8
Elderly Population	91,755	8.7	122,459	10.0
People with disabilities	60,602	5.8	108,253	8.8
Zero Car Households	9,404	2.3	37,987	3.1

*Includes only single race statistics.

A full report of the Environmental Justice analysis will appear as an appendix following adoption of the transportation plan. The appendix will include demographic information of the transportation planning area and its relationship to the protected populations, as well as a full description of the measures applied to assess any disproportionately high adverse impacts.

3 Multimodal Transportation System Components

3.1 Bicycle and Pedestrian System Planning and Improvements

A review and survey of the MPO planning area were initiated in 1996 to determine if the bicycle transportation and pedestrian circulation system could supplement mobility needs. The review found that within the central city an adequate pedestrian circulation system did exist, but within and between the suburban and urbanizing rural areas, an adequate system did not sufficiently serve bicycles or pedestrians due to the following deficiencies:

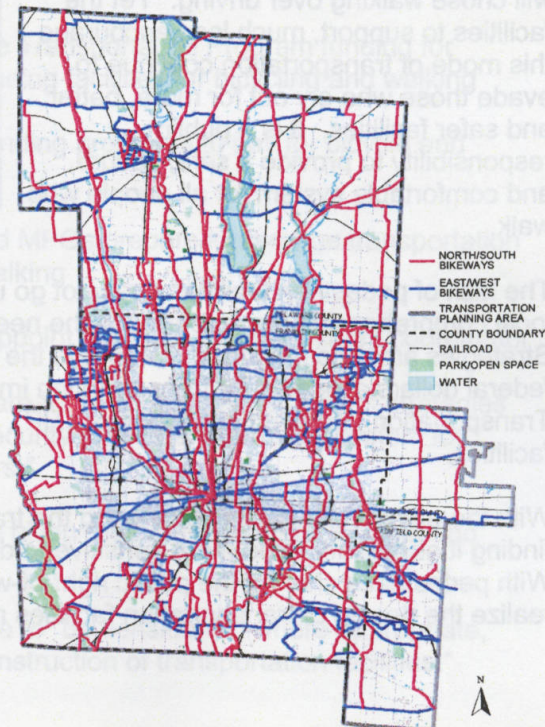
- Difficulty crossing wide, heavily traveled arterial and collector streets
- Lack of pedestrian facilities along major highways
- Incomplete and ineffective bicycle and pedestrian facilities
- Lack of convenient and safe access to destinations
- Lack of access to transit stops
- Total disregard for bicyclist or pedestrian use of the roadway
- Physical barriers
- Improper design of handicapped-accessible ramps
- Inappropriate signalization
- Lack of continuity between jurisdictions

The Central Ohio community recognizes the deficiencies in the bicycle and pedestrian transportation system as they struggle with ways to “calm” traffic and provide safe accessible facilities.

3.1.1 *The Bikeway Plan*

In 1994, MORPC updated its 1977 *Regional Bikeway Plan*. In 2000, a bikeway corridors update was completed. This plan addressed the federal transportation regulations in TEA-21, the growth forecasted in the area and the funding opportunities to encourage and support the construction of facilities. Through this plan, proposed bikeways will expand from the 322-mile network of existing and committed facilities to a 1,238-mile regional bikeway network utilizing corridors along rivers, railroads, utility easements and roadways. This network will provide direct and convenient bicycle travel within and between residential areas, places of employment and regional activity centers. A 2003 Bikeway Plan report accompanies and is incorporated within the 2030 Regional Transportation Plan.

Figure 2: Proposed Regional Bikeway



3.1.2 Pedestrian Planning

The public right-of-way represents the thread that ties together individual parcels and uses of land. Public right-of-way is used for the construction of transportation facilities and the placement of the various public utilities necessary to support development. Walking facilities provided in the right-of-way include more than just sidewalks. These facilities also include walkways, curb ramps, crosswalks, traffic control devices, pedestrian signals, special walkways found on some portions of freeway rights-of-way, bus stops or loading areas, grade separations and stairs or escalators related to these facilities.

People are more likely to walk or bike if it is convenient, safe and enjoyable and if there are places to go and things along the way to capture the attention and sense of imagination. For a mode of transportation as essential as walking, accommodations for pedestrians are not prioritized high in many central Ohio communities. It seems only when children are at risk or when an ADA standard has been violated does walking or providing facilities on which to walk receive more than cursory attention.



Walking begins for many of us at the age of one. At some point in our senior years, because of safety concerns, most of us will choose walking over driving. Yet the facilities to support, much less encourage this mode of transportation continue to evade those who cry out for more, better and safer facilities. It is a public responsibility to provide a safe, secure, and comfortable system for all people who walk.



The lack of pedestrian facilities does not go unnoticed by central Ohio communities. All local comprehensive plans reference the need for more and connecting facilities. Strategies are recommended to improve the walking environment. Yet in the billions of federal dollars allocated for transportation improvement and maintenance in the Transportation Improvement Program (TIP), a mere fraction is allocated for pedestrian facilities.

With the automobile totally dominating the transportation system, communities are finding it necessary to be more sensitive to design when providing pedestrian facilities. With pedestrians sharing the public right-of-way with automobiles, communities now realize the design of transportation facilities needs to be safe for all users.

The ultimate desire in pedestrian-friendly design is not only to maximize safety and convenience, but also to encourage the walking experience by making it pleasant and enjoyable. The pedestrian is exposed to traffic, noise, weather and environmental elements and is highly sensitive to the condition of the walking surface. Design should seek to minimize the potential negative influences and emphasize the positive ones. One of the attractive elements of walking is being able to observe more detailed features of the landscape or streetscape, the fabric of every community. These opportunities should be enhanced.



Federal Law Affecting Pedestrian Transportation

The United States Department of Transportation (U.S. DOT) is responsible for transportation policies and spending programs at the federal level. Past policies and programs of the U.S. DOT and the Federal Highway Administration (FHWA), such as the Interstate Highway System, have had tremendous influence on the national transportation system. FHWA works with Departments of Transportation (DOT's) in each state to implement policies and programs.

TEA-21: The Transportation Equity Act for the 21st Century (TEA-21) adopted in 1998 carries forward the programs for bicycling and walking established by its 1991 landmark predecessor ISTEA (Intermodal Surface Transportation Efficiency Act) and also includes several new and stronger directives. Important policies and statements included in TEA-21:

- A ten percent set-aside of Surface Transportation Program funding for transportation enhancements including facilities for bicycling and walking
- The opening of numerous other funding programs to pay for bicycle and pedestrian facilities
- The requirement that all states and MPOs prepare long-range transportation plans that include bicycling and walking
- The requirement that each state appoint a bicycle and pedestrian coordinator
- State and MPO long-range plans are to "provide consideration of strategies that will increase the safety and security of the transportation system for motorized and non-motorized users."
- Bicyclists and pedestrians shall be given "due consideration" in state and MPO plans.
- Bicycle and pedestrian facilities are to "be considered, where appropriate, with all new construction and reconstruction of transportation facilities."

TEA-21 also requires the Secretary of Transportation to ensure that bicycle and pedestrian linkages are maintained and improved, stating that:

- “The Secretary of Transportation shall not approve any project or take any regulatory action that will result in the severance of an existing major route, or have an adverse impact on the safety of non-motorized transportation traffic and light motorcycles, unless such project or regulatory action provides for a reasonable alternate route or such a route already exists,” and
- “In any case where a highway bridge deck being replaced or rehabilitated with federal financial participation is located on a highway on which bicycles are permitted to operate at each end...and the Secretary determines that the safe accommodation of bicycles can be achieved at reasonable cost, such bridge shall be so replaced.”

Routine Accommodation: FHWA issued a Guidance Memorandum regarding the bicycle and pedestrian provision of TEA-21. The memorandum is extremely supportive of bicycling and walking and clearly establishes that these modes are an important complement of the transportation system, stating that:

- “To varying extent, bicyclists and pedestrians will be present on all highways where they are permitted and it is clearly the intent of TEA-21 that all new and improved transportation facilities be planned, designed, and constructed with this fact in mind.”
- “We expect every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations and maintenance activities.”
- “Bicycling and walking are to be accommodated as an element of good planning, design and operation.”

The guidance also clarified the meaning of “due consideration” stating that:

- A presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities.
- The decision NOT to accommodate them should be the exception - not the rule.
- Must be exceptional circumstances for denying access through design or prohibition.

Americans with Disabilities Act (ADA): Administered by the Department of Justice, ADA prohibits state and local governments from discriminating against people with disabilities in all programs, services, and activities. ADA also prohibits discrimination against people with disabilities in transportation services provided by public entities. State and local government responsibilities under Title II of the ADA include:

- New and altered streets with sidewalks must contain curb ramps.

- Alterations defined as “a change that affects or could affect the usability of a facility or part of a facility.” Streets and curbs are considered a facility.
- Accessibility designs required to be to new construction standards.
- Alterations must meet new construction standards, unless technically infeasible.
- Street resurfacing has been defined by the Courts as an Alteration.
- Federal District Appeals Court decision held, “If a street is to be altered to make it more usable by the general public, it must also be made more usable for those with ambulatory disabilities.”

State Policies Affecting Pedestrian Transportation

In addition to making physical improvements to transportation infrastructure, a variety of state policies affecting bicycle and pedestrian transportation have become outdated or do not support alternative transportation. Policy changes can include a number of elements:

- Goals that emphasize alternative transportation. Revisions to transportation goals and objectives that include encouraging alternative transportation.
- Changes to standard operating procedures. Policies for standardizing bicycle and pedestrian improvements through the regular activities of local, regional and state governments.
- Changes to the motor vehicle code. It is important to eliminate laws that are problematic for bicyclists and pedestrians, such as mandatory side path laws (requiring bicyclists to use side paths if they exist), or laws that require bicyclists to ride in bike lanes if they exist (this is a problem because bicyclists must merge into travel lanes when making left turns, or when there is debris in the bike lane). Motor vehicle laws should be designed to give pedestrians the right-of-way when crossing the street, and should limit right-turn-on-red where appropriate.

MPO Activities Affecting Pedestrian Transportation

Survey of the Pedestrian Circulation System: A 1995 survey in the MORPC planning area found that an adequate pedestrian system exists within most areas of the central city and mature suburbs. However, these areas are in need of some attention for continuity and safety issues. In addition, within and between the suburban and urbanizing rural areas, the transportation system does not sufficiently service pedestrians due to:

- Difficulty crossing wide, heavily trafficked arterial and collector streets
- Lack of pedestrian facilities along major highways
- Incomplete and ineffective pedestrian facilities
- Lack of convenient and safe access to destinations
- Lack of access to transit stops
- Total disregard for pedestrian use of the roadway and at crosswalks
- Physical barriers. Low visibility for pedestrians and motorists
- Improper design of handicapped accessible ramps.

Vision for Pedestrian Facilities: The pedestrian facilities vision adopted for the central Ohio area in 1998 describes a system that:

- Meets the needs of all walkers
- Supports, encourages and accommodates pedestrian travel
- Provides access to other modes of transportation, destination-oriented facilities, and existing linkages within development areas
- Ensures the development of pedestrian facilities and reduces dependence on single-occupant motorized vehicles, especially for the young and the elderly
- Supports effective pedestrian-friendly land-use planning and development
- Ensures a safe and secure pedestrian environment

Pedestrian Facilities: Best Practices is a 1999 guide local communities can use to develop a new or improve an existing pedestrian program. The guide compiles best practices from across the country that can be utilized to improve identified deficiencies. The guide also includes policies, goals, strategies and actions local communities in the Central Ohio area recommended and adopted to improve pedestrian travel in the region and make areas more pedestrian-friendly.

