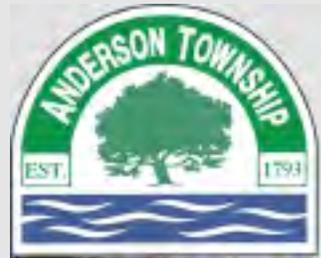


# beechmont corridor update study

Prepared for **ANDERSON TOWNSHIP**  
HAMILTON COUNTY, OHIO

November 2005



## KZF DESIGN

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<b>Introduction</b> .....	<b>1</b>
<b>Existing Conditions – 1996</b> .....	<b>2</b>
The Situation .....	
Joint Effort	
Task Force Membership	
Mission Statement	
Project Goals	
<b>The Plan - 1996 Findings and Recommendations</b> .....	<b>4</b>
Curb Cut Survey .....	
Traffic Volumes	
Traffic Operations	
Safety Conditions	
Access Management	
<b>Corridor Improvements</b> .....	<b>8</b>
Curb Cut (Driveway) Improvements.....	
Cross Access Between Adjacent Parcels	
Public Roadway Improvements	
Public Policy Changes	
<b>Implementation</b> .....	<b>12</b>
Approach.....	
Target- Beechmont Square	
Five Mile Intersection	
Asbury Road Intersection	
Pinnacle Development Connections	
Address Signage Program	
Landscape Plan	
Multi-Modal Improvements	
Vision Plan	
Utilities – Cinergy Feasibility Study	
<b>The Corridor Today – 2005</b> .....	<b>25</b>
Safety Situation	
Traffic volumes	
Congestion and delay	
<b>Future Plans - Where do we go from Here?</b> .....	<b>30</b>
Access Management Regulations	
Beechmont Median Type	
Driveway Closures	
Access and Frontage Roads	
Non-Traditional Projects and Issues	

# Introduction

In the early 1990's, Beechmont Avenue (SR 125) represented a classic example of an overdeveloped, poorly coordinated retail community typical of failed 1970's corridor planning - a cluttered, indistinguishable mass of signs, parking and pavement. Built to move traffic and provide access, it was performing neither task effectively. Congestion was exceeding LOS F, crash rates were nearly three times statewide averages and an alarming trend of increasingly vacant buildings was developing. Attempts to fix the problems had been made by the state, local officials and the business community itself. Nothing seemed to work.

In 1995, the Anderson Township Trustees partnered with the Anderson Area Chamber of Commerce to establish a Task Force with representatives from the business community as well as public agencies – local and state to address the corridor. Fund raising efforts by the Chamber, and local businesses were leveraged by matching Township funds and aided by an Ohio Dept. of Public Safety (ODPS) 402 Grant through the Hamilton County Engineer's Office (HCEO).

KZF Design, with technical assistance from the Ohio Department of Transportation (ODOT), HCEO and Anderson Township, began a yearlong planning and engineering study that produced the *Beechmont Corridor Improvement Plan (1996)* – with a heavy emphasis on access management, public involvement and congestion improvement projects. The study didn't recommend reconstruction of the entire corridor, but rather a number of smaller, site-specific improvements throughout the 3.5-mile length of the corridor within Anderson Township.

Implementation efforts began even before the publication of the study, but not the way originally envisioned. Once it became obvious that improvements did not fit within the confines of traditional project development methods, Anderson Township decided to try another approach. With a grant from the Ohio Department of Public Safety (ODPS), the Township hired a Safety Coordinator to “encourage” private access improvements and coordinate public efforts – engineering, enforcement, EMS and education. Over the past 10 years the Township with assistance from KZF Design, Hamilton County and ODOT has advanced a variety of improvements within the corridor, including:

- Improved/restricted access to several properties just west of Five Mile Road.
- Combined access, roadway widening and new traffic signal at the Asbury Road intersection.
- New turning lane and expanded signal operation at the Nagel Road intersection.
- Numerous new connections between properties to allow convenient access.
- New address number signs along the corridor to better identify business locations.
- Improved signalization timing recently implemented by ODOT.
- Ongoing studies of a number of access, drive closures and property connections.

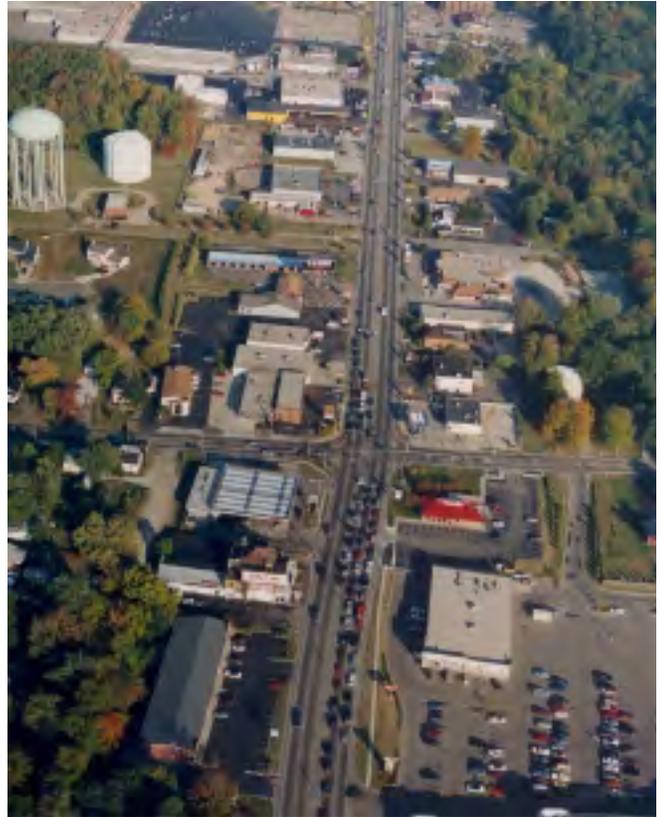
# Existing Conditions - 1996

## THE SITUATION

Beechmont Ave (SR 125) is a 5 lane urban arterial, beginning within the east side of the City of Cincinnati, extending east through Clermont, Adams and Scioto Counties. The project area is a narrow, heavily developed commercial corridor. Congestion and safety problems had been noticed for several years, but previous attempts to correct problems had not reached a significant measure of success. Motorists were complaining about safety and congestion, residents were complaining about access and image, and the business community was complaining about congestion leading to an alarming increase in vacancies along the corridor.

Field studies and traffic analyses were performed, confirming operating conditions below acceptable standards. Major capacity deficiencies were noted at 6 of the 8 signalized intersections, including three intersections that were operating at a Level of Service (LOS) F during the PM Peak hour.

The crash rate was over 8.5 crashes per million vehicle miles traveled – over three times the statewide average (3.76 crashes/mvmt). Crashes at 5 of the 8 signalized intersections exceeded the statewide averages. The Five Mile Road/Beechmont intersection was nearly three times the statewide average, and ranked as the worst in Hamilton County. A 402 Safety Study noted rear end crashes accounted for 49% of the total crashes within the corridor, well above the statewide average (30%). High percentages of rear end crashes are indicative of access conflicts, particularly with 1 driveway every 75 feet. Overall speed was not determined to be a primary cause, noted to be a problem in only 2% of the crashes.



Beechmont Ave./Eight Mile Road intersection

Several high profile businesses had recently moved or closed their doors, leaving vacancies at several large shopping centers. These vacant stores provided a key motivation to reverse this trend for residents and the business community alike, prompting a joint effort by the Anderson Township Trustees and Anderson Area Chamber of Commerce.

The public –residents, motorists and businesses - was very involved in the development of the plan. Previous efforts by the Township, State and business community had all failed to make significant improvements on their own, primarily because they did not involve cooperative efforts of all of the stakeholders in the community. At the insistence of local residents, this effort though, involved all stakeholder groups at every level. Residents, engineers, planners, business leaders and politicians were all involved at Task Force level, in technical analyses, implementation and in engaging input. The project team partnered with local media very early in the project, involving articles in the local newspaper, presentations on public access cable television, the township newsletter and public display.

Community input was obtained through countless public meetings, focus groups, the Task Force, staff discussions, the Chamber of Commerce, coordination with the Township's Transportation Advisory Council (TAC) and even individual meetings with key business leaders within the corridor. The project truly received input from all sectors of the community, and was awarded by the Ohio Chapter of the American Planning Association for its comprehensive public involvement.

### JOINT EFFORT

To guide the project, the Anderson Township Trustees partnered with the Anderson Area Chamber of Commerce to form a Task Force, made of representatives from all major stakeholders within the corridor. Fund raising efforts by the Chamber, were matched by the Township. This partnership by the Township and businesses within the corridor created a spirit of ownership and credibility that later proved important during implementation. Initial data gathering was funded by the Hamilton Co. Engineer, with an Ohio Dept. of Public Safety 402 Grant. The ODPS involvement with the 402 Safe Community Program helped the Township later secure a Safe Community Grant to hire a point person for implementation.

### TASK FORCE MEMBERSHIP

Anderson Township Trustees	Cincinnati Bell
Ohio Dept. of Transportation (ODOT)	Transportation Advisory Committee (TAC)
Hamilton Co. Engineer	Mercy Hospital
OKI Regional Council of Governments (MPO)	Hamilton Co. Sheriff Department
Anderson Chamber of Commerce/Local Businesses	Hamilton Co. Regional Planning Comm.
Anderson Twp. Fire and Rescue Department	KZF Design Engineering
Cinergy	

### MISSION STATEMENT

- Promote safer, more efficient access to businesses.
- Allow for the smooth flow of current and future commuter traffic.
- Create an environment that encourages residents and commuters to choose Beechmont Ave. as their shopping area.

### PROJECT GOALS

- Reduce safety hazards and bottlenecks.
- Improve signalization with emphasis on timing and additional controls, add additional right turns at major intersections and crossroads, and reduce left turns wherever feasible, to improve safe traffic movement and reduce driver frustration.
- Develop parallel access from one shopping area to the next, with ingress/egress to cross-streets wherever possible, to improve safety and reduce congestion.
- Consolidate curb cuts to improve safety and traffic flow, with identifiable shopping entrances.
- Improve traffic flow, identification of shopping areas, and ambiance through landscaping, improved signage, and building exterior enhancements.
- Document the improved levels of service, safety, mobility and overall traffic flow.
- *Leverage Capital Improvement Funds*

# The Plan - 1996 Findings and Recommendations

Beechmont Avenue (SR 125) is a five-lane urban arterial, with the center median marked as a two-way left turn lane, allowing vehicles to pull out of through traffic to await gaps in oncoming traffic to execute left turns. This median is striped as a designated left turn lane at all signalized intersections, and at major unsignalized left turn areas. There is a 5-foot shoulder between the edge line and the curb.