Pedestrian Facilities



Best Practices 1999

Pedestrian Facility Needs: In 2001, the Mid-Ohio Regional Planning Commission conducted a survey to help assess the region's need for pedestrian facilities. The survey instrument was designed to determine if local communities had an inventory of pedestrian facilities and whether policies or procedures existed for the installation of facilities in new developments and/or retrofitting. Thirty-six communities were surveyed, of which 26 responded for a response rate of 72 percent. The survey showed the following results:

- A little more than half of the respondents do have design standards for pedestrian facilities in new developments.
- More than half of those who stated yes were cities (see Figure 7).

Figure 7: Pedestrian Facility Design Standards

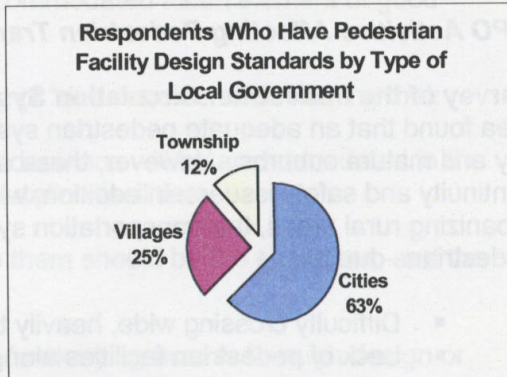
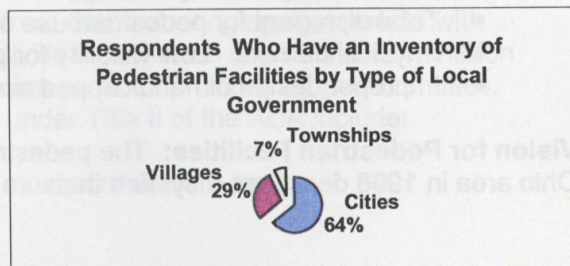


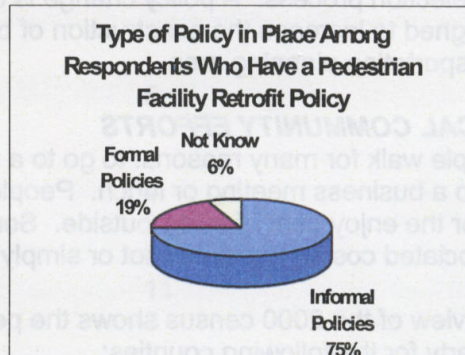
Figure 8: Pedestrian Facility Inventory



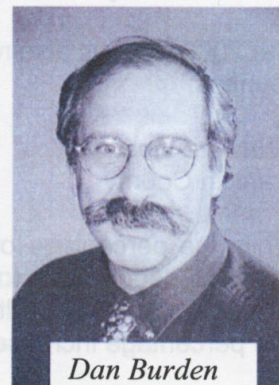
- Half of the respondents do have an inventory of existing pedestrian facilities; i.e., sidewalks, crosswalks, handicapped ramps,

- pedestrian-accentuated signals.
- Sixty-two percent of the respondents have a policy in place for retrofitting pedestrian facilities. Of these, most are informal policies which include:
 - ADA compliance
 - Replace facilities in conjunction with roadway projects
 - Upgrade facilities in conjunction with roadway projects
 - Upon redevelopment and new development
 - If remove facilities, will replace
 - Upgrade school traffic control signs
 - Upgrade all marked crosswalks to "continental" style
 - Replace in conjunction with street maintenance such as repaving or overlays
 - Within specifications for construction or reconstruction of facilities
 - Currently updating standard drawings to include facilities

Figure 9: Facility Retrofit Policy



Walkable Communities: MORPC hosted a well-attended half-day Walkable Communities workshop on November 11, 2003, for local communities and consultants. Dan Burden, nationally recognized authority on bicycle and pedestrian facilities and programs, presented to over 30 people from communities in Franklin and Delaware counties. Mr. Burden presented cost-effective tools, design and simple applications that could improve the walkability of communities, making them more pedestrian- and bicycle-friendly. The workshop was sponsored by the Ohio Environmental Council for the city of Columbus.



Dan Burden

Transportation Improvement Program: In the Transportation Improvement Program (TIP), pedestrian improvement facilities are categorized to support programming of pedestrian projects. The categories are listed as follows:

<u>Pedestrian Sidewalks</u>	
NEW	1 or 2 sides
REPLACE	1 with 1 side, 1 with 2 sides, 2 with 2 sides
Pedestrian Signals	NEW REPLACE
Pedestrian Lighting	NEW REPLACE
ADA RAMPS	NEW REPLACE

In July 2002, MORPC amended its Principles for Allocation and Management of MORPC-Attributable Federal Funding. The revised TIP Weights and Factors for Project Evaluation included new criteria, Pedestrian and Bicycle Connections (Factor Weight of 5) under Goal II: Safety.

Pedestrian facilities contained in recent TIPs are as follows:

SFY 2002-2005	31.13 miles
SFY 2004-2007	23.84 miles

TEP and CMAQ: Additionally, the Transportation Enhancement Program (TEP) and Congestion Mitigation/Air Quality (CMAQ) program provided MORPC an opportunity to demonstrate its support for bicycle facilities by prioritizing the construction of facilities in its selection process. A policy change is being considered in the TEP and CMAQ criteria designed to increase the construction of bicycle and pedestrian facilities in the transportation planning area.

LOCAL COMMUNITY EFFORTS

People walk for many reasons: to go to a neighbor's house, to run errands, for school, to go to a business meeting or lunch. People also walk for recreation and health benefits or for the enjoyment of being outside. Some cannot afford an automobile and its associated costs. Some cannot or simply choose not to drive.

A review of the 2000 census shows the percentage of families and individuals below poverty for the following counties:

	Families	Individuals
Delaware County	2.9	3.8 %
Franklin County	8.2	11.6 %

The 2000 Census also reveals the following walking mode use in Delaware and Franklin counties:

	Percent who Walk
Delaware County	1.4
Franklin County	2.7

While the percentage of those who walk doesn't seem very high, in Delaware County over 800 people walk to work, while in Franklin County, over 14,000 do. If one adds to those numbers the adults who do not work and children under the age of 15, the number and percentage increase substantially.

Delaware County		Franklin County	
816	Walk to work	14,610	
2,751	Below Poverty/Over 18	83,366	
<u>26,145</u>	Children under 15	<u>227,531</u>	
29,712	Total who walk	325,507	
27%	Percent of Population	30%	

The number of pedestrian accidents also demonstrates the need for a safe transportation system. In the transportation planning area, the distribution of pedestrian accidents by location is as follows:

	2001	2002
Delaware County		
Ashley		1
Berlin		1
Delaware City	9	11

Dublin	1	
Genoa	1	1
Liberty	1	
Orange Township		2
Sunbury	1	
Westerville		1
Franklin County		
Bexley	12	5
Blendon Township	2	1
Canal Winchester		1
Clinton Township	6	4
City of Columbus	468	379
Dublin	4	3
Franklin County	6	11
Gahanna	2	3
Grandview Heights	1	
Grove City	5	2
Groveport	1	
Hilliard	2	3
Jackson Township	1	2
Madison Township	3	3
Marble Cliff		2
Mifflin Township	6	4
Minerva Park		1
New Albany	1	
Obetz		1
Pleasant Township	1	1
Prairie Township	8	6
Reynoldsburg	5	6
Sharon Township		3
Upper Arlington	1	1
Washington Township		1
Westerville	6	3
Whitehall	9	8
Worthington	1	7

In the city of Delaware there were 20 total pedestrian accidents during 2001 and 2002. Of the 20, 9 were on SR 36 and 4 were on SR 37.

In the city of Bexley there were 17 total pedestrian accidents during 2001 and 2002. Of the 17, 5 were on Main Street.

In Clinton Township there were 10 total pedestrian accidents during 2001 and 2002. Of the 10, 5 were on Cleveland Avenue.

In the city of Columbus there were 847 total pedestrian accidents during 2001 and 2002. Of the 847,

High Street	60
Broad Street	49

Livingston Avenue	37 (includes 2 in Reynoldsburg)
Cleveland Avenue	26 (does not include 5 in Clinton Township)
Sullivant Avenue	25
Parsons Avenue	22
Main Street	13 (does not include Bexley)
Fairwood Avenue	10
Eleventh Avenue	10
Third Street	9
Whittier Street	9
Spring Street	9

All of these streets are either a major or minor arterial providing service to the Central Business District and other activity centers located along the corridor. This illustrates that even though sidewalks may not exist on all streets, people still have a need to access the destinations located along these roads. It further demonstrates that traffic calming or other traffic management operations are necessary in areas where sidewalks exist.

As traffic congestion increases, requests for implementation of traffic-calming measures are becoming more frequent. Traffic calming should be structured as a part of a comprehensive approach to transportation planning – a necessary component of a well-balanced transportation system allowing users at any given time to take on the role, comfortably and conveniently, of driver, bicyclist or pedestrian.

Needed local policy changes to support improved pedestrian facilities include revisions to zoning ordinances and subdivisions regulations to encourage and/or require development of bicycle and pedestrian facilities during development projects. Specific local policies supporting non-motorized transportation are shown below.

Columbus: The city of Columbus has taken steps to improve the walkability and livability of its city. The following are programs that have been put in place:

- Sidewalks Near Schools – program to construct sidewalks near neighborhood schools
- Traffic-Calming Program – complaint-oriented to solve speeding and reduce accidents
- Linden Area Traffic Management Plan – first of its kind, a comprehensive traffic-calming plan for an area
- Downtown Columbus Circulation Study – to make downtown Columbus more livable
- Pedestrian and Circulation Committee – reviews pedestrian and traffic issues
- Columbus Area Pedestrian Safety Committee - addresses the safety of children walking
- Comprehensive, Neighborhood and Area Plans – includes bicycle and pedestrian transportation elements
- Traditional Neighborhood Design (TND) – based on density, everyone lives and works in the same area

Village of Powell – (December 1995) Comprehensive Plan recommendations:
Implement a bikeway (walkway) plan connecting neighborhoods and parks to the town center, creating options to vehicular travel for residents within the town.

Land-Use Plan: Community Goals with Regard to Land Use
Encourage a more pedestrian-scaled environment, small scale non-residential uses and an emphasis on civic design.

A Master Plan for Walking and Biking in Powell, Ohio. (May 2001)

City of Pickerington – (October 2000) Comprehensive Plan, Citizens Advisory Committee and Community Attitude Survey Combined Goal Statement:

Transportation – Planning additional roads or widening of existing corridors should consider both the aesthetics experienced by the traveler and the residents, alternative modes of transportation such as bike lanes and paths, connecting corridors with pedestrian walkways, etc. Upgrades should happen in accordance with future land uses designated throughout the planning area.

Housing - Planned communities with pedestrian connector to parks, recreation and schools should be encouraged.

Parks, Recreation and Open Space – Plan and identify pedestrian corridors, bike paths, greenways and parks to create a contiguous system.

Neighborhoods – Sidewalks should be integrated along major roadways in a manner that will not hinder the rural character of the area. Paving types, vegetation and limiting sidewalks to one side of the roadway would help to both preserve the rural character and provide a unifying theme to the area.

Bicycle and Pedestrian Facilities Master Plan (January 2001) – Incorporated MORPC's regional bikeway and pedestrian best practices guide.

Genoa Township – Comprehensive Plan (January 1999) – Planning Vision:

1. Township, County and State Roads Linking Communities and Creating Edges for Residential Neighborhoods - Major arterials should serve as edges to neighborhoods, defining each neighborhood and serving as a travel corridor linking residents with other neighborhoods and surrounding communities. Route 3, Big Walnut Road and the abandoned railroad right-of-way serve that function presently and could be enhanced if additional area along their respective rights-of-way were used for alternative modes of transportation (e.g., bikeways, trailways and/or natural buffers, etc.).

2. Park and Recreation Areas Prominently Located within Residential Neighborhoods – Open space should include broad bands of natural land adjacent to major streets and collector streets. The natural corridors could define neighborhoods; provide areas for walking trails and bikeways in addition to providing a rural flavor to any development.

Specific Issues: Pedestrian Orientation – As the township continues to develop, there is an increasing need to have a people-oriented pedestrian environment. It is Genoa Township's intention to encourage bicycle and pedestrian linkages.

Trafficways – Community Development Principles: (1) Provide for the separation of transportation modes within neighborhoods and along major streets where desirable for the public safety. (2) Reduce automobile orientation by requiring pedestrian paths to be completed within and between developments and encouraging the use of other pedestrian/bikeway linkages within and between residential, retail developments and office parks.

Orange Township – 2001 Comprehensive Plan – As the township grows, new transportation options could help relieve auto congestion on local roads. Such options might include a mass transit, light-rail park-and-ride at Lewis Center, bikeways between subdivisions, sidewalks connecting neighborhoods, and mixed-use developments with provision for some neighborhood shopping.

Recommendations: 13.1 Goals and Objectives:

Goal 1: To preserve the rural and natural character of Orange Township as expressed in its open spaces, green areas, farms, natural resources (floodplains, wetlands, slopes > 20%, ravines, creeks and rivers) as it changes from a rural to suburban community.

Objective D: Require the linkage of planned developments by bike paths or walking paths in greenways so that new neighborhoods are all pedestrian-oriented and children can move safely between neighborhoods without having to be driven by automobile.

Goal 11: To link developments with green spaces and paths. Objectives a) Amend the zoning text to require a greenway link between new planned developments, b) Create a detail for greenway bike paths, c) Create a new greenway and bike path along the east-side of the CSX track to link the new Lewis Center and the new Township Hall on Orange Road.

Sub-Area 4 - Olentangy Valley South – Work with Highbanks Metro Park to provide pedestrian access to the park opposite the entrance to Highmeadows Village Drive.

Norwich Township – Land-Use Plan (February 2001) – Recommendations: All new developments shall have sidewalks and meet minimum specifications for school bus access.

Madison Township – Comprehensive plan (1999)

Encourage sidewalks and foot trails to be part of new residential development to facilitate foot traffic within and between developments.

Goal – Improve circulation by increasing transportation options.

While some new roads and road improvements are recommended, this plan will also explore non-vehicular travel and recreation options. Provide pedestrian connection across or under major arterial streets, with bikeways along existing roadways or under existing bridges.

Village of Canal Winchester Community Plan Update (July 1999)

Recommendations: Planning Issues: Land-Use Policies: Develop criteria that encourage neighborhoods.

Connectivity can occur through the use of “Conservation Style Developments” where larger set-a-sides of open space are utilized including mandated pathways, bikeways and the preservation of natural features.

Policies: Pedestrian Orientation

As the village continues to develop, there is an increasing need to have a people-oriented pedestrian environment. Such an environment is an integral part of the village's traditional small-town character. It is the village's intention to encourage bicycle and pedestrian greenway linkages to connect neighborhoods and developments whenever feasible.

Trafficways: Community Development Principles:

Reduce automobile orientation by requiring pedestrian paths to be completed within and between developments and encouraging the use of other pedestrian/bikeway linkages within and between residential, retail developments and office parks.

Provide for the separation of transportation modes within neighborhoods and along major streets where desirable for the public safety.

Develop streetscapes as attractive and integral parts of public open spaces, including street-free planting requirements and other landscape buffer treatments.

City of Upper Arlington Master Plan (2001)

Land Use Objective: Encourage neighborhood and community-level retail.

Strategy: Requiring street and walkway connectivity between retail and adjacent neighborhoods to encourage pedestrian access and better distribution of traffic.

-Connectivity standards will be established in design standards and guidelines to ensure that residents can safely and easily walk or bike between their neighborhoods and commercial areas.

Land-Use Plan Principles: (f) Pedestrian access will be improved.

-The community currently lacks strong pedestrian and bicycle connections, making it difficult for people to move about the city except by automobile. Providing these connections will enhance the city's transportation network (perhaps easing congestion), but more importantly will greatly improve the city's livability. Walking and biking are healthy activities and bring about an enhanced sense of community. Likewise, the city's major activity centers should have stronger linkages to its neighborhoods. This strengthens the bonds between institutions and residents.

City of Hilliard – Master Plan Update (1996)

Open Space Plan – Recommendations - Wherever possible the bike path system should be connected to parks and existing residential neighborhoods.

Neighborhood Residential District – Recommendations – Sidewalks should always be along both sides of the street and bike paths should be placed to link neighborhoods.

Rural Neighborhood Residential – Recommendations – Sidewalks should parallel both sides of all streets within neighborhoods and bike paths should be placed to link neighborhoods. Sidewalks are optional in rural neighborhood areas, but are strongly encouraged throughout residential cluster areas.

Grandview Heights Community Plan (1997)

A Plan for Streets and Pedestrian Ways

Goals: Provide for the safe and efficient movement of people and goods throughout the community.

Objectives: (1) To take advantage of the opportunities presented by the completion of I-670 to improve Dublin Road and Goodale Boulevard in a manner that strengthens connections between Grandview Heights and downtown Columbus in a pedestrian- and bicycle-friendly way. (3) To make all areas of Grandview Heights accessible to pedestrians.

Planning Principles and Guidelines

Streets (1) Update and maintain a street inventory that reflects the condition and maintenance needs of all city streets. (2) Work with the city of Columbus to improve Dublin Road to a standard that will take advantage of the improvement plans that will functionally separate this road from the Spring-Sandusky interchange and provide a strong non-highway link to downtown Columbus.

Pedestrian Ways (1) Recognize that pedestrians are the catalyst that makes the essential qualities of the community meaningful. (2) Increase pedestrian activity on Goodale Boulevard to promote retail/wholesale business activity. (5) Look for opportunities to directly connect local destinations. (6) Examine the safety of intersections for use by pedestrians and cyclists.

Grandview Gateway District (Grandview Commons and Dublin Pike Districts)

Pedestrian Space: Secure pedestrian ways along the Grandview Avenue corridor. Provide links between all public spaces, parks and buildings. Promote the potential of the railroad right-of-way as a rail-to-trail facility that will link areas within the city, as well as link the Grandview community to downtown Columbus. Encourage pedestrian and outdoor activity areas within new or renovated developments.

Dublin Community Plan (1997), Policies, Issues and Strategies

Encourage development patterns that support pedestrian mobility

Issues: Dublin's regulations require sidewalks for all new development. However, Dublin's widespread pattern of development does not facilitate pedestrian mobility. There are insufficient pedestrian connections and many pre-existing roads and areas without pedestrian facilities. With the exception of Old Dublin, few areas of Dublin invite pedestrian movement.

Strategies: Encourage mixed-use development; which is the combination of residential and commercial uses. Provide continuous, direct and convenient pedestrian linkages to and between activity areas. Revise the city's development codes to promote pedestrian mobility. Integrate locally serving retail with surrounding uses.

Promote alternatives to the single-occupant vehicle.

Strategies: Provide for pedestrian mobility through adequate pedestrian facilities.

Slow the travel speeds on non-primary roads and provide for safer pedestrian and bicycle travel through revised roadway design standards.

Reduce the travel speeds on non-primary roads and provide for safer pedestrian and bicycle travel through revised roadway design standards.

The Village of New Albany – Strategic Plan (2001)

Leisure Trails – As development has occurred, the system of trails has expanded but still is not interconnected to an effective level. In particular, access between the school campus, the residential areas and the Village Center will be increasingly important as the village continues to grow. To this end, the village has a long-range leisure trail plan.

It is now expected that any development occurring along these routes will be responsible for construction of the corresponding portion of the leisure trail system.

The **Village of Obetz** - Strategic Plan (2001)

The lack of pedestrian accessibility to the village center is considered a weakness. Some citizens indicated that future development should become more pedestrian- than automobile-oriented.

Issues/Challenges

Two issues many communities face with installing pedestrian facilities are cost and public opposition to retrofitting. There is no doubt that including pedestrian facilities in the early stages of development helps solve these issues.

With population and employment forecasted to increase, communities should now update their development site plans, zoning requirements, commercial development plans, and comprehensive plans to include language that requires the installation of pedestrian facilities along the arterial frontage of the development, if any, connections to retail developments, strip centers and malls, and areas of entertainment and parks. An employee should not have to drive across the street for lunch, nor should an individual have to drive to the drug store on the corner. Emphasis should be made to provide safe and convenient pedestrian connections wherever possible.



Integration with Mass Transit

Linking bicycle and pedestrian facilities to transit must be a priority. This integration not only induces environmental benefits by reducing automobile emissions; it also creates a viable multimodal use of transportation for low-income people, people with disabilities and children. However, in order for this multimodal use of transportation to be successful, it must have adequate and appealing pedestrian facilities and a sufficient supply of transit service routes.

Coordinated bike-bus programs can significantly expand mobility for many people who lack automobiles and for those who live too far from available bus stops. Pairing the two modes also benefits transit by increasing ridership and cost recovery.



COTA has taken several steps toward this objective. COTA has installed bike lockers at 5 park-and-ride lots. As well, COTA has applied for and received funds to equip all of its buses with bicycle racks.

3.2 Transit Planning

3.2.1 *Central Ohio Transit Authority (COTA)*

Publicly-owned transit in Columbus traces its roots to 1971 when the local governments of Franklin County, threatened by the loss of bus service from the privately-owned Columbus Transit Company (CTC), came together to form the Central Ohio Transit Authority (COTA). A 13-member board of trustees was charged with the responsibility of developing a plan to assume ownership and operation of a regional transit authority. Franklin County voters approved a 0.8-mill property tax levy to finance the purchase of the bus system, and COTA began operating public transit on January 1, 1974.

COTA immediately began to expand service and add new routes. Fares were stabilized, and in 1975 voters approved a five-year, 0.6-mill property tax levy. By 1978, bus ridership had increased 15 percent, and COTA went back to the voters in 1979 with a proposal to shift tax support from a property tax to a 0.5-percent sales tax. The issue was narrowly defeated, forcing COTA to reduce service and increase fares.

In 1980, COTA approached voters in Franklin County with a well-developed and carefully thought-out plan for improved public transportation. The plan contained a blueprint to develop one of the most modern bus systems in the country and promised six years of service for only five years of tax revenue. This package won voter approval, and in 1981 COTA set out to accomplish a most ambitious mission.

By 1985, COTA had accomplished the following:

- Restored weekend, holiday and late-night service
- Added 25 new routes
- Improved or extended 34 other routes
- Reduced fares and added several new fare incentives
- Expanded the fleet by 21 percent to 343 buses
- Purchased 244 new buses
- Built or improved 21 park-and-ride lots with 1,600 spaces
- Constructed two maintenance and storage facilities
- Constructed two downtown express bus terminals
- Expanded Project Mainstream paratransit for people with disabilities
- Completed numerous system improvements in scheduling, marketing, scheduled fleet maintenance, fare collection, data processing and performance monitoring to improve efficiency

At the completion of this program, COTA's sales tax had generated sufficient local revenues to continue system operations beyond the projected sixth year. While local funding was sufficient, state and federal support had declined precipitously. By 1987, COTA's federal transit assistance had fallen by 37.5 percent. As a result of this shifting fiscal burden, COTA went to the voters in 1986 to renew the 0.5-percent sales tax, but the issue was defeated. A second issue was defeated in 1988. Faced with tightening financial restrictions, COTA was forced to increase fares and reduce service.