## **CURB CUT SURVEY**

A 1996 survey of Beechmont Avenue showed 286 driveways within the 3.5-mile study area, including 221 entrances to roughly 120 commercial developments and 65 residential drives - an average of a 1 driveway every 65 feet and 1.8 driveways per commercial development. This spacing results in vehicles turning onto and off of Beechmont Avenue at nearly any point along the corridor – all potential conflict points.

Most crash reports cited failure to yield, following too close and wet pavement as contributing factors. These causes are indicative of access related conflicts - vehicles slowing to turn in/out of drives, unexpected turning maneuvers, inordinate amounts of stops and increased delays. Clearly, motorists are not able to identify conflicts from these multiple access drives. A right angle crashes is easily attributable to access conflicts, but traffic backups behind vehicles attempting to turn left into a driveway can cause congestion and potential rear-end accidents upstream of the drive. Turning vehicles travel much slower than mainstream traffic, introducing additional congestion and potential rear-end or sideswipe accidents from backups or lane changing to avoid slower moving vehicles.

Many properties within the study area have two, three or even four driveways. Some even feature a “continuous driveway” with access the entire length of the property. These arrangements allow vehicles to enter/exit Beechmont Avenue all along the corridor, greatly increasing the impact of the adjacent properties on the roadway. In some cases, the road has become part of the parking lot circulation, drastically reducing capacity in these areas.

Studies by the Federal Highway Administration have shown capacity can be reduced by as much as 50% due to the effects of numerous driveways. The effects of this proliferation of driveways may be even more noticeable on highway safety; as at least 50-60% of all accidents are typically access related, including nearly all left turn and right-angle accidents and an estimated 90% of rear-end accidents.

## **TRAFFIC VOLUMES**

In 1996, traffic volumes had been growing at the aggressive rate of nearly 4%/year, increasing from approximately 22,000 vehicles per day (vpd) –1982- to approximately 35,000 vpd in 1994. These increases strained the Beechmont Avenue to capacity, increasing area congestion, crashes and delays. Area traffic increases are shown in Table 1. Existing traffic counts were obtained from several sources, including field counts by the Hamilton County Engineer’s Office, Ohio Department of Transportation (ODOT) and KZF Design. A summary of these volumes is shown on [Figure 15](#). Critical analysis periods include the evening peak hour (5:00 - 6:00 PM) and the morning peak hour (7:00 - 8:00 AM).

**Table 1  
 Area Traffic Increases**

Road	Section	Avg. Daily Traffic		Growth Per Yr.	2003 ADT	Current Growth
		1982	1994			
Beechmont Ave	Clermont Co Line	21,756	35,330	4.1 %/Yr.		
	West of 8 Mile Rd.	22,146	33,558	3.5 %/Yr.		
	East of Nagel Rd.	21,540	36,532	4.5 %/Yr.		
	East of Asbury Rd.	21,858	34,196	3.8 %/Yr.		
	West. of Wolfangle	21,934	37,857	4.7 %/Yr.		
	East of Five Mile	26,282	37,156	2.9 %/Yr.		
Five Mile Rd.	West of Five Mile	30,508	36,868	1.6 %/Yr.		
	N. of Beechmont	9,643	22,728	7.4 %/Yr.		
	S. of Beechmont	10,901	27,534	8.0 %/Yr.		
Asbury Road	S. of Beechmont	2,697	5,221	5.7 %/Yr.		
Nagel Road	N. of Beechmont	3,565	10,503	9.4 %/Yr.		
Eight Mile Rd	N. of Beechmont	9,048	12,209	2.5 %/Yr.		
	S. of Beechmont	3,280	6,554	5.9 %/Yr.		

**TRAFFIC OPERATIONS**

Capacity analyses were performed at all nine signalized intersections within the 3.5-mile corridor, as summarized in Table 2. A Level of Service (LOS) C is generally considered the target operation for new or upgraded facilities, while LOS D is commonly viewed as an acceptable operational standard. Analyses revealed several existing delays and safety concerns. The two most deficient intersections are the Five Mile and Eight Mile Roads intersections, with existing operations categorized as LOS D/E, with individual moves reaching LOS F. These intersections were also found to have the highest crash rates, at 2.5 and 2.0 crashes per million vehicles entering the intersection. 581 of the 904 accidents (64%) occurred at intersections.

**Table 2  
 1996 Signalized Levels of Service**

Beechmont Intersection	Accid. Rate	Northbound			Southbound			Eastbound			Westbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Salem	0.7	D	-	C	-	-	-	-	B		D	A	-
Five Mile	2.5	E	*		D	C	C	D	E		C	C	C
Forest/Mall	1.1	F	C	C	C	C		E	C		B	D	B
Wolfangle	1.2	C			F	C		F	B		B	B	
Asbury	1.3	F			D			A			*	A	
Service Merchand.	0.5	D			C			A	B		A	A	
Nagel	0.9	C			*			*	B		A	B	
Eight Mile	2.0	C	D		E	E		D	C		C	D	
Nordyke	0.4	D			C			A	B		*	A	

\* Oversaturated Conditions  
 Rate - Crashes/Million Vehicles Entering the Intersection

Lt: Left turn movement  
 Th: Through Traffic  
 Rt: Right Turn Movement

See Table 6 on p. 28 for 2003 Levels of Service

## SAFETY CONDITIONS

A “Corridor Safety Study” was commissioned in 1994 by the Hamilton Co. Engineer’s Office in cooperation with Ohio Department of Highway Safety. The results of this study showed an overall crash rate of 8.5 crashes/million vehicle miles (statewide average 3.8), including five of the nine signalized intersections which exceeded the statewide average of 1.0 crash/million vehicles entering the intersection. Crash rates at the Five Mile and Eight Mile Road intersections were more than twice the statewide average. Intersections with increased delays and high volumes of left turns reported higher crash rates, and an increasing violation of the all-red clearance at traffic signals was noted, particularly at intersections experiencing increased delays

The study analyzed all reported accidents from 1991 to 1993, as recorded by the Ohio Department of Highway Safety. This study found 904 crashes were reported during this period, 342 of which involved injuries. The majority of these were rear-end crashes (49% of the total crash and 69% of the injuries), typically caused by frequent turning movements. Another indication of turning movement problems is the substantial percentage of right-angle crashes, 41% compared to the 35% statewide average. These crashes are attributable both unsignalized turning movements as well as congested signalized intersections.

Excessive speed was reported as a probable cause on only 1% of crashes, compared to the statewide average of 8%. The safety study found the average speed on Beechmont Avenue was 36.5 MPH, with an 85th percentile speed of 42 MPH.

The study also found a direct relationship between the crash rate and number of curb cuts in a given section. The crashes were geometrically higher if the sections contained the “high traffic turnover” land uses such as restaurants and gas stations. Comparison between crash causes on Beechmont Avenue and statewide averages further indicate the access related causes, as shown in [Table 3](#).

**Table 3  
 Crash Causes on Beechmont Avenue**

PROBABLE CAUSE/CONDITIONS	BEECHMONT		STATE AVG.
	1994	2004	
Excessive Speed	1%	0.1%	8%
Failure to Control	17%	5%	37%
Failure to Yield	35%	24%	28%
Following too Close	47%	48%	27%
Weather/Light Conditions			
Wet Pavement	27%	25%	14%
Dark	17%	16%	20%
Accident Type			
Rear-End	49%	50%	30%
Right-Angle	41%	33%	35%
Loss of Control	10%	6%	35%

## ACCESS MANAGEMENT

The concept of access management is an attempt to coordinate the safe and efficient use of roadways while providing for the necessary vehicular access to adjacent land through comprehensive planning and responsible enforcement. This concept does not necessarily involve wholesale closing of driveways and access restrictions, but rather, it involves a comprehensive, *system-wide* approach to providing access to adjacent property, while maintaining the integrity of the roadway system.

Access control is an effective method for reducing congestion. Fewer, but better designed driveways can reduce the conflicts between turning and through traffic, meaning fewer accidents and reduced congestion. An increase in mainline roadway capacity also increases the ability for traffic to access the roadway from adjacent properties, increasing not only mainline traffic flow, but also accessibility. Shared parking areas and driveways can remove additional trips from the public street system further increasing available capacity.

Common access management techniques include:

Establishment of a Roadway Hierarchy	Service Roads or Drives
Signal coordination and proper spacing	Limit Conflict Points
Limiting of Speed Differential	Proper Driveway design & spacing
Spacing of median openings	Deceleration lanes for turning traffic
Raised medians to control left turns	Shared driveway/parking areas
Proper intersection spacing	Combined curb cuts
Public roadway improvements (turn lanes)	Private connections between adjacent parcels

The concept of access management is not anti-growth as many businesses fear. The reduction in access related congestion, improved intersection operation and reduced accidents is expected to substantially improved travel time along the corridor by reducing stops and slower moving vehicles. This reduction in potential vehicle conflicts and improvement in travel time results in tangible improvements as well as improved potential customer's perception of Beechmont Avenue.

Roadway capacity increases can be expected once system wide improvements are implemented. *Studies show increasing signal spacing and restricting left-turns can increase capacity of a primary arterial by as much as 50%, with corresponding increases in safety.* This 50% increase in capacity is similar to widening a four-lane roadway to six lanes, without the major property takes required of a major roadway widening project. In most cases, the impacts of closing driveways and modifying parking lots is much smaller than major widening and the required property takes of parking areas, buildings and possibly entire parcels.

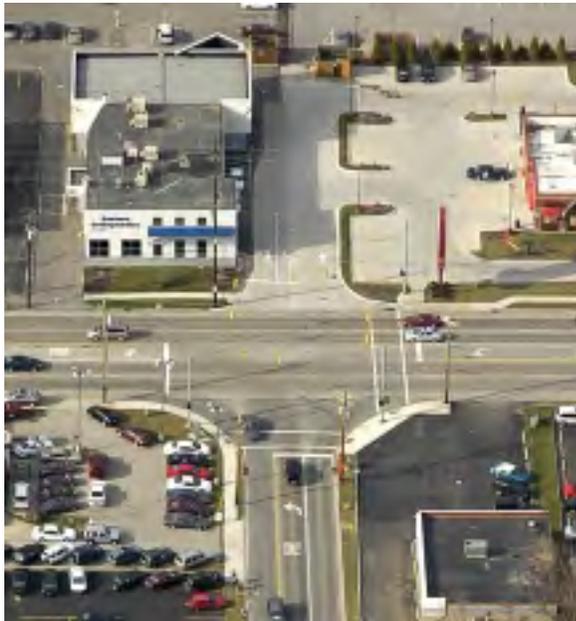
Improvements were grouped into several categories, based on responsibility for implementation, scope and impacts. These recommendations are discussed in the following sections through specific improvements that have been accomplished within the corridor through the implementation efforts of the past 10 years.