In 1989, the COTA board authorized a 0.25-percent sales tax issue to be placed on the ballot. Supported by the Columbus Area Chamber of Commerce and many community

leaders, COTA mounted a successful campaign that informed voters of the need for adequate funding for public transportation. The voters responded, approving a 10-year, 0.25-percent sales tax that permitted COTA to restore some services, begin replacing its aging bus fleet, and plan ahead for the needs of the 21st century. The voters made this local funding permanent in November 1999.

The accompanying graphs indicate the service hours and ridership for COTA over its existence. The charts show that the level of ridership and service hours is tied to the revenue that COTA can secure. The looming federal cutbacks place a heavy burden on COTA to serve the needs of a growing community. COTA must have greater reliance on farebox revenues, in addition to local and state revenues, to continue addressing the community's needs.

COTA Transit Funding

The level of funding for transit is an issue that must be continually addressed. Facing the current transit funding policies of federal and state governments and the failure in 1995 of the levy, COTA had to become more creative in addressing regional transportation problems. With scarce resources and a fiscally conservative environment, COTA became more entrepreneurial and forged partnerships with the private sector and other organizations to address the transportation needs of the county.

Figure 10: COTA Travel Hours

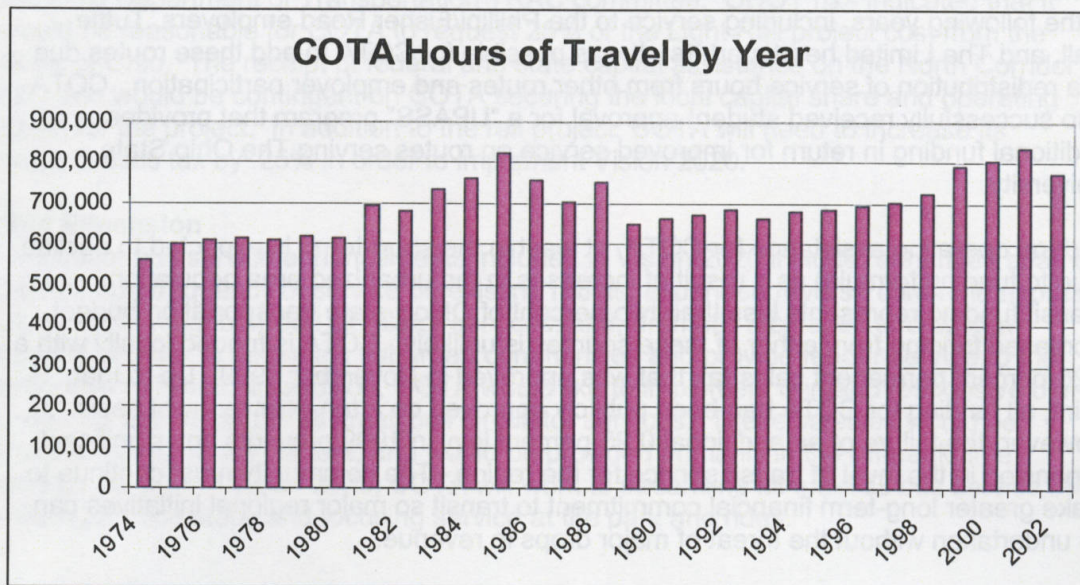
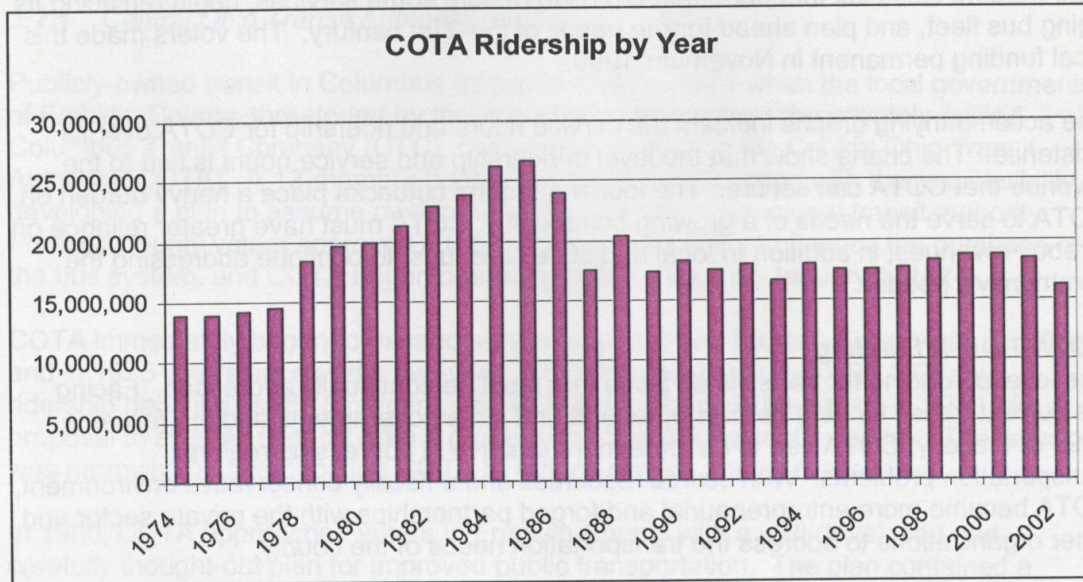


Figure 11: COTA Ridership



Although the 1995 levy failed, COTA was able to add several new routes and extensions in the following years, including service to the Phillipi/Fisher Road employers, Tuttle Mall, and The Limited headquarters. It was possible for COTA to add these routes due to a redistribution of service hours from other routes and employer participation. COTA also successfully received student approval for a "UPASS" program that provides additional funding in return for improved service on routes serving The Ohio State University.

Federal operating assistance for COTA, at least in the short-term, is expected to decline (due to funding formula) as a result of increases in the urbanized area population. Transit funding represents less than two percent of Ohio's state transportation budget. Increased funding from either of these sources is unlikely. COTA is funded locally with a 0.25-percent permanent sales tax that was approved in November 1999. Up to that point, all funding for COTA had been publicly approved on a ten-year renewal basis. However, the failure of an additional 0.25-percent levy in 1999 prevents any significant expansion in the level of transit service for the region. The community must continue to make greater long-term financial commitment to transit so major regional initiatives can be undertaken without the threat of major drops in revenue.

In the last two years, COTA has experienced significant reductions in sales tax revenue, state and federal capital, and operating assistance. COTA has been forced to reduce fixed-route and Project Mainstream service hours and administrative costs. COTA has decreased its number of service hours from 838,841 in 2001, to 776,011 in 2002.

COTA's future, indeed the future health of the region's overall transportation system, greatly hinges on the passage of a levy that will allow expansion of the transit system. This additional revenue will enable COTA to pursue system improvements that the community needs.

COTA Vision 2020

In February 1999, COTA, working in partnership with the Mid-Ohio Regional Planning Commission (MORPC), released *Vision 2020: Transportation for a Great Community*. This long range plan was designed to address the current and projected mobility needs of the Central Ohio area through the year 2020. The major service assumptions upon which the plan was based include: expansion of transit services into the growth areas of COTA's service district; provision of improved intra-suburban and inter-suburban services; expanded reverse commute services which link center city workers to new employment centers around I-270; significantly enhanced transit services for disabled individuals who cannot access the fixed route services; implementation of new transit services which remove COTA's vehicles from the congested highway network (e.g. Light Rail, Bus Rapid Transit and Commuter Rail); and, implementation of Intelligent Transportation Systems (ITS) Technologies to facilitate the movement of COTA's buses on the highway system.

COTA is positioning themselves to implement Vision 2020. The Federal Transit Administration has rated the North Corridor (also called "First Corridor") Light Rail Project as "Recommended" on each of three New Starts Submittals. These recommended ratings will make COTA eligible to receive federal funds for 50% of the capital cost of the project. COTA has also presented the North Corridor LRT project to the Ohio Department of Transportation TRAC committee. ODOT has indicated that it would be reasonable for COTA to request 25% of the Light Rail project cost from the State of Ohio. The receipt of federal and state capital assistance on the North Corridor LRT line would be contingent on COTA securing the local capital share and operating funds for the project. In addition to the rail project, COTA will need to increase its current sales tax by .25% in order to implement Vision 2020.

Bus Expansion

The major bus service enhancements included in Vision 2020 include: enhanced span of service and frequency of service on existing routes; expanded reverse commute express service and neighborhood circulator services; and, dramatic increases to crosstown service in order to better link suburban communities and provide feeder service to the proposed rail lines. In addition, COTA would like to implement demand responsive dial-a-ride service as part of its small bus circulator services. These services would be focused on its transit centers, and would be provided primarily in the off-peak time period. As part of Vision 2020, COTA will work to streamline its express bus service by minimizing bus stops and focusing service at the park and rides.

Project Mainstream

Vision 2020 will continue to make service to the disabled community a very high priority. The Project Mainstream Program will nearly double bus service hours during this time period. COTA will continue to maintain countywide coverage to accommodate non-ADA trips. As part of Vision 2020, there will be closer coordination between COTA's fixed route and Project Mainstream services. As an example, a Project Mainstream vehicle could be dedicated to a suburban area and provide a high level of feeder service to a rail station on transit center. The disabled rider could conveniently transfer to a rail vehicle or fixed route bus line in order to complete their trip. This type of coordination will greatly enhance the convenience and flexibility of COTA service to the disabled community.

Rail

Based on public input received during the Vision 2020 planning effort, COTA decided to further investigate the feasibility of passenger rail service in the priority North Corridor. As a result, COTA and MORPC completed an update to the 1995 Major Investment Study (MIS) in 2001. After extensive public meetings, this analysis identified the Light Rail Transit (LRT) and Expanded Bus Service option as the most cost-effective alternative. This alternative would utilize existing rail freight rights-of-way which parallel I-71 North from the downtown to Lazelle Road. The analysis examined the following LRT alignments in detail:

- existing railroad rights-of-way from Lazelle Road to the downtown where the line would access High Street via Goodale Street and extend to Mound Street;
- use of existing railroad rights-of-way from Lazelle Road to 18th Street where the line would access the downtown via Fourth and Summit Streets and Goodale Street, and extend down High Street to Mound Street.

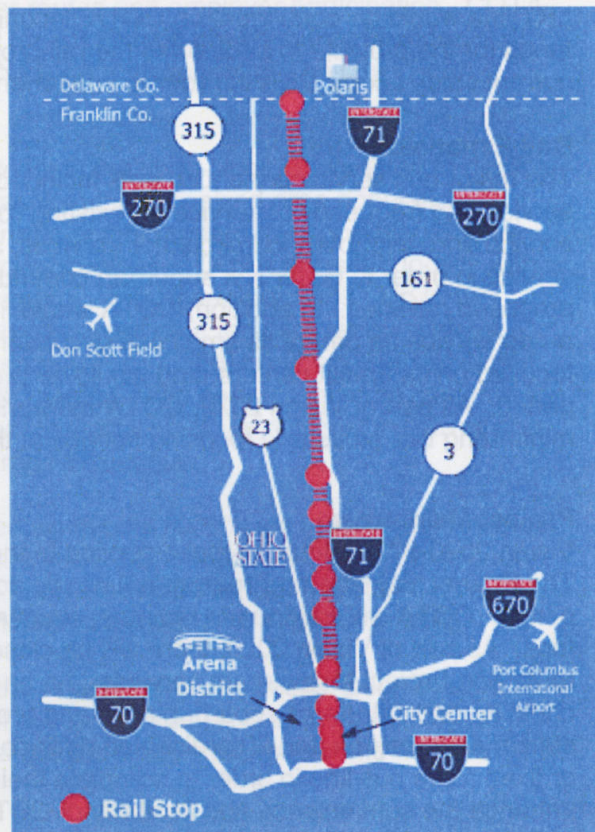
A separate Regional Rail Freight study was conducted in parallel with the MIS Update in order to identify a strategy for making available the railroad rights-of-way necessary to construct the LRT alternative. As part of this process, COTA and the consultant team conducted numerous meetings with the CSX and N&S Railroads.

The COTA Board of Trustees selected the LRT/Expanded Bus Service Alternative as the Locally Preferred Alternative (LPA) for the North Corridor MIS Update at the May 23, 2001 Board meeting. In August of 2001, COTA submitted the New Starts Submittal for the North Corridor Light Rail Project. The Federal Transit Administration (FTA) evaluated the project and gave it a 'Recommended' rating. This favorable rating allowed COTA to proceed into the Preliminary Engineering/Draft Environment Impact (PE/DEIS) phase of the project. In August 2002, COTA submitted the annual update to the New Starts Submittal for the North Corridor Light Rail Project. FTA again rated the project as 'Recommended'.

COTA initiated the PE/DEIS phase of the North Corridor LRT project in June of 2003. It is estimated the PE/DEIS process should be completed by March of 2005.

In conjunction with the LRT analysis, COTA, MORPC and the City of Columbus have partnered to produce the following Transit Oriented Development (TOD) studies since 1999: Railroad Corridor

Figure 12: North Corridor Light Rail Line



Preservation and Transit Oriented Development (including a model TOD zoning overlay ordinance); Transit Oriented Development Education; and Transit Oriented Development Regional Demonstration Project. These analyses lay the groundwork for the successful development of LRT stations in the North Corridor and at station sites in the remaining seven rail corridors. Specifically, the adoption of the TOD model ordinance by the affected municipalities will facilitate higher intensity development at proposed station locations, and thereby generate additional operating income and ridership for COTA. The resulting development infill at the proposed rail station will also generate additional tax revenue for the municipality.

As part of Vision 2020, COTA has determined that the North, Northeast and West/Northwest Corridors would be best suited for light rail transit development. It is assumed that the Northwest, East, West, Southwest and Southeast corridors would be developed as commuter rail projects.

In addition to interest in light rail, over the years there has been much interest on the part of ODOT and Licking County for commuter rail service between Newark and Columbus. Many Licking County residents commute daily to Columbus for work and shopping purposes. In addition, with the limited opportunities for additional capacity improvements on roadways within the east corridor, this rail line has the potential to ease congestion in the corridor by providing a viable option to using I-70 and parallel roadways. These travel and infrastructure characteristics and opportunities have prompted ODOT to investigate commuter rail as a viable commuter option. The agencies interested in the rail connection between Franklin and Licking counties have strategic positions toward making the rail connection a reality. The Ohio DOT owns this rail right-of-way and the Licking County commissioners have subsidized COTA transit trips between the two counties. The need for a transit commute option for those bound for the Columbus downtown has been demonstrated.

In Vision 2020, COTA investigated a diesel-powered commuter rail option in the Panhandle right-of-way. The easternmost terminus used in the study was the AT&T complex beyond I-270 in Franklin County. This truncated study area resulted in ridership for the rail line of 2,000 riders per day in the year 2010. Rail service was studied only at a "sketch planning" level of detail at that time. Additional study of this corridor will be undertaken when interest in commuter rail returns.

Transit Centers

In 1995, COTA unveiled its bus expansion transit alternative that will dramatically expand transit throughout Franklin County. The bus expansion plan included the timed-transfer concept, which coordinates the arrival and departure times among COTA routes at major transfer points called transit centers. A transit center is the name that describes a transit focal point in a community or development. The basic function of these centers is to facilitate the transfer of passengers between transit routes, serve as a destination, or enable passenger pickup and drop off. These centers vary considerably in terms of size and activity. The transfer points also include a clustering of complementary activities such as convenience and service retail shops, laundry or dry cleaning establishments, restaurants and related services. Community resources may also be included at the transit centers, such as job training and childcare. Community college recruiting and training offices, health care facilities, or other services targeted for local residents can also be made available. The activities at the site in conjunction with

passenger transfers create concentrated activity nodes that serve as an anchor for the surrounding community and can help to revive struggling neighborhoods.

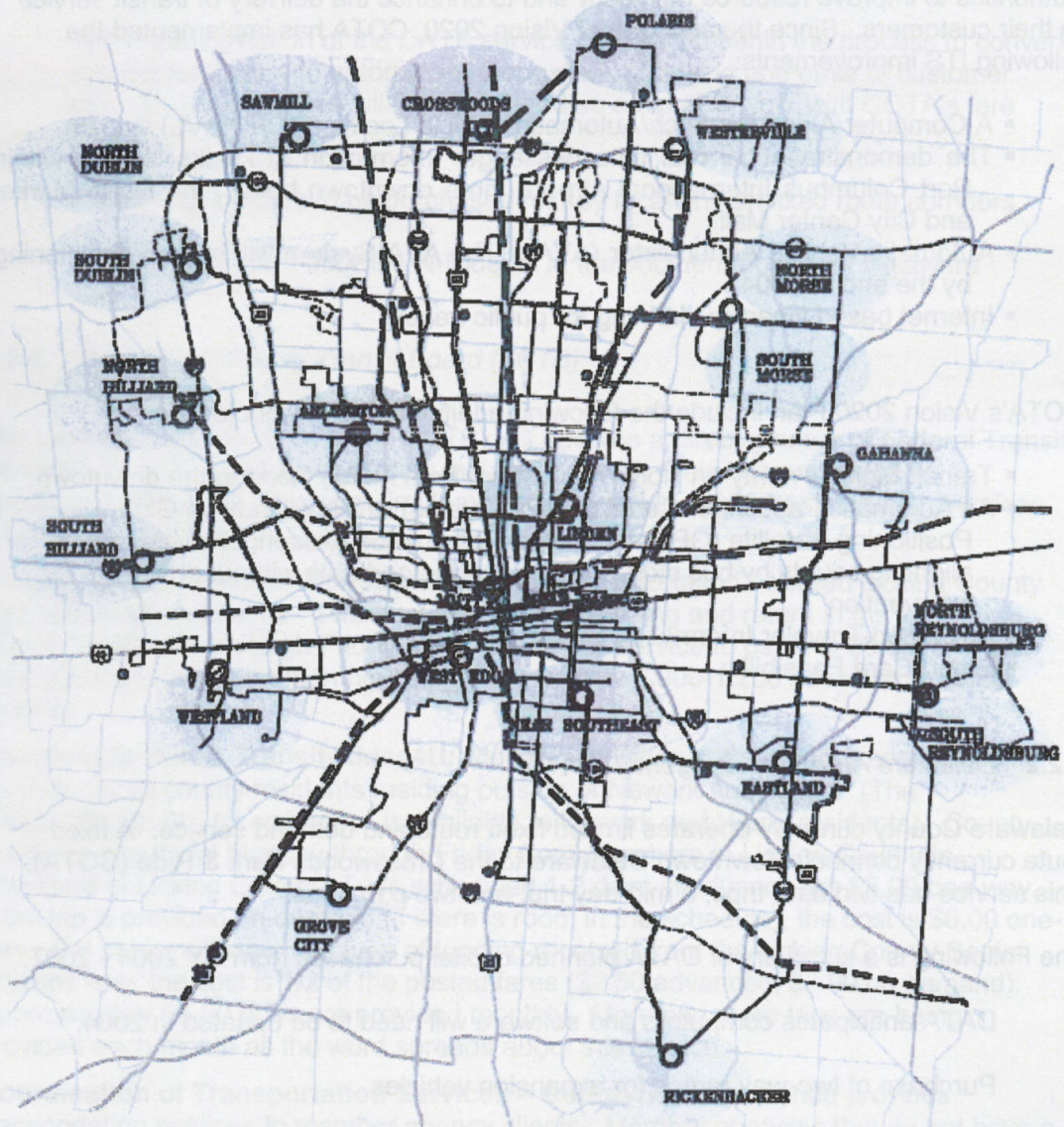
The transit and services mutually benefit from the shared location; without the transit component, access to the services is not convenient. Likewise, the transit will find success with linking these services to a single location, making the choice of transit more attractive to the consumer. People take transit if it is convenient and if there is considerable benefit to using transit.

Vision 2020 assumed the implementation of 14 suburban transit centers and 3 center city transit centers. Given the proposed redevelopment of the Kingsdale Shopping Center site, COTA staff believes that this would be an ideal suburban transit center location. After discussions with Upper Arlington City officials, COTA has added this site to our plan. COTA staff has also had extensive discussions with Columbus Urban Growth Corporation about their Westedge Redevelopment Project (formerly Sullivant Gardens). Staff believes that this proposed office and light industrial development would be an ideal center city transit center location. As a result, the latest New Starts Submittal now assumes a total of 19 transit centers and 22 neighborhood circulator routes (see Figure 13: Proposed COTA Transit Centers).

Currently, two transit centers are built and running: Linden and Easton. The Linden Transit Center serves a near north side neighborhood while the Easton Transit Center serves a major commercial area in northeast Columbus. COTA is in the process of building the Near East Transit Center at the corner of Champion Avenue and Main Street.

An integral element of COTA's Light Rail and Commuter Rail Plans is the development of the Downtown Multimodal Transportation Terminal (MMTT). This 115,000 square foot terminal, which would be located between Front and High Streets immediately north of Nationwide Boulevard, would accommodate: intra-city commuter rail and light rail; intercity passenger rail (i.e., Cleveland-Columbus-Cincinnati); ticketing, baggage and waiting areas; a 12 bay express bus terminal; overhead pedestrian walkway connections to the Franklin County Convention Center, the Convention Center Parking Garage and a proposed full service hotel; transit supportive retail uses; and safe auto, bicycle and pedestrian access. This \$26 million facility is currently in final design and is expected to open in 2005.

Figure 13: Proposed COTA Transit Centers



- LEGEND**
- LOCAL/CROSSTOWN BUS ROUTE
 - EXPRESS BUS ROUTE
 - TIER I POTENTIAL RAIL ALIGNMENT
 - TIER II POTENTIAL RAIL ALIGNMENT
 - PARK-N-RIDE LOT
 - TRANSIT CENTER



morpc
 Mid-Ohio Regional Planning Commission
 The information shown on this map is compiled from various
 sources available to us which we believe to be reliable.
 810-714-0200 007 2003

Intelligent Transportation System (ITS)

Intelligent Transportation System (ITS) technologies are used primarily by transit authorities to improve resource efficiency and to enhance the delivery of transit service to their customers. Since the adoption of Vision 2020, COTA has implemented the following ITS improvements:

- A Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system
- The demonstration of real time passenger information at kiosks located within Port Columbus International Airport, three downtown hotels, the North Market and City Center Mall.
- Automatic Vehicle Annunciator (AVA). The AVA System will be fully functioning by the end of 2004.
- Internet based itinerary planning for public transit.

COTA's Vision 2020 Plan include the following additional ITS Technologies:

- Transit Signal Priority on North High Street from Morse Road to the downtown.
- An Automatic Passenger Counter (APC) system which will rely on Global Positioning Satellite (GPS) technology will provide passenger boarding and alighting counts by bus stop, line, block, time and date without driver intervention.
- Advanced Traveler Information Systems (ATIS)
- Smart Card Feasibility

3.2.2 Delaware Area Transit Agency (DATA)

Delaware County currently operates limited fixed route and demand service. A fixed route currently connects downtown Delaware to the Crosswoods Park & Ride (COTA). This service has two a.m. trips, a mid-day trip, and two p.m. trips.