# Corridor Improvements

The following is a discussion of the variety of recommendations from the 1996 Beechmont Corridor Transportation Study represented through implementation efforts within the corridor.

## CURB CUT (DRIVEWAY) IMPROVEMENTS

A critical element in improving the ability of traffic to flow smoothly along Beechmont Avenue is reducing the impact of individual driveways. Reducing the total number of driveways is but one element in reducing the impacts of these driveways on the Beechmont traffic flow. Reducing the impacts of individual driveways can often be as important as eliminating drives.



Consolidating driveways opposite Asbury Road eliminated confusing turning conflicts and dramatically improved access to area businesses.

Relocating access to another location can remove conflicts from critical intersection locations to other locations more capable of accommodating access. Routing left turn into the PNC Bank down Five Mile Road, through a new traffic signal at Nimitzview Drive removed this critical conflict that was backing up traffic into the Five Mile intersection.



Turn restrictions can allow certain driveways to remain open for right turn traffic, or, in this case, maintain service truck access at this BP Station on the corner of Five Mile Road. The deceleration lane allows entering traffic to slow down without increasing the potential for a rear end crash.

## CROSS ACCESS BETWEEN ADJACENT PARCELS

The ability to provide access between adjacent parcels is a critical element in improving traffic flow along Beechmont Avenue *and* improving access to the corridor's businesses. These access connections can take several forms, from public service roads, to informal parking lot connections. No matter what form connections take, they provide the ability of vehicles to visit several businesses without traveling out onto Beechmont Avenue, lowering the total number of vehicles on Beechmont, reducing turning moves and increasing the utilization of signalized intersections. Access connections are very popular with shoppers, improving the attractiveness of visiting businesses, similar to the larger, one-stop shopping centers or malls.

When surveyed, nearly all businesses want a traffic signal at their entrance. While signals cannot be added at every drive, providing cross access between parcels connect several businesses together. Without access between parcels, only businesses on the corner of a signalized intersection can take advantage of the signal. Providing access can allow traffic from several adjacent businesses to connect to the side streets, effectively providing these businesses with a traffic signal.

The private access road through in front of Target. This private drive combined 4 separate shopping centers into a single shopping destination, allowing shoppers to access countless shops, restaurants and service centers without having to turn out onto Beechmont. Motorists are also afforded access to one of 3 signals connected to the development.



The private access road through the Pinnacle development. This improved "drive" through the parking lot afforded signalized access to patrons of a Park 'N Ride, a Senior Center, Township Government Center and large church. As an added benefit, the additional traffic from these adjoining properties helped meet the minimum traffic volumes necessary to meet signal warrants and retain the signal.

## PUBLIC ROADWAY IMPROVEMENTS

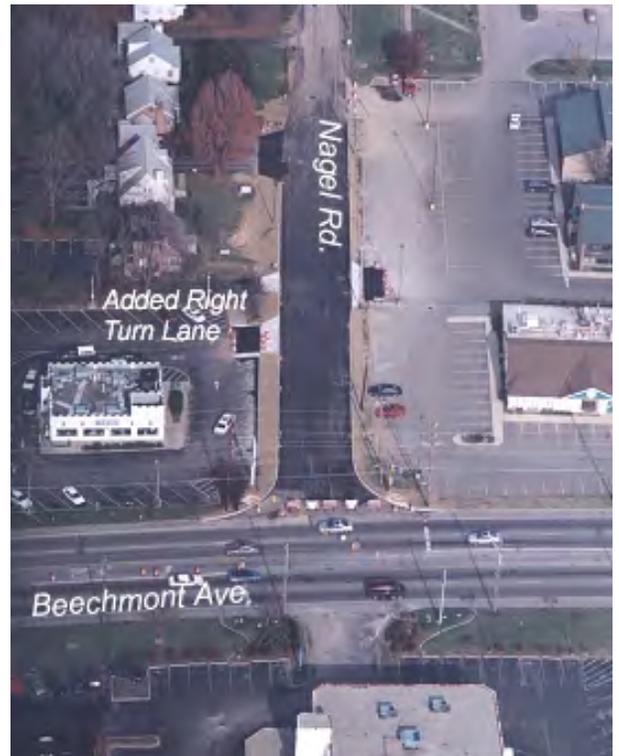
Reducing the impact of access is important, but capacity analyses showed that some intersections simply did not have sufficient capacity to accommodate the volume of traffic passing through. In these cases, it is important for the public agencies to show their commitment to traffic flow in the corridor. Eliminating these capacity restraints is critical to efficient traffic flow and reducing the delay and number of stops within the corridor. Additional turn lanes on the side street is an effective strategy to reduce the required green time on the side streets, increasing mainline capacity and traffic flow.

Mercy Hospital's donation of the Right of Way required to construct a right turn lane on Five Mile Road at Beechmont Avenue helped reduce overall project costs and leverage public funding, and move up the construction schedule.



New Closed Loop Signal System by ODOT, designed to improve signal progression and efficiency.

The Hamilton Co. Engineer widened Nagel Road to provide a separate right turn lane, reducing side street delays and improving overall intersection operations. Delays on Nagel during the evening peak hour were prompting motorists to cut through the adjacent businesses to avoid waiting for the signal, increasing safety concerns in adjacent parking lots. The project was funded with local cooperation by Anderson Township and the Forest Hills School District, in conjunction with a new school on Nagel Road.



## **PUBLIC POLICY CHANGES**

In 1996, access controls, driveway permits and zoning controls were not adequately coordinated to effectively guide access within the corridor. In the past 10 years, all major plans and policies affecting development within the corridor have been updated and coordinated.

ODOT adopted an Access Management Manual in 1998, recommending the access spacing based on the roadway function, volume, stopping sight distance, land use and operating speed.

The Hamilton County Engineer's Office adopted their own Access Management Manual in 2004 that governs access on County roadways, including most of the side streets within the corridor.

Anderson Township has developed or revised several policies and plans within the past 10 years, with a major focus on properly designed and coordinated access. Chief among these are:

- The Anderson Trails Plan to guide sidewalk and bicycle facilities within the Township.
- Corridor specific pedestrian planning efforts conducted by the Township Transportation Advisory Committee (TAC).
- Revised parking requirements, including access control incentives and a shared parking provision designed to encourage sharing of parking facilities and adjacent parcel connections.
- Updated Township Master Plan, including access control provisions within the Beechmont corridor.
- Beechmont Landscape Plan that recommends landscaping improvements within the corridor to reinforce and accent access controls in the form of aesthetic improvements
- Beechmont Vision Plan that recommends land use enhancements that would reinforce access plans.
- Construction of a new Park 'N Ride facility to the rear of the Anderson Towne Center (northeast quadrant of the Five Mile intersection).

# Implementation

## APPROACH

From the formation of the Corridor Task Force, the Beechmont Corridor project was a multi-disciplinary effort. Engineers, residents, government officials, planners, businesses, bicyclists, utility agencies, politicians, emergency medical services, law enforcement, media – all were brought on board and put to work. This cooperation in the study process became the driving force behind implementation. Building upon early coordination between the Hamilton County Engineer’s Office (HCEO) and the Ohio Dept. of Public Safety (ODPS), the Anderson Township Trustees received a Safe Community grant to hire a Safety Coordinator. The Safe Community program embraces the multi-disciplinary concept by uniting engineering, enforcement, EMS and education efforts towards a common goal. With tightening budgets on every level, it quickly became obvious that the many recommendations contained in the report were going to have to happen one at a time, rather in one big construction project. KZF Design was retained to provide engineering support as the individual projects were developed.

Implementation efforts began even before the publication of the study when opportunities for redevelopment began popping up within the corridor. These early opportunities shaped the way implementation was to occur, and highlighted the advantages of the multi-disciplinary approach. Working through the Safety Coordinator, the various governmental agencies involved in the Beechmont Corridor Task Force were able to present a unified and coordinated access plan very early in the process.

The prospective developers of the Beechmont Square Plaza and the former Kroger store quickly accepted the unified plan and designed their development plans around the access plan, rather than the other way around. The process worked so well, the developers continued to work through the multi-disciplinary group to solve stormwater and zoning issues.

Working with the multi-disciplinary Access Committee allowed developers to work out other contentious and often conflicting regulations within four separate governmental jurisdictions. This cooperation ultimately led to successful redevelopment 2 vacant shopping centers with a 2000 foot private access drive connecting 4 separate shopping centers into one connected shopping and service area, with access to 3 traffic signals. This private “road” has been in place for 10 years now, and the improved access and new businesses prompted redevelopment of 2 adjacent centers and reduced the vacancy rate in these centers from 30% to less than 8% (2005).



In the big picture, the Beechmont Corridor had its first, large scale success and a very popular, highly visible demonstration of how access management could work for customers, motorists, developers and individual businesses. Instead of explaining access management, its benefits and how it might work for other areas, we simply point to the “Target Road” to make our point.



The Target project involved 100% private funding, with governmental cooperation and assistance streamlining approvals. Other examples of how the multi-disciplinary approach has been used, include:

- Mercy Hospital donated Right of Way at the Beechmont and Five Mile intersection, combined with funding from Anderson Township and Hamilton County to construct a right turn lane on Five Mile Road. The leverage provided by combined funding and cost savings helped move the project up several years in the County's priorities.
- The Anderson Township Trustees have used local funding to leverage Hamilton County and Ohio Public Works funding of projects to improve Nagel and Asbury Road intersections.
- A wide combination of groups was involved in making the Pinnacle connections work, including private property owners, the Township, Metro, IHM Church and an apartment complex. Key contributions included the Township adopting the private entrance to the Anderson Square Apartments as a public street, ODOT assistance in relocating a dated traffic signal to a more advantageous location, design and cooperation by Pinnacle Development and financial contributions by a number of private and public agencies to make use of a previously unwarranted signal.
- Partnership between the Hamilton Co. Engineer, Anderson Township and property owners on the north side of the Asbury Road intersection combined the widening of Asbury Road with access improvements to remove a dangerous left turn beyond the signal and dramatically improve safety, traffic flow and access to area businesses. Previously, the conflicts from two adjacent businesses, each with drives within the intersection, prevented signalization. Combining these drives into one signalized entrance and eliminating secondary drives greatly reduced turning conflicts and delays within this accident-prone intersection. The previous access to Arby's required customers to wait in the eastbound through lanes beyond the Asbury signal to turn left into the entrance, backing up traffic through the intersection and causing a substantial number of rear end crashes.