The Following is a summary of DATA planned capital purchases from CY 2004 - 2007.

DATA anticipates computers and software will need to be updated in 2004.

Purchase of two-way radios for expansion vehicles.

In 2005, purchase maintenance facility equipment to be used in conjunction with the Delaware County Board of Developmental Disabilities joint maintenance effort.

In 2006, begin to install bicycle carriers on all fixed route vehicles for customer convenience.

An automated vehicle locator system installed on all vehicles for efficient use of scheduling and safety. This system will be used in conjunction with the other systems anticipated for other Delaware County vehicles such as EMS and sheriff cruisers.

In 2003, a ballot initiative was put to the voters of Delaware County to expand service. The effort failed and plans for expansion are on hold pending the identification of new resources.

The implementation of the DATA service plan would begin the process to convert manual fareboxes to automated fareboxes for tracking and ease of customer use. These fareboxes will be purchased so as to also work with COTA's fare media.

Passenger shelters to be purchased for key locations on fixed route corridors.

Construction of a Park/Bike-N-Ride lot in the southern portion of Delaware County.

3.2.3 *The Licking County Transit Board (LCTB)*

The Licking County Transit Board (LCTB) will become a direct grantee of Federal Transit Administration (FTA) funds beginning in January 2004. This has presented an opportunity for the LCTB to plan, implement, and provide public transportation services on a long-term basis.

Commuter Bus Service: This service provides transportation between Licking County and downtown Columbus. Two buses run in the morning and return in the late afternoon, Monday through Friday. The cost of this service to users is \$3.50 for a one-way trip or \$120.00 for a monthly pass. Approximately 900-1,200 rides are provided monthly.

Countywide Public Transit-Rides4U: Rides4U provides curb-to-curb transportation services for all county residents residing outside of Newark and Heath. (The Newark/Heath taxi token service is available to Newark and Heath residents). County residents can travel Monday through Friday from anywhere in Licking County to anywhere in Licking County. Trips scheduled 1-2 days in advance are \$5.00 one-way. If the trip is provided on-demand (if there is room in the schedule), the cost is \$6.00 one-way. For senior citizens, because of funding received from the Licking County Senior Citizens levy, the cost is 1/2 of the posted fares (\$2.50 advanced, \$3.00 on demand). Approximately 60-90 rides are provided monthly. More and more trips are being provided each month as the word spreads about this service.

Coordination of Transportation Services – Countyride: Countyride provides transportation services to member agency clients. Member agencies that do not have a transportation department can request transportation for their clients from Countyride. The posted fares for this transportation is \$10.00 (Newark & Heath); \$20.00 throughout Licking County; and \$40.00 to contiguous counties for medical appointments. The fares are either offset by the agency making the referral, the agency providing the trip if funds are available, or by the client transported. Approximately 3,000 - 3,500 rides are provided monthly.

3.3 Alternative Modes

3.3.1 *Ridesharing*

The RideSolutions Program (formerly known as the Commuter Assistance Program) is committed to the national objectives of energy conservation, improved air quality, reduced traffic congestion, and lower commuting costs by offering ridesharing services in an 11-county area. Since its inception in 1980, RideSolutions has assisted over 33,000 commuters.

Ridesharing helps in keeping single-occupant cars off the road, thus reducing vehicle miles traveled (VMT). This helps in improving the ambient air quality by lowering the emission of harmful pollutants in the air (ozone level and particle pollution), hence the quality of life in the region, especially for children and elderly people.

Three main services: ridematching, VanOhio Commuter Vanpools, and a guaranteed ride home program, are offered to the commuting public, most popularly through promotions with major employers.

Ridematching Service

Using a computer-based ridematching system, RideSolutions provides applicants with a list of commuters who have similar work hours, home and work locations and are interested in joining a carpool. Individuals' home addresses remain confidential. The comprehensive rideshare matchlist includes carpool, vanpool, guaranteed ride home, COTA and park-and-ride information, along with suggestions on forming an arrangement in one package.

To receive a personalized rideshare matchlist, commuters can either complete an application displayed at employer and community sites throughout the 11-county service area, register through the toll-free rideshare hotline (1-888-742- RIDE), or complete an application via the worldwide web at www.morpc.org. Over 50 percent of central Ohio commuters ridesharing through RideSolutions obtain information from their employers.

VanOhio Commuter Vanpools

VPSI, Inc. provides vanpool services throughout central Ohio and is the largest third-party vanpool provider in the United States. It has built its reputation through effective and professional delivery of services for over 18 years. The Ohio Department of Transportation (ODOT) sponsors VPSI in Ohio, called the VanOhio Commuter Vanpool Program. RideSolutions has been marketing the VanOhio Commuter Vanpool Program to central Ohio commuters since 1993, and the area's total vanpool fleet has increased eleven-fold from 3 to 38 vans in operation during that period.

There are two different ways a vanpool can be organized. Participation can be agreed upon based on a 30-day contract involving volunteers commuting from one location (home) to another location (work) daily. Many times these "traditional" vanpools are transporting commuters longer distances, 20 or more miles one way to work. It is a safe, economical and a convenient alternative to driving alone. Groups of 9 to 15 can enjoy riding together each day in a luxury passenger van. Parking, vehicle lease, maintenance, insurance and gasoline costs are shared in one reasonable monthly fee. Vanpool drivers pay no monthly charge and have the benefits of personal use of the

vans evenings and weekends. Vanpools are organized based on the proximity of where people live and work, making this a desirable option.

The second fashion of organizing a vanpool is appealing to employers and employment agencies, especially in the wake of welfare reform and workforce development initiatives. Vans are available under longer-term lease arrangements with company or organizational sponsorship. There are a number of possibilities under which the van can operate, such as shuttling employees to work sites throughout the day and operating with a paid driver. Maintenance contracts and vehicle insurance are negotiable and personal lease quotes are provided by VPSI within 48 hours of request. Within the last year, RideSolutions has organized over twelve vanpools sponsored by companies, employment agencies and social service organizations under this type of agreement.

Guaranteed Ride Home Program

One of the obstacles to ridesharing or taking the bus is the fear of being stranded in case of an emergency. The Guaranteed Ride Home (GRH) program is an insurance policy for such situations. It takes the worry out of commuting by providing participants a taxi ride home from work. To be eligible, commuters must carpool, vanpool or ride COTA and be at work when the emergency or schedule change occurs. Registration entitles commuters up to four taxi trips home per year at 90 percent reimbursement plus a 15 percent gratuity. GRH is available to commuters who live and/or work in RideSolutions' 11-county service area. There is no fee to register, however commuters must enroll to utilize the program. Since the service was implemented in 1992, over 7,500 commuters have registered.

Marketing Strategies

The primary method of promoting RideSolutions is through outreach with employers. This promotion is accomplished through material dissemination, rideshare open houses, employee transportation surveys and cluster analyses.

- **Material Dissemination**

RideSolutions has selection of materials that are supplied to employers for employee distribution, including an introductory rideshare piece, a GRH flier and a vanpool brochure. All the literature has perforated applications for interested employees to apply for additional information. RideSolutions also has a selection of posters to display at work sites and provides articles to include in employer in-house newsletters.

- **Rideshare Open House**

The rideshare open houses are excellent opportunities to promote commuter options at work sites. Open houses provide employees information on the various alternatives to driving alone, updates on construction projects and up-to-date rideshare incentives. RideSolutions and COTA representatives are present to answer questions and offer giveaways and promotions for the events. This has proven to be a successful method of reaching out to the customer at the work level. RideSolutions traditionally organizes a minimum of five rideshare open houses per month.

- **Employee Transportation Surveys**

RideSolutions has developed a comprehensive survey and reply card utilized by area employers for the employees. The survey allows interested employees to reach RideSolutions regarding ridesharing and the results highlight employees' transportation patterns and needs.

- Cluster Analysis

The cluster analysis is a way for employers to determine the likelihood of forming vanpools for their employees. RideSolutions requests a dBase format file of information on the employees including names and home addresses. From this information, the employees are clustered together in groups of potential vanpools based on their home addresses.

Evaluation Measures

As part of the RideSolutions program, an evaluation element was introduced in 1994 to measure the benefits of the program. According to the most recent report published, for every dollar the rideshare program spent during 1996, commuters who formed ridesharing arrangements with RideSolutions assistance save \$6.44 in commuting costs. Program participants enjoyed increased savings of more than 50 percent when compared to 1995's cost-benefit analysis of \$2.62 saved for every dollar RideSolutions spent.

The cost-benefit evaluation method is used to analyze the effectiveness of RideSolutions' rideshare services. Each spring a cost-benefit analysis of the program is completed, and an actual figure is calculated. In order to determine the cost-benefit ratio, RideSolutions divides the savings realized by rideshares in the total population of the rideshare database by the amount of money the program spent during the year. The commuters' savings are based solely on reduced automobile operating costs and excess depreciation.

While the costs of operating RideSolutions' programs and services are easily quantified, the benefits derived from its services are less easily measured. To complete a quantifiable approach of looking at the benefits, the analysis focused on the commuters who rideshare and the financial savings they incurred personally by not driving alone. This figure was then compared to the cost of forming the ridesharing arrangement itself.

In addition to calculating the annual cost-benefit figure, biannually a formation rate is determined as part of the commuter participant survey. The carpool formation rate was formulated by asking the question, "How do you currently commute to work?" to the sample and applying the results to the entire rideshare database population. The most recent commuter participant survey indicates a 15.10 percent carpool formation rate. The vanpool formation rate is determined by using the actual number of commuters who participate in the service. The most recent calculation suggests a vanpool formation rate of 9.66 percent.

The RideSolutions Program's Commuter Participant Survey and Cost/Benefit Analysis methodology has won international awards. RideSolutions received merit awards for research and new technology for two consecutive years from the Association for Commuter Transportation. The Transportation Research Board (TRB), which has also recognized the methodology for two straight years, has published the paper

summarizing the methodology. It is located in TRB Record No. 1598, Transportation Demand Management and Ridesharing.

3.3.2 Car Sharing

Car sharing is a revolution in personal transportation - mobility for the 21st century.

About 75% of North Americans live in cities. Many people simply don't drive enough to justify the expense and hassles of owning a car - yet can't give up the freedom of driving a car when they want to. This is becoming even truer in central

Ohio. As congestion has grown and values have shifted toward traditional style living, many residents of Columbus are seeking lifestyles free of traditional commute patterns and choose to work and live in places that establish better options. Still, it is difficult for many residents to give up driving all together. More and more, a need for flexible automobile options is being recognized. Car sharing can provide this flexibility; instant-access to a network of cars throughout the city, 24 hours-a-day, paying-per-trip, without commitment or inconvenience.



Car Sharing Reserved Parking CarShare Portland, OR

Transportation is the life-blood of our economy, and yet, our fast-growing region is facing more and more congestion. Car sharing can establish a needed link in our transportation system. The most basic enticement of vehicle use is vehicle ownership. Car sharing helps people prioritize vehicle usage by having to literally pay as they go. Some would contend that this is a burdensome requirement, but for an economically conscious individual this is a more hands on way to manage transportation costs.

MORPC Car Sharing Survey

Much of the Columbus area is typified by development patterns and a lack of facilities for non-motorized travel that make automobile use necessary for many trips. There are also many individuals and households who, by choice or necessity, do not own vehicles. Car sharing provides a means of bridging the gap between travel needs and transportation availability, reduces overall vehicular use, and lessens the financial burden of transportation on individuals and households. With car sharing, individuals and households are encouraged to use transit and non-motorized modes to fulfill routine and convenient travel, such as commuting and neighborhood shopping. However, where transit and non-motorized modes of travel cannot reach important destinations, car sharing can be a solution.

Because car sharing supports, and is supported by, other modes of travel, a car sharing program is most effective when implemented along with transit and non-motorized travel improvements. However, by reducing the financial investment and at-the-doorstep convenience of personal vehicles, car sharing can, in itself, result in a variety of public benefits due to a decline in overall vehicular use: increased health and air quality,

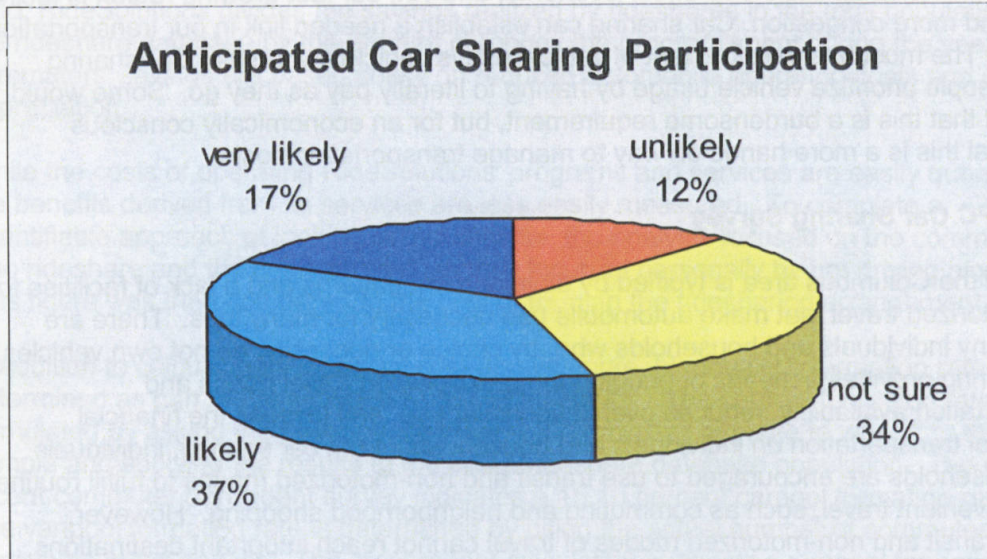
reduced infrastructure burden, and reduced traffic congestion. The time is right for Columbus to explore car sharing as a means to improve its transportation system.

MORPC Research

- MORPC staff attended the 2001 North American Shared Car and Station Car Conference in Atlanta; information was gathered about car sharing programs around the country. Included in this information were descriptions of various vehicles, technologies and organizational arrangements, as well as summaries of the typical demographics of car sharing program participants.
- MORPC staff examined census information for selected census tracts in Franklin County to determine where favorable demographics may exist based upon the demographic information gathered at the national conference.
- MORPC staff developed a research survey to ascertain the possible level of interest in a car sharing program, and to examine the travel behaviors and demographics of individuals who identify themselves as likely to participate in a car sharing program.
- MORPC staff distributed the research survey at the RideSolutions booth during the 2001 Simply Living Conference at OSU, and presented the potential of a car sharing program to the Clintonville Area Commission in early 2002.

Sixty-three respondents in the Clintonville area contributed a sense of the climate for a potential car sharing program in the community

Figure 14: Anticipated Car Sharing Participation



Additional research is needed to determine the specific features of a car sharing program desired by a local neighborhood, identify financing for a pilot program, and determine the best organizational arrangement for long-term program operation.

Car sharing could become an important option in central Ohio. While not a magic bullet to solve traffic and air quality problems, especially commuter-related issues, it is an

important new tool that can deliver significant benefits quickly and potentially from the private sector.

Car Sharing Statistics (from the Car Sharing Network)

1 shared car replaces 6+ individually owned cars

- Members giving up a car when they join - **15%**
- Members not buying a new one because they joined - **25%**

Car sharing increases transit usage:

- Members using Transit **MORE** - **27%**
- Members using Transit **LESS** - **7%**
- Trips made by transit **BEFORE** joining - **35%**
- Trips made by transit **AFTER** joining - **53%**

Car sharing increases other forms of travel:

- Members biking/blading **MORE** - **25%**
- Members biking/blading **LESS** - **8%**

People drive less

- Average driving reduction, former Car owner - **72%**
- Average driving reduction, all car sharing members - **55%+**

Misc. Stats

- The average car is driven just 66 minutes a day
- Household income spent on cars:
 - 1998 - 14.8%
 - 1990 - 13.2%
- Number of cars made-but-NOT-SOLD in 1998: 20,000,000
- Number of people who could share these unsold cars: 300,000,000

Car sharing is a growing trend. In the United States, there are already 68 different communities that have car sharing or are in the planning stage for car sharing. This includes over 18,000 members sharing 1,000 automobiles.

3.3.3 Bike Sharing

Bike sharing is another innovative idea for urban transportation. Similar to car sharing, bike sharing allows flexible short range transportation options for an urban or dense setting. A community bike program comes in several different forms. The basic premise is a collection of bicycles for the community to use for transportation, exercise, and entertainment. Much of the information in this section is drawn from *Building an Automated Community Bike Program Project Summary* by Jared Benedict (Hampshire College, 2001)

Collected bicycles are "owned by everyone and no one." They are fixed up and released into the community for

Biking for recreation and commuter transportation decreases congestion and increases activity levels

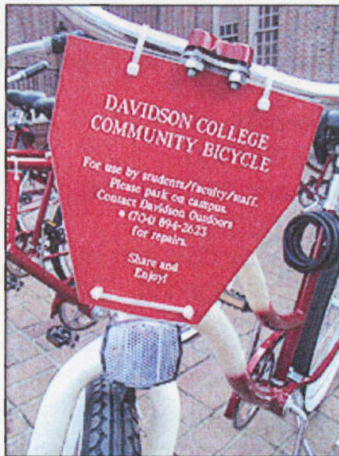


anyone to use. A user could happen to come by one, hop on, ride to a destination and leave it there for the next person. The bicycle could go all day without stop.

In theory, the idea is wonderful, in practice the program is often plagued with problems. The most serious problem is accountability. While most community members will act responsibly, it only takes a few individuals to quickly deplete a fleet of bikes. In very basic types of community bike programs, there is almost no individual accountability for users of the system.

The issue of individual accountability has been the focal point of several derivative community bike programs for the past few decades.

The first well documented community bike program implementation was in Amsterdam, Netherlands in the 1960's. The Provo Group (radical anarchists) conceived of several concepts, including the "White Bicycle Plan." The proposal called for closing off the center of the city to motorized traffic, and in its' place distribute 20,000 white bicycles free for anyone to use. The group and their plans received international exposure due to police action taken to prevent the group from accomplishing the goal. This incident likely was responsible for sparking the interest of others who attempted to implement similar community bike programs around the world.



**Red Bike Program –
Davidson College in
Davidson, NC**

Since the sixties, dozens of community bike programs have been implemented, many of which follow the same principle as the original, without political conflict. Often programs have failed due to a number of reasons; bikes were stolen, vandalized, thrown in rivers, and disassembled for parts. These common problems have led to some more sophisticated systems.

With over 40 years to reflect, and new advances in technology, it is now possible to implement a community bike program which is even more convenient for community members, but allows the program to implement accountability at an individual by individual level.

The latest automated community bike programs are similar in concept to a public library. With books, there is no need for every individual to have a vast collection of their own when that individual will only use the book for a short amount of time. Both, individually owned books and individually owned bicycles (and other vehicles for that matter), spend the majority of their useful lifespan unused; books gathering dust on a bookshelf, bikes often gathering dust in a garage. Even a bicycle, or a car, which is used every day to commute to work, spends a majority of the day locked and idle. Public libraries have addressed the issue by letting any community member check-out a book for a predetermined length of time. The person who signs out the book can bring the book anywhere, and do anything with it they please. They are, however, held individually responsible. If the book is returned late, damaged, or never returned at all, that individual must suffer the consequences of their actions.

Purpose of Community Bike Programs

While individual accountability is the feature which makes a community bike program sustainable, there are several reasons to actually implement one in a community:

- Provide a viable alternative method of inter-community transportation.
- Provide transportation which does not require the individual to follow a specific schedule like other means of public transportation.
- Offer a complimentary method of transportation to existing public transport (Buses, Subway, etc.)
- Reduce privately owned bicycle theft – hundreds of thousands of bicycles are stolen every year. The two most popular reasons for theft are to sell the bicycle, or convenience theft, where the thief simply wants to quickly get across town. Community bike programs can provide an alternative to convenience theft.
- Reduce traffic congestion.
- Support community development by including the community in the program.
- Increase interaction of community members by getting them out of their cars.
- Improve the health of community members.
- Increase community distinctiveness - A community bike program makes your community distinct and memorable. It provides an opportunity to increase tourism. It's also a way for tourists to get to know your community.
- Support traditional "village" communities. Prevent sprawl.

There have been several different identified designs for Community Bike projects (Data from Community Bike Project – www.communitybike.org).

Anarchic Program

The most basic type of community bike project uses donated bicycles, which are brought to working order, usually painted a bright or distinct color, and simply released into the community. Fairly easy to get going, anarchic systems require almost no infrastructure or real budget to start; community members donate their unused bicycles for free. The program requires responsible oversight and coordination, best if spearheaded by an active advocacy group or non-profit organization.

Library or Lending - check out program

Checking out a bike like checking out a library book. Bike can be kept for longer durations (weeks or even months at a time), giving riders time to get familiar with riding it. A liability form should be signed at checkout, keeping risks low. Bikes may be recycled or new in the fleet.

Co-op or Club Program

This type of project makes bikes available to a "club" or defined group of individuals. For example, by paying a club fee you will be given a key or combination which is used to unlock bicycles. The bicycles are only available to people in the group.

Locking Rack Program

In response to problems which have plagued First Generation projects, slightly more advanced programs have popped up that use special locking racks. The system works similarly to systems found with shopping carts at grocery stores. The user deposits a coin in the lock, and the bicycle is unlocked. When the bicycle is returned to one of the racks, their deposit is returned. This program can be difficult

because there is not a significant incentive for users to return the bicycle in a timely manner, or at all.

Hub Program

This type of program uses a Low-tech answer to bringing individual accountability. Non-Automated "Hub" programs bring individual accountability to the program through means of checking out a bicycle from a human attended hub. Users typically must sign up and get a program identification card. They then visit any of the designated hubs around the community to sign out a bicycle. The hubs are usually at businesses, shops, churches, youth centers, bike shops, libraries, etc.



**Adshel (subsidiary of Clear Channel)
Commercial Electronic Bike Sharing Facility**

Computerized Check-Out

A computerized check-out system is the latest and most advanced type of community bike program. There are a couple of similar themes that are being developed and used, which allow users to check-out a bicycle by using personal identification. Each bicycle is locked to a special rack. Users swipe an identification card, the user is identified, and a bicycle is unlocked. The person, and bike ID, are entered into a database. These programs can be integrated with transit and other modes by using smart cards.

Bike sharing represents an opportunity to complement other demand reduction strategies. Transit-oriented development, college campuses and urban centers all have qualities that could benefit from development of bicycle programs. Efforts to encourage bike sharing should be made as new sustainable development projects are pursued.

3.4 Past and Current Projects

3.4.1 *TCC and Mobility Management*

The Columbus Area Transportation Coordination Program (CATCP) was created to assist in the planning, coordination and implementation of an efficient transportation system to serve Franklin and surrounding counties.