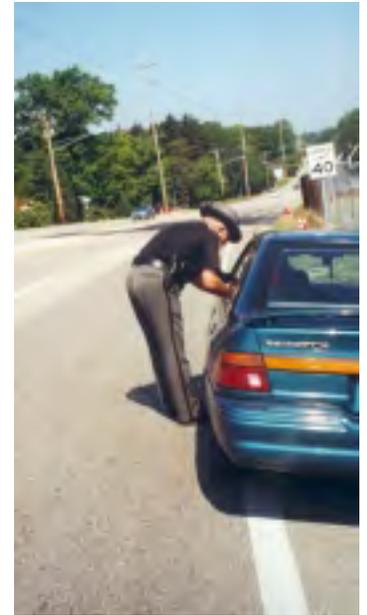
Maintaining the multi-disciplinary approach through implementation has given the plan an uncommon amount of flexibility that has reinforced the public involvement principles of the original study. As detailed and involved the data gathering and planning efforts were in the study process, some conditions or developments simply cannot be predicted. It's not unusual find a need to adjust or modify certain access proposals to meet unique site conditions or unforeseen developments. With the assistance of ODOT, the Township's Development Services and engineering assistance from KZF Design, the plan can be modified to meet unique conditions and still provide the desired access improvements.

The original plan called for an access connection between parking lots, across the back of St. Timothy's Church. When the church decided to add a playground to the rear of their site, concerns about possible conflicts between children and cars were alleviated by constructing the connection across the front of the church, providing the intended connections without the safety concerns.



Engineering plans are developed with the best data available at the time. When conditions change, it is only responsible to investigate alternative solutions. Developing these alternatives within acceptable engineering guidelines insures their function, and acceptance through the permitting process. This flexibility has led to the term "Living Plan" to describe its evolution. Often, a phased approach has been used. Modifying access within acceptable limits to meet existing conditions, with an eye towards additional improvements in the ultimate access plan when future conditions allow.

A major criteria of the Safe Community program, and what has developed has a hallmark of the Beechmont Corridor Improvement, is the inclusion of all four E's of the FHWA 4-E Program - Engineering, Education, Enforcement and Evaluation. Clearly, engineering solutions cannot be expected to solve all types of problems within the Beechmont Corridor. Some solutions require modifying driver behavior to remedy. Decisions within the corridor are not made based on hunches, but on solid data gathered in the field. Crash data, traffic volumes and field observations are just a few examples of the types of data used to recommend improvements and safety countermeasures.



The use of Law Enforcement to reduce red-light running has been a critical component in reducing the more serious right angle crashes within the corridor's intersections and control unsafe speeds along the western end of the corridor.



Education of motorists within the corridor has taken a variety of forms, including working within the local high schools to teach proper driving behavior, alcohol prevention, how to drive tips in the local media and seatbelt reminders through the area new car dealerships.



Specific examples of sample projects follow, to demonstrate the differing paths that have been used to develop the various projects that have been constructed. Nearly every project has required a unique approach, but certain issues, paths and solutions resurfaced.

## TARGET- BEECHMONT SQUARE

**Project:** Target came looking to redevelop the vacant K-Mart, allowing presentation of the Access Plan prior to preliminary site layout. At the same time, the Libby Corp. approached the Township about a redeveloping the Beechmont Square. Final access plans provided a 2000 ft. long privately roadway connecting 4 separate shopping centers to 3 traffic signals in 2 separate Counties and 2 Townships.

**Financing:** \$650,000 (estimated) private funding

**Benefits:** Enabled economic and access redevelopment of the vacant/underdeveloped east of the corridor.  
Provided instant credibility to Beechmont Corridor study – a sample that works!  
Provided a sample project  
Demonstrated the effectiveness of access management for motorists and businesses.  
Showed the value of multi-disciplinary approach in working with developers  
Provided a way to negotiate conflicts with 4 separate governmental jurisdictions.  
Easily identifiable, with good, direct internal circulation  
Significant reduction in turning movements and total vehicles on Beechmont Ave.  
Provides improved circulation and access to outlots  
Easily allows entrances to be eliminated.  
Right turn deceleration lanes further reduced access impacts on the Beechmont traffic flow.  
100 % private funding  
Development of Written access/maintenance agreements - sample for rest of corridor.  
Improved parking layout removed parking conflicts from entering traffic lanes.

**Note:** The project was shut down on 3 separate occasions because of disagreements. The Traffic Safety Coordinator's job was to put everyone together to solve significant stormwater and jurisdictional issues.



## FIVE MILE INTERSECTION

**Project:** Improvements at the Five Mile intersection have actually been 3 separate projects – so far. As a high priority in the 1996 study, construction of a right turn lane on northbound Five Mile Road was accelerated by donation of right of way by Mercy Hospital and funding from Anderson Township. Next, the HCEO installed a traffic signal at Five Mile and Nimitzview – an existing service drive - to reduce side street delay and encourage access through this location, allowing PNC Bank to restrict left turns at their Beechmont entrance.

Finally, ODOT worked with the BP Service Station and 4 other private partners to restrict left turns into the gas station and open a new access drive through to the Five Mile Center to the north, allowing traffic to access Beechmont through the Five Mile signal, rather than continue making dangerous, unsignalized left turns onto Beechmont within this heavily congested area.

**Financing:** \$300,000 public funding (HCEO – turn lane and signal improvements)

\$350,000 private funding

**Benefits:** 25% crash reduction in Intersection Crash Rate

Improved intersection formerly ranked as the most hazardous intersection in Hamilton Co

Turning Restrictions to 5 Driveways

Shared Access Agreement defined easement and maintenance responsibilities

Helped reduce PM Peak congestion, by restoring intersection capacity

Reduction in Unsignalized Left Turns within the vicinity of Five Mile intersection

Stimulated redevelopment 3 area Businesses, reconsider relocation plans.

**Note:** Detailed traffic analysis currently underway by Hamilton Co. Engineer/Woolpert Consultants to investigate potential of a Controlled Flow Intersection (CFI) design for this intersection.



## ASBURY ROAD INTERSECTION

**Project:** Widening Asbury Road approach to provide a separate right turn lane by the HCEO convinced area businesses into combining 3 entrances with historically high crash rates and difficult access into a single, signalized entrance serving several properties.

**Financing:** \$500,000 public funding (HCEO – turn lane and signal improvements)  
\$250,000 (estimated) private funding

**Benefits:** Eliminated several troublesome safety problems within the immediate vicinity of intersection  
Combined 2 unsignalized drives in the intersection to 1 signalized drive, eliminating blind entrance.  
Public/private partnership leveraged funding of private businesses and public agencies.  
Closed 5 driveways, including several within the immediate intersection.  
First use of Township's new Shared Parking Provision to eliminate redundant parking facilities.  
Encouraged and facilitated redevelopment of all impacted businesses.  
Shared Access Agreement defined easement and maintenance responsibilities  
Eliminated long-standing land use conflict, using adjacent residential street for commercial traffic.

**Note:** Most difficult project to date, requiring extensive coordination working the different agendas, personalities and schedules between private partners and public agencies.



## PINNACLE DEVELOPMENT CONNECTIONS

- Project:** Relocation of an unused, commercial traffic signal 150 feet to a better location, opposite a private apartment complex entrance. The Township acquired the entrance as a public street, providing access to adjoining properties and improving maintenance control. Access easements through the redeveloping Pinnacle property provided signalized access for IHM church, several businesses, a Park 'N Ride and the Township Government Center. This 1250 ft. private service road provided sufficient traffic at the new intersection to meet signal warrants and avoid removal of the signal.
- Financing:** \$100,000 public funding (And. Twp. in the form of private easement agreements through Pinnacle).  
\$350,000 (estimated) private funding
- Benefits:** Relocated unwarranted signal to more accessible location that meets volume warrants.  
Provided signalized access to at least 11 different properties, rather than previous 1 parcel.  
Public/private partnership leveraged funding of private businesses and public agencies.  
Closed 5 driveways, with turning restrictions on 3 others.  
Provided Metro buses with signalized left turn onto Beechmont, allowing access into the Park 'N Ride.  
Eliminated busy on-street bus stop and potential unsignalized pedestrian crossing of Beechmont.  
Shared Access Agreement defined easement and maintenance responsibilities  
Used Township's new Shared Parking Provision to eliminate redundant parking facilities.  
Direct access to service uses, including a church, Senior Center, Park 'N Ride and Government Ctr.
- Note:** This project has had the largest impact on the motoring public's ability to access public destinations, pedestrian safety and driveway closures.



## ADDRESS SIGNAGE PROGRAM

**Project:** Installation of address signs along the corridor to more easily identify address/block locations along the corridor and aid way finding. This issue was brought up in the early public meetings by customers trying to find individual businesses on the corridor by their address number. Comparing these concerns with crash records indicated that motorists unsure of their destination might be slowing down in traffic looking for address labels, or suddenly changing lanes to access certain businesses.

**Financing:** \$25,000 public funding (Township and County)

**Benefits:** 30% reduction in Rear-end crashes were noted in the year following installation.

Public acceptance has been overwhelming.

Address identification has aided EMS and 911 callers in locating crash locations.

Provides a sense of place, reducing unsure or lost motorists, slowing erratically looking for their destination.

Fulfilled a need identified early in the public involvement process.

Showed little improvements can make Big Impacts.

**Note:** Project required 3 years of coordination with ODOT, Cinergy and Hamilton Co. to meet MUTCD requirements and obtain necessary permits to install what ODOT officially refers to as “non-conforming, permit-able use” signage.



Note the mailbox along the curb. Public involvement comments identified conflicts with mail delivery vehicles during mid-morning and lunch peaks that were causing erratic lane changes. While crash records did not indicate this as a concern, it is possible that sideswipe, lane-change or rear end crashes may have been indirectly caused by mail delivery.

## LANDSCAPE PLAN

The Township completed the Landscape Plan in 2001 that identifies areas along the Beechmont Corridor where landscape enhancements may be feasible. One theme of the plan was to provide a different landscape character in selected areas along the corridor.

Proposed landscape elements on Beechmont Ave., including landscaped medians to break up the pavement and plant additional trees along the roadside to screen roadside clutter.



Examples of landscaping improvements along the corridor that have been implemented through the zoning process, including sidewalks and trees in front of Rogers Dentistry and IHM Church.



## MULTI-MODAL IMPROVEMENTS

While the vast majority of existing travel within the Beechmont Avenue corridor is vehicular, it is clear the potential for decreasing traffic congestion within corridor must include all modes of travel. Recommendations in the corridor study have focused on two aspects of alternative modes of transportation. First is the ability to remove potential automobiles from the roadway by increasing other modes of travel. The second is to reduce the impact these alternative modes have upon the Beechmont traffic flow. Increasing potential ridership within the scope of this study involves corridor improvements to improve either the bus's mobility within the corridor or the ability of potential riders to access existing bus lines.

### Park 'N Ride

One Park & Ride exists within the study area, adjacent to the Anderson Township governmental offices, with parking for 125-150 vehicles. Access improvements to this facility were made with the connections through the Pinnacle development providing signalized access. Outbound buses can now turn into the Park 'N Ride without having to make an unsignalized left turn back out onto Beechmont. This access eliminates riders having to cross Beechmont during the evening peak hour to return to their cars.

A second Park & Ride has recently been completed to the rear of the Anderson Towne Center (at Five Mile Road). This facility replaced a second "unofficial" Park & Ride that had "occurred" at Beechmont Mall for years. With the redevelopment of this facility as the Anderson Town Center, much of this parking had temporarily moved across the street to the vacated Kroger store (moved across to the Town Center). Now with SteinMart moving into this store, the unofficial parking will be replaced by this new, dedicated facility. Moving this parking to a formal facility also eliminates a place where riders having to walk across Beechmont Avenue to get their cars.

Private access road through the Pinnacle development to the traffic signal at King Louis Court have allowed Metro to route outbound buses into the Park 'N Ride, saving travel time and eliminating the need for riders to walk across Beechmont Avenue. This improved "drive" through the parking lot afforded signalized access to patrons of a Park 'N Ride, a Senior Center, Township Government Center and large church. As an added benefit, the additional traffic from these adjoining properties helped meet the minimum traffic volumes necessary to meet signal warrants and retain the signal.



## Pedestrian Improvements

Several small sections of sidewalk have been installed in the past 10 years within the corridor along both sides of Beechmont Avenue, through zoning requirements as properties have redeveloped. This process has begun to produce noticeable amounts of sidewalk along the corridor, though at a rather pedestrian pace. Notable sections within the vicinity of Nagel Road and west of Wolfangle Road have helped provide access to signalized crosswalks or complete significant lengths.

Signalized crossings of Beechmont have been added at Eight Mile Road, with additional signalized crossings under construction at the Salem Road and the New England Club Drive.



To encourage the development of sidewalk within the corridor, Anderson Township has initiated a project to construct sidewalk from Tallberry Drive to Five Mile Road. This section was recommended for construction by TAC to complete several sections of existing walk, in an area experiencing lower rates of redevelopment potential (residential, cemetery).

Sidewalks along Beechmont like these at IHM church remove pedestrians from the roadway and the adjacent parking lots, reducing pedestrian/vehicle conflicts, and improving safety and roadway capacity.

### *Five Mile Road Intersection*

Pedestrian crossings at the Five Mile Road intersection were not recommended in the corridor study. With 65,000 vehicles per day, 2.5 crashes/mvmt, large pavement widths and increasing vehicular delays, this intersection is clearly not a pedestrian friendly environment. Even with sidewalk (if provided), the visibility of pedestrians within crosswalks is questionable, particularly with the high number of vehicles turning within this large, busy intersection. Providing pedestrian clearance times would significantly increase vehicular delays, the number of rear end crashes and the likelihood of increasing driver frustration/aggression.

The recommendations instead, rely on signalized crossings at adjacent intersections and area land use to direct pedestrian crossings away from the Beechmont/Five Mile intersection. New walk has been constructed at the Anderson Towne Center and Five Mile Retail Center to improve connections to the crossings. For the most part, this routing works, as crossings between pedestrian destinations of the area –Anderson High School, Anderson Towne Centre, Park 'N Ride, Five Mile Retail Center and Nimitzview area residences – are focused to the existing signalized crosswalks at Forest, Nimitzview and the Five Mile Retail Center. The drawback with this concept is that pedestrians walking along Beechmont, instead of to one of these major land use destinations, must cross Beechmont by going 1,200 feet north or south of the intersection.

Pedestrian crossings at intersections are a major source of pedestrian/vehicle conflicts and safety concerns. Crosswalks and pedestrian signals at signalized intersections will help channelize pedestrians into the safest and most expected locations and times to cross. Unmarked pedestrian crossings at random locations create pedestrian/vehicle conflicts where and when drivers do not expect and are not looking for them, increasing vehicle delay, congestion, rear-end collisions and driver uneasiness.

## VISION PLAN

The Anderson Township Board of Trustees identified a need to continue the transformation of the Beechmont Avenue Corridor by creating a set of visual enhancement guidelines to focus the discussion on how to make it more attractive and begin the transformation of the corridor into a more attractive destination.

Working with recommendations from the 2001 Landscape Plan, six mixed-use neighborhoods have been identified to help channel resources and attention into key areas. Under this approach, each area can begin to take on its own character and identity, creating a unique, but compatible series of mixed-use neighborhoods. The area between Forest and Asbury Roads was studied in further detail to suggest how it might be transformed in the future, using building placement and character, streetscape enhancements, pedestrian facilities, improved vehicular access and circulation and building façade improvements. The land use and building changes are expected to be market driven, by the individual developers/ property owners.

The desire to have a true mixed-use community is strong, so this plan integrates dense residential into the plan. The exact mix will be market driven, but it is recommended that there be some mix of residential, office and retail uses. Concentrated residential areas are expected to have some associated open space for those who live in the area. As properties begin to upgrade or redevelop, shared parking, curb cut closures and rear access will be incorporated.

As the corridor redevelops, it is recommended that pedestrian facilities be included and shared parking lots be pushed to the back, with access from parcel to parcel through rear alleyways. In the long-range plan it is possible to access business groups without the need to enter onto Beechmont Avenue. This allows for better access management, which creates quicker traveling times and decreases accidents.

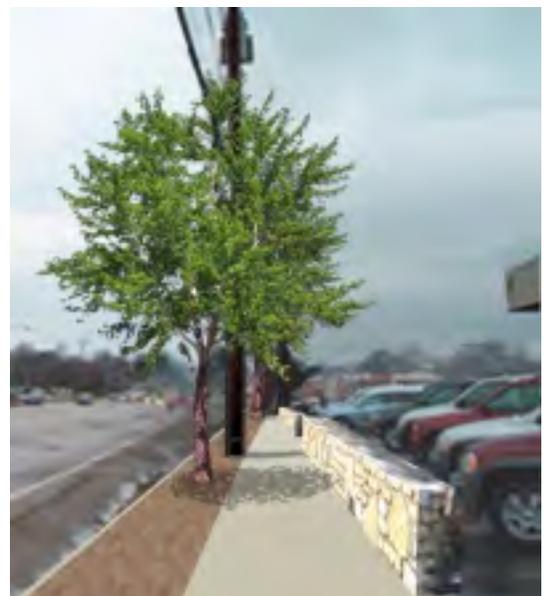
Residential units are shown to serve as buffers between existing housing stock and the new mixed-use corridor. The Vision Plan includes raised medians to restrict left turns and improve safety by encouraging the use of the rear alley access. With this Forest to Asbury example area, the Vision Plan is to serve as a template for future improvements and development that will begin to change the appearance and image of Anderson Township's main business corridor and heart of the Anderson area.



The Vision Plan recommends street trees to minimize the visual impact of the utility poles, pedestrian spaces and landscape walls to screen adjoining clutter. Care must be taken for proper placement per ODOT and Cinergy requirements.

Existing

Proposed



## UTILITIES – CINERGY FEASIBILITY STUDY

Nearly every discussion about Beechmont Avenue eventually gets around to utilities – and putting them underground. The heavy commercial development within the corridor leads to a heavy demand for utilities – and with a large number of overhead service and feeder lines for electric, telephone and cable television through the corridor, these lines do have a substantial visual impact. But they also have an impact on the ability to combine driveways and construct access roads.

The Anderson Township Trustees asked Cinergy to investigate the feasibility of relocating area utilities underground. In a *Feasibility Study (5-2001)*, Cinergy found the technology is available, but the full costs of this construction likely make this construction cost prohibitive. Transmission (69kV) and distribution electric lines extend along both sides of Beechmont Avenue; with overhead service connections extend into each abutting use. Telephone and cable lines are also located on these pole lines.

Cinergy estimated the cost to place the electric utilities underground was over \$50 million, an estimate that only reflects the costs for Cinergy's work. Private service relocations, right of way and relocation of telephone and cable lines are not included. It is important to note that this work would remove most of the existing wires and cables, but it would not eliminate many of the poles along Beechmont Avenue. New poles would be required to mount street lighting as well as address and street signage.

Cinergy's estimate included \$31.6 million for relocating the distribution lines underground. Additional costs for private property owners and/or the Township are also anticipated for support infrastructure, easements and relocation of existing signs, trees and even buildings to provide sufficient space alongside the road. The existing right of way is generally only 1-2 feet behind the curb. Acquiring the additional right of way required for underground services would not be eligible to be acquired using Cinergy's eminent domain authority.

Cinergy currently owns and maintains the overhead services to the buildings. Relocating underground would require customers to pay for relocating services, and to maintain them. Also, a number of businesses would require updated services to meet current codes and power requirements, ranging from new transformers to rewiring the entire building. Utilities underground would require underground vaults and pad mounted transformers and switchgear. These 8 ft. x 8 ft. concrete pads at each development would present larger obstacles for access improvements than the existing poles, not to mention the aesthetic impacts.

The relocation of the 69 kV transmission line would present greater technical demands. The heat generated by these lines would require an oil fill conduit to keep cool. With the mass of existing utilities in the corridor, Cinergy expects this line would be installed in the median, significantly raising maintenance hazards and costs. Cinergy estimated \$19 million to relocate this line underground.

Relocation of these utility lines to the rear, or even outside of the existing corridor is expected to be more challenging. The varying depth of the existing properties, variety of building locations and impacts to adjacent residences to the rear or along alternative routes make these options unfeasible. The additional expenses to the existing businesses for relocating services would be borne by the individual property owners, including possible upgrades to their entire electrical service to meet current codes.

# The Corridor Today - 2005

In the 10 years since adoption of the *Beechmont Corridor Transportation Plan, 1996*, a number of projects have been completed, including:

- Over \$1,500,000 of private funding has been invested on Access improvements
- 20 Driveways have been Closed or Restricted.
- Over \$2,500,000 of public funding has been invested.
  - \$175,000+ by Anderson Township
  - \$1,250,000 by Hamilton Co.
  - \$800,000 by ODOT/OKI – Enhancement funding
  - \$500,000 by ODOT (Closed Loop System)
- All major Vacant Parcels have been redeveloped and are now occupied.
- Corridor vacancy rate has dropped **from 30% to 6%**.
- 4 largest intersections have all been improved.
- Corridor travel time has dropped approximately 25%.
- Successful Partnerships extended to other projects, including a \$1.6 million intersection improvement for new Nagel Middle School from collaboration between HCEO, Township and School District.