This program was especially relevant because of the welfare reform efforts, continued suburbanization, and the region's low unemployment rate. Transportation coordination was identified as a practical strategy to stretch the limited local transportation resources of various agencies such as CMAAO, MR/DD, and Franklin County Job and Family Services, as well as COTA.

Phase one of the project was successful in providing the opportunity for interagency communication, which is the first step in creating a cohesive collaborative program. In phase two of the program, the organizational framework, flow of information exchange among transportation providers and funders, and managing agency format, were key tasks for attaining a coordinated system. One significant result of phase two was the

designation of COTA as the region's mobility manager by CATCP and MORPC. As such, COTA is responsible for taking the lead in coordinating transportation resources across Franklin County.

In 2000, two reports were prepared for CATCP analyzing the opportunities for transportation coordination and describing a plan for implementing changes. Early in 2001, CATCP was reformulated into the Transportation Coordination Committee (TCC) of MORPC. In its new form, TCC was responsible for continuing the dialogue among transportation providers and funders, and helping COTA implement its regional mobility management program. In early 2004, COTA created a Mobility Governance Board to take on the advisory role that had been served by TCC, and more closely coordinate the efforts of COTA with other transportation providers and funders. As a result, TCC is recommended to be dissolved, and its members, including MORPC, rolled into the new group.

3.4.2 The Transportation & Resource Locator

In 2000, MORPC responded to needs identified by the Columbus Area Transportation Coordination Program (see above: TCC and Mobility Management) and began development of a web-based GIS resource that houses data about community services and transportation options for Franklin County. In spring of 2002, MORPC completed development of the Transportation & Resource Locator ("The Locator"). This resource is available via the web for agencies and individuals who wish to analyze options for populations trying to make the transition from assistance to the workplace. The web-site (www.thelocator.org) is currently operational, although funding for maintenance and expansion has yet to be secured. MORPC will work to expand this resource and the experience from development to other GIS tools for the web.

3.4.3 Transit-Oriented Development

In 2001, MORPC continued its transit-oriented development work. In April of 1999, MORPC launched a project to prepare model legislation for the preservation of railroad corridors and encouragement of transit-oriented development (TOD) in central Ohio. The result of the project was a set of two reports completed late in 1999. The first report explained why rail corridors should be preserved and transit-oriented development encouraged. The second report followed on the first by applying its recommendations to two local case studies. It analyzed existing and future market conditions around two planned transit centers and illustrated the potential outcome and barriers to the application of the recommended plans.

By 2001 it was apparent that simply producing recommendations about how to undertake TOD was not sufficient to change local regulatory and development approaches. To improve the benefit of its previous work, MORPC undertook a two-prong approach of education and demonstration. The TOD Education project, sponsored by MORPC and Columbus, sought to reach a wide audience with a message about the benefits and opportunities of better linking development and transportation. This project resulted in a well-attended seminar targeted at development-related professionals, including developers, realtors, planners and architects. In addition, handout materials and a visual presentation were developed and presented to several local planning commissions.

The TOD Regional Demonstration project was created to test public opinion about travel and land use by demonstrating the application of TOD design principles to three different and distinct sites within the region. Public opinion was obtained using a focus group meeting structure with a diverse sampling of citizens. Three focus groups were facilitated with the intent of understanding basic mobility behavior, testing attitudes about conventional and traditional development patterns, and obtaining reactions to the application of TOD to a specific location. The project resulted in three case studies demonstrating potential TOD designs in three different types of areas: urban, developed suburban, and developing suburban. A final report presents both the case studies and the outcomes of the focus groups held in each of the three areas.

In general, there was positive support for development that provided an alternative to conventional development. Many participants in each group supported the examples of traditional development and TOD. However, it should not be surprising that the acceptance and support for the TOD concept varied by the degree of similarity that the participants' community shared with the concept. Although the support for TOD was quite positive when discussed in the abstract in all groups, some participants wavered when viewing how the concept could be applied in their community. Even so, it became clear that the focus group format provided for considerable exchange of ideas and opportunities for participants to openly disagree and hear different perspectives. On several occasions participants that initially held a strong opinion about an issue actually changed their mind, or at least became more open-minded. This suggests that if an informed dialog can be established in which TOD can be suggested as an alternative to conventional development, then larger community support for it could be expected.

3.4.4 Linden Area Traffic Management Plan

In 2002, MORPC was hired by the city of Columbus to conduct the traffic study in the Linden neighborhood, a large, older area of the city, northeast of downtown, that has a higher-than-average percentage of minority and low-income populations. A lack of automobile ownership leaves many of these residents dependent on transit access and local commercial services to meet their essential daily needs.

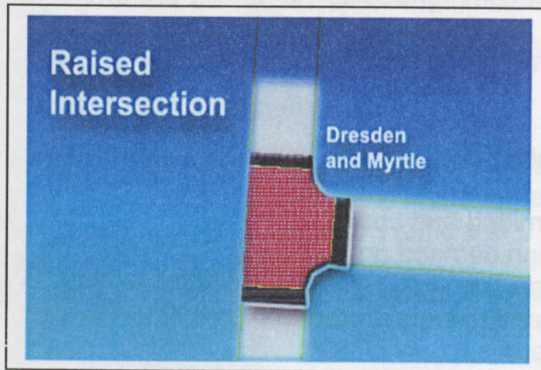
Unfortunately, a great majority of the surrounding region has developed to meet the needs of the motoring community and accommodate growing automobile use. Street design in Linden does not provide an attractive pedestrian environment and serves to move a large volume of traffic to and from destinations that are not within the community.



The paramount traffic issue for Linden is the conflict between vehicles and pedestrians throughout the study area. This study proposes a proactive strategy to address traffic as opposed to reactionary treatments which have addressed the locations where auto-pedestrian crashes have happened in the past. Working with the community has been an essential part of assessing the perceived dangers and generating ownership of the project results. The public process has included workshops and walking audits throughout Linden, an advisory group, open houses and a project website. Allowing

residents to define the characteristics of the street network helped in identifying appropriate traffic behavior in the community and establishing the core values and resources of the neighborhood. The outcome of this successful endeavor will help to restore prosperity to this older urban community.

Based on data collected in the field, input from various community meetings and their analysis, various recommendations have been made by the experts of the study group. At present, the project is in the concluding phases. A final report presentation to the city, and a community open house have to be completed. In addition, MORPC will be compiling the beginning of a traffic calming handbook for Columbus containing the process and experiences of the Linden project. All project components are expected to be completed in June 2004.



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3.4.5 Downtown Columbus Circulation Study

The transportation system is one of the most critical components to keeping downtown Columbus healthy; it contributes to establishing the ambience in which downtown workers, shoppers and visitors carry out their activities. However, the vast majority of these people do not live within the downtown, but travel to and from there on a daily basis. So, the transportation system must strike a balance between creating an atmosphere that is attractive and encourages people to work, shop, and visit downtown, while providing them with reasonably convenient access and parking.

The City of Columbus and ODOT are sponsoring a MORPC study of the downtown street system. This study will examine various downtown transportation projects (such as light rail and the I-70/I-71 study) and the city's goals to make downtown more livable so as to understand their combined impact on downtown traffic.

This study will describe the effects on traffic circulation of proposed changes that address the needs of those living in, working in, visiting and traveling through the area including the following:

- Converting some or all of the one-way streets to two-way streets.
- Transit in the downtown.
- Pedestrian amenities and traffic calming techniques.
- On-street parking.

The study is anticipated to be completed in mid-2004, in time to provide input into the ODOT I-70/I-71 South Innerbelt study, so that study's resulting downtown freeway changes will work with the other transportation and development plans downtown.

3.4.6 First (North) Corridor Light Rail Transit

The Central Ohio Transit Authority (COTA) in cooperation with the Mid-Ohio Regional Planning Commission (MORPC) assessed the feasibility of initiating new rail service in

the North Corridor (see section 3.2.1 for more details). The proposed 13-mile Corridor extends from downtown Columbus to the Polaris area, a major suburban development, and follows a path along Interstate 71 (I-71). The Study investigated the utilization of the current railroad right-of-way and a short segment on the Summit and 4th Street corridor. The North Corridor is identified in the COTA's Strategic transit plan, Vision 2020, as one of several potential rail corridors in the region. MORPC and COTA completed Vision 2020 in February 1999. A bus/rail option was recommended as the "locally preferred alternative" by the Advisory Group on April 19, 2001. The First Corridor Light Rail Transit project has received "Recommended" ratings by the FTA for the last three New Starts cycles.

3.4.7 Capital Region Energy Smart Community

Energy is changing – the way it is made, transmitted and used. Our changing lifestyles create an ever-increasing demand on energy supplies. There is increasing recognition continuing to expand our consumption of fossil fuel energy, and has great costs to our health, our natural world, and the long-term security of our society.



In January 2002, central Ohio responded to a call from Gov. Taft for communities across the state to collaboratively increase energy efficiency. Because of the strong relationship between energy and all of society's activities, especially transportation, MORPC was successful in pulling together a collection of partners in Mid-Ohio to become the Capital Region Energy Smart Community. The founding partners of this effort are: Central Ohio Clean Fuels Coalition, Central Ohio Transit Authority, City of Bexley, Columbus Public Schools, Global Action Plan, NiSource, and the Solid Waste Authority of Central Ohio.

Capital Region partners are involved in a variety of energy-related efforts from clean vehicular fuels to building upgrades, to landfill gas recovery. Together, these partners form a partnership unique in Ohio, and representative of a variety of energy activities.



Throughout 2002 and 2003, MORPC coordinated the partnership and helped raise awareness of its activities through creation of a website (www.capitalregion.org) and organization of a green building design charrette featuring Columbus schools. A video, *Building for Living*, was produced featuring the charrette and presenting energy efficiency and green building issues to the general public.

3.4.8 Central Ohio Clean Fuels Coalition

Since its formation in 2001, MORPC has been a member of the Central Ohio Clean Fuels Coalition (COCFC), and represented on its Board of Trustees. The organization, which grew out of a joint effort by MORPC and the Columbus Health Department, called Project CLEAR, is focused on promoting the use of cleaner, alternative vehicular fuels and the advancement of clean fuel technologies. Headquartered at the Ohio State University's Center for Automotive Research, COCFC is a registered non-profit, with a

wide representation of community and industry organizations, as well as individual members. COCFC is a designated U.S. Clean Cities member coalition and actively works with other clean city groups in Ohio. Most recently, the three Ohio Clean Cities coalitions (Cleveland, Cincinnati and Columbus) were awarded a grant from the Ohio Air Quality Development Authority to continue statewide outreach to large fleet owners. In 2004, the three coalitions will cooperatively build upon past work with both public and private fleets including schools, transit agencies, airports, municipalities, state agencies and trucking companies.

3.4.9 Regional projects

MORPC has undertaken several cross-jurisdictional planning projects in an effort to better coordinate transportation improvements among other goals. In 2002, MORPC began the Franklin-Delaware Traffic and Growth Management Toolkit Study. Initiated by the city of Columbus and funded by several local governments and ODOT, this project was intended to provide local decision makers with communication and development tools to help mitigate the negative impacts of growth. An outcome of this study was a concept idea called the Central Ohio Planning Exchange (COPE). COPE is intended as an internet-based information-sharing site, where local jurisdictions can check the status of local infrastructure and development plans, so as to better coordinate growth across the region.

MORPC's Regional Connections team has been holding discussions and interactive workshops throughout the region on growth and development challenges that cross jurisdictional boundaries. Through broad-based public involvement, the team is preparing four regional land use and transportation scenarios: one representing current development trends, and three alternatives showing different future development patterns. As of March 2004, the process has produced over 6,000 ideas by more than 1,500 stakeholder participants at 12 public meetings.