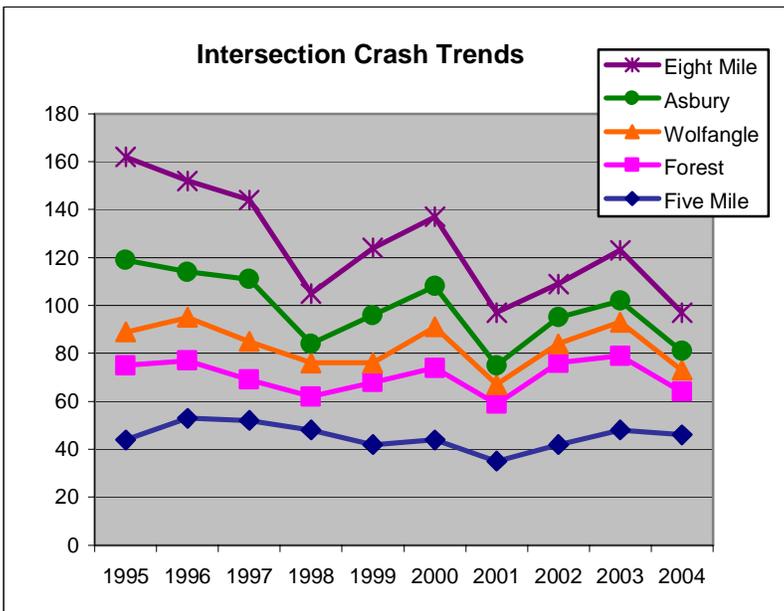
The obvious question is, how successful have we been?

## SAFETY SITUATION

Crash data from both the Hamilton County Engineer and Ohio Department of Transportation was reviewed as part of this update analysis. Corridor crashes between 2001 and 2003 were analyzed and compared to results from the original study. This data showed a slight increase in the total number of crashes - 904 crashes in 1991-93 to 940 crashes in the 3 years from 2001-2003.

While total crashes remained nearly the same, the overall crash rate declined to 3.26 crashes per million vehicle miles traveled with the incremental traffic increases in the study area. The total number of crashes was high enough to be listed in ODOT's Crash Hot Spot list of the top crash sections in the state (any 2-mile segment with more than 150 crashes over 3 years). The Forest to Nordyke section was ranked #98 on listing with 3.28 crashes/mvm and the section from the City limits to Forest was ranked #197 at 3.23 crashes/mvm. The section immediately east of the study area, in Clermont Co., was ranked #3 in the state with a crash rate of 7.53 crashes/mvm.

Significant decreases were noted at the various intersections within the study area, with only 4 of the 9 signalized intersections now over 1.0 crashes/million vehicles entering the intersection, and general decreases at all signalized intersections within the study area. The improvement in conditions at the intersections (41.5% of the crashes occurred at intersections) is noticed most in the decrease in angle crashes – from 41% to 33% of the crashes – and a comparable decrease in Injury Crashes, from 342 in 1991-93 (38%) to 199 from 2001-03 (21.2%).



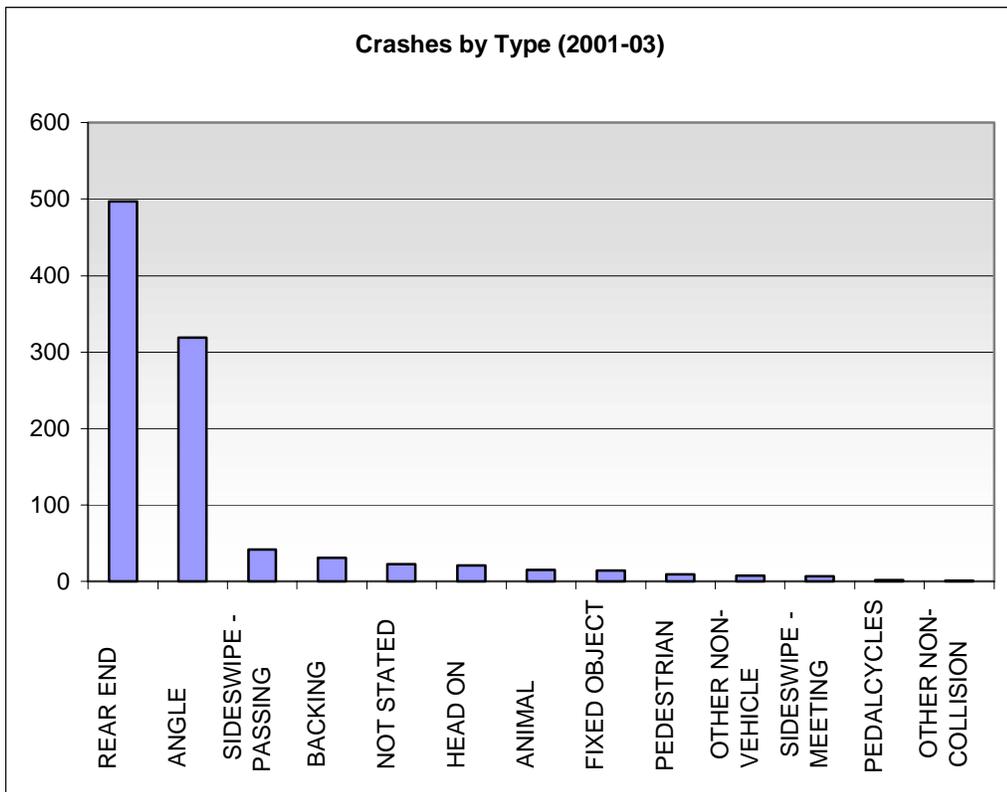
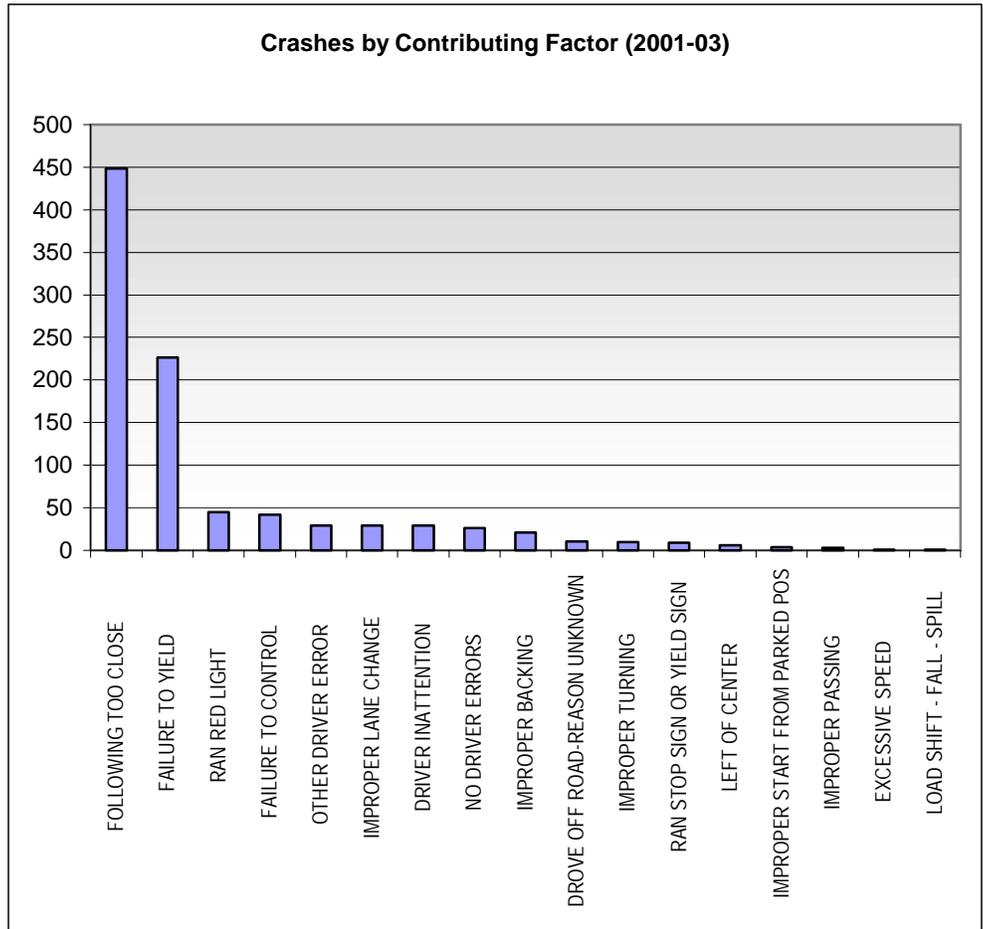
The most notable trend was the continuing high number of rear-end crashes (50% compared to the statewide average of 30%). 60% of the vehicles initiating the crash were moving straight along Beechmont, and over 50% of the vehicles struck were reported stopped in traffic. These rear-end crashes and stopped vehicles are clear indicators of vehicles stopped in traffic and access related crashes. Over 37% of crashes were reported at signalized intersections. Additionally, speed was reported as a contributing factor at less than 1% of the crashes, and speed of the vehicle initiating the crash was reported to be less than 20 MPH nearly 20% of the time.

**Table 4  
Crashes/Year at Beechmont Intersections**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Salem	23	17	23	8	14	14	17	8	6	6	7
Paddison/Markley	16	9	12	9	13	8	9	10	11	11	9
Five Mile	56	44	53	52	48	42	44	35	42	48	46
Forest	18	31	24	17	14	26	30	24	34	31	18
Wolfangle	11	14	18	16	14	8	17	8	8	14	9
Asbury	16	30	19	26	8	20	17	8	11	9	8
King Louis Ct.	4	4	4	4	13	9	5	4	4	4	4
Nagel	12	17	12	11	16	11	10	16	19	12	16
Eight Mile	31	43	38	33	21	28	29	22	14	21	16
Nordyke	17	11	8	5	11	5	13	6	5	3	8

**Table 5  
Historical Trends of Crash Rates at Beechmont Intersections**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Salem	1.92	1.42	1.92	0.67	1.17	1.17	1.42	0.67	0.59	0.59	0.64
Paddison/Markley	1.39	0.78	1.04	0.78	1.13	0.64	0.73	0.81	0.82	0.82	0.67
<b>Five Mile</b>	2.88	2.26	2.73	2.38	2.20	1.92	2.01	1.60	1.92	2.36	<b>1.95</b>
<b>Forest</b>	1.09	1.88	1.46	1.03	0.85	1.58	1.82	1.46	2.44	2.22	<b>1.29</b>
Wolfangle	0.69	0.88	1.13	1.01	0.88	0.50	1.07	0.50	0.50	0.96	0.62
Asbury	1.02	1.92	1.21	1.66	0.51	1.28	1.08	0.54	0.81	0.67	0.59
King Louis Ct.	0.27	0.27	0.27	0.27	0.87	0.60	0.33	0.27	0.30	0.30	0.30
<b>Nagel</b>	0.84	1.19	0.84	0.77	1.12	0.77	0.70	1.12	1.26	0.79	<b>1.06</b>
<b>Eight Mile</b>	1.73	2.39	2.11	1.84	1.17	1.56	1.61	1.22	0.82	1.23	<b>1.04</b>
Nordyke	1.11	0.72	0.52	0.33	0.72	0.33	0.85	0.39	0.33	0.20	0.52
<b>AVERAGES</b>	<b>1.41</b>	<b>1.49</b>	<b>1.44</b>	<b>1.16</b>	<b>1.08</b>	<b>1.08</b>	<b>1.26</b>	<b>0.92</b>	<b>1.05</b>	<b>1.09</b>	<b>0.87</b>



## TRAFFIC VOLUMES

After climbing throughout the late 1980's and 1990's (see Table 1 on p. 6), traffic volumes actually stabilized quite a bit in the last 10 years. Counts from 2003 are shown in Table 5 below, with comparisons from 1994 and average growth rates. In general, the Average Daily Traffic (ADT) on Beechmont Avenue is approximately 34,000 vehicles per day (vpd), compared to 32,000 vpd in 1994 – a rather measured growth rate of approximately 0.5% per year. This minor increase reflects the rather limited redevelopment opportunities within the immediate corridor, as well as the general vicinity.

**Table 5**  
**ODOT Average Daily Traffic Volumes (ADT)**

Begin Log Length	Begin	End	1994	2002	Total Increase	Growth per Year	
3.94	0.88	City Corp Line	Salem Rd.	19,320	17,800	-7.9%	-1.00%
4.82	2.06	Salem Rd.	Eight Mile Rd.	32,010	33,700	5.3%	0.65%
6.88	0.51	Eight Mile Rd.	Clermont Co. line	32,000	33,130	3.5%	0.45%

## CONGESTION AND DELAY

At first glance, aside from a pothole here or there, the Beechmont Avenue pavement looks fairly close to the same it did in 1996. No major widening has occurred – but none was recommended. But significant improvements have been made, and their impact is very noticeable. A quick review of the operating conditions at signalized intersections in 1996 (see Table 6 below) shows 4 intersections oversaturated (volume well in excess of capacity), producing average delays over 70-80 seconds per vehicle. In the 10 years since completion of the study, 3 of the 4 intersections have been improved – Five Mile, Asbury and Nagel Roads - and private improvements at the fourth – Nordyke, near Target - made further work unnecessary.

The results have produced a corridor with acceptable delays and at least tolerable congestion levels. This isn't to say operations are congestion-free. Average delays over 50 sec./veh. are common at Five Mile Road (particularly north and south bound) and Eight Mile Road, and the total volume entering these intersections is approaching the current capacity, leading to frequent delays when even minor disruptions or events occur. Still, with Volume to Capacity (V/C) ratios below 1.0, Beechmont Avenue (SR 125) within Anderson Township is not currently listed on ODOT's Congestion Management List.

**Table 6**  
**Level of Service Improvements from 1996 to 2003**

Intersection	1996		2003		Improvement
	LOS	Delay	LOS	Delay	
Five Mile Road	Oversat.	v/c > 1	<b>D</b>	<b>53.0</b>	Added NB Right Turn, driveway and signal improvements
Forest Road	<b>D</b>	30.3	<b>C</b>	<b>25.6</b>	Removed Center Island, aligned Left turn lanes
Wolfangle Road	<b>C</b>	16.6	<b>C</b>	<b>20.4</b>	
Asbury Road	Oversat.	v/c > 1	<b>C</b>	<b>25.0</b>	Add NB Right Turn, SB drive and signal improvements
King Louis/Pinnacle	<b>B</b>	8.5	<b>B</b>	<b>18.4</b>	Relocated Signal, developed North Access Connections
Nagel Road	Oversat.	v/c > 1	<b>C</b>	<b>23.6</b>	Added SB Right Turn and signal improvements
Eight Mile Road	<b>D</b>	28.0	<b>D</b>	<b>53.0</b>	
Nordyke Road	Oversat.	v/c > 1	<b>B</b>	<b>13.1</b>	Target frontage Road, reduced WB Left traffic by 50%

**Table 7**  
**2003 Signalized Levels of Service**

Beechmont Intersect.	Crash Rate	Northbound			Southbound			Eastbound			Westbound			Overall LOS
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	
Salem	0.6	D		C		N/A		C	C		D	A		C
Five Mile	1.9	D	D	C	D	D	C	<b>C</b>	<b>E</b>		E	C	B	D
Forest/Mall	1.3	C	C	C	C	C	C	B	C		B	B	B	C
Wolfangle	0.6	D		C	C	C		B	B		B	B		C
Asbury	0.3	D	D		D	D		B	C		C	B		C
King Louis Ct	0.3	C		C	C	C		A	C		B	B	A	B
Nagel	1.0		C		D	C		B	B		B	B		C
Eight Mile	1.0	D		D	<b>E</b>	<b>E</b>		<b>F</b>	C		C	D		D
Nordyke	0.5		D			D		A	A		B	A		B

Rate - Crashes/Million Vehicles Entering the Intersection

Lt: Left turn movement  
 Th: Through Traffic  
 Rt: Right Turn Movement

Capacity analyses at the Eight Mile Road intersection show an overall Level of Service (LOS) D, with average delays over 51 sec./vehicle. While the overall LOS is considered acceptable, the volume of traffic passing through the intersection is approaching the maximum capacity of the intersection, as currently configured – Volume/Capacity ratio nearing 1.0. The westbound Beechmont Avenue traffic is experiencing delays in excess of 50 sec./veh. through the Eight Mile intersection. Adding a right turn lane on this approach would reduce and westbound delays to less than 36 sec./veh.

Significant delays are also observed on both Eight Mile Road approaches, particularly southbound, where average delays exceed 65 sec./veh. Adding a southbound right turn lane would reduce delay on this approach to 50 sec./veh. (LOS D), though the left turn would remain high (70 sec./veh.). Adding a northbound right turn lane would separate these vehicles from the through traffic, reducing northbound delay from 45 sec. to 38 sec./veh., but the additional gaps in through traffic would increase left turn opportunities, dropping the southbound left turn delay to 40 sec./veh. Constructing all 3 right turn lanes would decrease average delay through the intersection from 51 sec./veh. to 37 sec./veh. (LOS D).

Average delays passing through the Five Mile intersection exceed 46 sec./veh. (LOS D), including eastbound delays that exceed 60 sec./veh. (LOS E). Volume/capacity ratios exceed 0.93 on all approaches (eastbound V/C = 1.03), meaning very little reserve capacity exists to handle daily traffic fluctuations and disruptions. The Hamilton Co. Engineer's Office (HCEO) and ODOT plan to construct an eastbound right turn lane from Beechmont onto Five Mile. This improvement would lower eastbound delay to 44 sec./veh. (v/c ratio of 0.93) and an overall average intersection delay to 41 seconds per vehicle.

The HCEO and ODOT are also planning to construct an eastbound right turn lane from Beechmont onto Forest Road. This improvement would reduce delay on the eastbound approach from 26 sec./veh. to 21 sec., and reduce the overall average delay within the intersection from 25 sec./veh. to 22 sec.

# Future Plans - Where do we go from Here?

## ACCESS REGULATIONS

### *ODOT Access Management Guidelines*

The Ohio Department of Transportation (ODOT) adopted an Access Management Manual in 1999 to establish standards and procedures to protect the function, utility, capacity and safety of the state highway system. This manual standardizes access design, spacing and location by roadway function and access classification. Beechmont Avenue (SR 125) is classified as an Access Category III – Area of High Emphasis. According to ODOT “highways in this category are designed and intended to provide mobility at moderate to high speeds, volumes, and distances for interregional, intercity, and intra-city travel.” ODOT recommends high volume drives or side roads be spaced approximately ½ mile apart, with expectations for a traffic signal at these locations, provided warrants are met. High volume driveways are defined as 200 or more trips during the peak hour. On Beechmont, these drives would typically serve several high traffic businesses, large shopping centers or the combined entrance for multiple properties (like the Pinnacle project).

Minimum driveway spacing for medium volume drives is 305 feet, based on 40 MPH travel speeds and Stopping Sight Distance, though these driveways could be restricted to Right-In/Right-Out operation. Low volume driveways are discouraged. Clearly the type of roadway being recommended is one with a minimum number of full access driveways, with the vast majority of left turns directed to the signalized intersections. Looking at Beechmont Avenue from a macro viewpoint, existing signals are spaced an average of 1450 feet apart, and are located at existing approach roadways. With no new signals planned (except the New England Club Drive project), it becomes apparent how important it is to connect all developments in the corridor to the existing side streets and signalized intersections. Frontage roads, parking lot combinations and cross parcel easements would be required to deliver vehicles to the side roads. Recommended spacing is shown below:

**Table 8**  
**ODOT Access Spacing Summary (SR 125)**

	Recommended Access Spacing		
	High Volume (> 200 peak hr trips)	Medium/Low Volume (5-200 peak hr trips)	Minimum Use Drive (≤5 peak hour trips)
Principal Urban Arterial <b>Access Category III High</b>	2600' (signalized)	305 ft. (Rt-In/Out <sup>1</sup> )	305 ft.

<sup>1</sup> Left turns allowed with ODOT permission/traffic study.

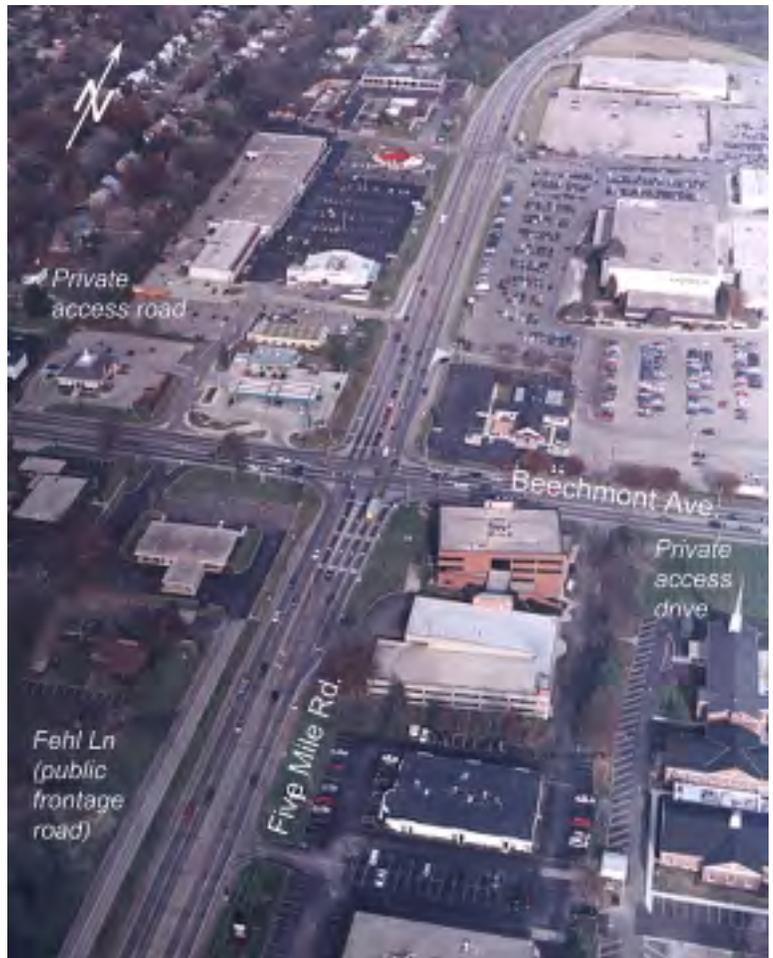
### *Hamilton County Access Regulations*

All major public side roads in the corridor are County roadways, including 8 of the 9 signalized intersections. Township roads in the study area include King Louis Court (signalized), Pamela Drive and Collinsdale Road and several other local residential streets. New England Club Drive is a private roadway. Hamilton County adopted access management guidelines to govern access spacing and design on County and Township road in January 2005. With ODOT regulations directing access to major side roads instead of Beechmont, minimum driveway spacing from the corner becomes an important consideration. Corner spacing is important to minimize the impact of vehicles using side road access on the operation of the Beechmont Avenue. Left turn lanes on side streets, into the access drives, becomes important to avoid side road queues from backing up onto Beechmont Avenue. At many intersections, this will push the main access to a parcel towards the rear of the parcel.

**Table 9**  
**Hamilton Co. Access Spacing Summary**

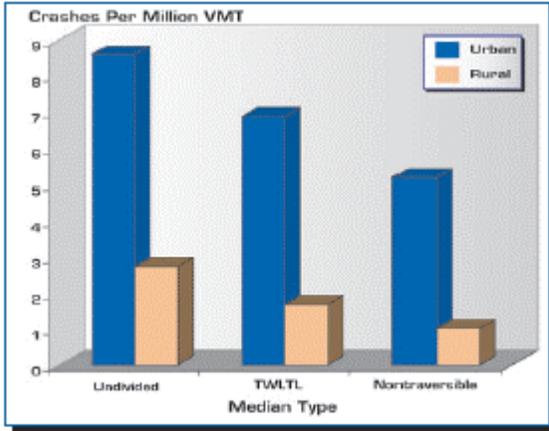
	Minimum Full Access Driveway Spacing			
	Major Arterial	Minor Arterial	Major Collector	Minor Collector
High Volume Drive > 200 peak hour trips	405' – 450'	245' – 280'	175' – 210'	175' – 210'
Medium Volume Drive 100-200 peak hr trips	315' – 360'	175' – 210'	140' – 175'	140' – 175'
Low Volume Drive 10-99 peak hr trips	315' – 360'	175' – 210'	140' – 175'	140' – 175'
Very Low Volume Dr < 10 peak hr trips	180' – 225'	105' – 140'	35'-70'	35'-70'
Spacing from Corner	405'	245'	210'	175'
Applicable Roadways	Salem Rd, Eight Mile Rd.		Markley, Paddison, Forest, Wolfangle, Witt, Nagel, Nordyke	

Five Mile Road is classified as a major expressway, with no access recommended except at ½ mile spacing (2640 ft.). At present, signalized access is provided 1250 ft. south of Beechmont Avenue at Nimitzview Drive (Beechmont Corridor project) and 1200 ft. north at the entrance to the Anderson Towne Center and Five Mile Retail Center.



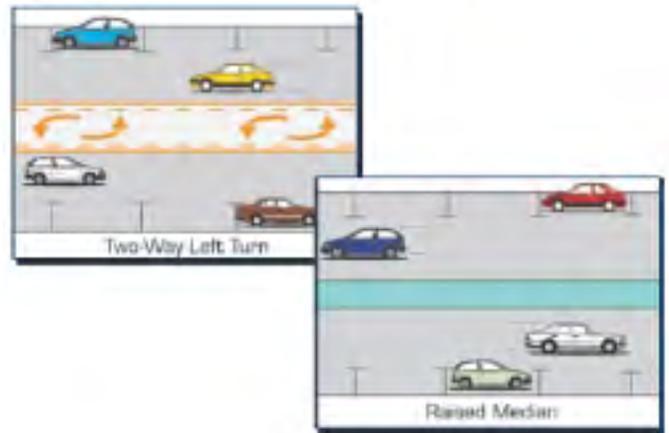
## BEECHMONT MEDIAN TYPE

Beechmont Avenue (SR 125) is a five lane, principal urban arterial with 35,000 to 40,000 vehicle per day traveling through Anderson Township. The center median lane is marked with designated left turn lanes at all signalized intersections and selected other major turning locations. The remaining areas are marked as a Two-Way Left Turn lane (TWLTL), or “suicide lane” as it commonly known.



Median treatments are among the most controversial topics in access management, and have proven to be among the most controversial topics within the Beechmont Avenue corridor. The two median treatments appropriate for Beechmont (SR 125) are the existing two-way left turn lane and a raised or non-traversable median. There have been numerous studies of the safety, capacity and economic impacts of medians since the publication of the Beechmont Corridor Study (1996). According to an analysis of crash data by the Transportation Research Board (NCHRP Report 420 – *Impacts of Access Management Techniques*), raised medians reduce crashes by over 40% in urban areas.

Taken from NCHRP Report 420 – *Impacts of Access Management Techniques and FHWA Benefits of Access Management*



Raised medians within the context of this study are recommended for their ability to physically restrict all left turns at critical locations, benefiting overall traffic flow. Wholesale construction of raised medians through the corridor is not recommended at this time, particularly within the limits of left turn lanes at major intersections and in many areas without alternative access options. The existing 12 ft. median is generally not considered wide enough for a left turn lane, raised median and appropriate inside shoulders, although a barrier curb could be installed alongside a left turn lane at critical locations if required. At no location are medians to be installed in areas that would require left turning traffic to wait within the through lanes.

Without adequate access options, vehicles attempting to access properties in these areas will likely find alternative routes, such as those discussed below. Care should be taken to insure these routes are not less desirable than existing patterns. Furthermore, islands must be constructed to allow adequate queues within left turn lanes at the intersections to avoid backups into the through lanes. With these constraints, sections available for landscaped medians are limited.

Both the Landscape and Vision Studies recommended medians be landscaped to visually break up the wide expanse of pavement. Should these medians be landscaped, sight distance and maintenance restrictions will be necessary to insure these medians represent a benefit to traffic safety and not a present a hazard.

Potential raised median locations were identified by their capacity to restrict significant volumes of left turns, minimal disruption to intersection operations and the availability of access alternatives on adjacent parcels. Ohio law permits U-turns on state routes unless specifically prohibited. In the case of the recommended locations, alternative access is available to the adjacent parcels in the area. Though it is understood there may be an increase in U-turns on the corridor, the total volume is expected to be light. The medians are located such that these U-turns would take place in advance of the general vicinity of the signalized intersections. Potential locations are shown on the [Improvement Plans \(Figures 1-14\)](#), including:

- Between Forest and Wolfangle Roads, modifying the eastern entrance to the Anderson Towne Center and opposing drive to Right-In/Right-Out operation. This median would be 400 feet long, stopping short of the left turn bays for the adjacent signalized intersections. This location would separate the smaller, individual parcel businesses east of Wolfangle from the larger, set-back businesses at the Towne Center/former Kroger site. Full access entrance to the Core Resources site (7625 Beechmont) and Woeste Chevrolet would be maintained by aligning opposite each other.
- Between Asbury and King Louis Court, modifying the eastern entrance to the IHM Church and drives to several smaller parcels on the south side of the corridor. This 500 ft. long median would stop short of the adjacent left turn bays for the adjacent signals. Alternative access to the IHM Church is available through the Pinnacle connections, while private access connections from King Louis Court and Asbury Road would accommodate access to most of the south side parcels.
- East of Eight Mile, and west of the Nordyke intersection, modifying several drives on both sides of the road to Right-In/Right-Out operation. This median would be 500 feet long, stopping short of the left turn bays for the adjacent *un*signalized intersections to Pamela Dr and the Beechmont Square Shopping Center.

The section of Beechmont between the City of Cincinnati and Salem Road is dramatically different from the heavily developed, commercial section to the east. Land use is predominantly single family residential, with a mix of institutional uses – Beech Acres Orphanage, Mt. Washington Care Center, etc. The 2005 Anderson Township Comprehensive Plan calls for this area to remain residential and development pressure has historically been light. Within this area, single-family homes sit close to the road, each with individual driveways. Traffic volumes drop in this area to approximately 18,000 vehicles per day (50% of the traffic east of Five Mile).

Both the Beechmont Landscape Plan and the Vision Plan recognized the residential nature of this area, the separate sense of place and the importance of changing the character of the roadway from the busy, urbanized atmosphere to the east. The traffic calming benefits of reducing the apparent pavement widths are an important factor in reducing operating speed and modifying driver behavior. A raised median would also reduce the potential for head-on crashes within this section. With the reduced traffic volumes, limited access, and low number of turning vehicles, adding landscape medians would reduce the impact of the existing 70 ft. wide pavement within the context of this residential zone. Two locations have been identified as potential locations:

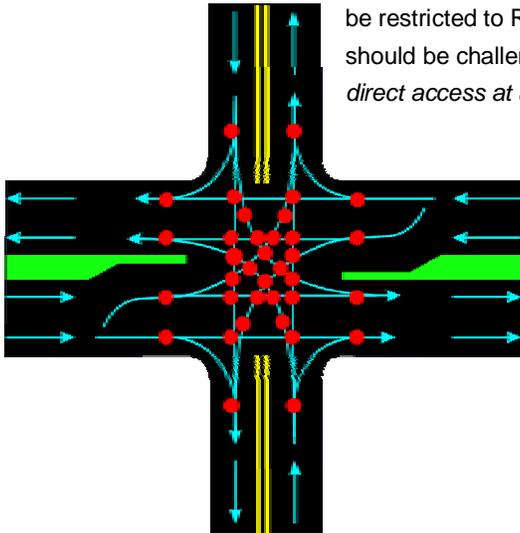
- Between Beech Acres and Voll Road, defining the entrance to the residential portion of the corridor in the Township from the commercial uses in the City. This median would be 800 feet long and requires approximately 20 residents along Beechmont to make U-turns. This location was recommended in the Landscape and Vision Plans for the sense of place and gateway qualities of this location.
- Between Tallberry and Salem Roads, defining the transition from residential land use to the commercial area beginning at Salem. This median would be approximately 500 feet long and would require 7 residents along the south side of Beechmont Avenue to make U-turns. Adding a landscape median in this area would enhance the existing green break provided by the Guardian Angels Cemetery along the north side and provide a prominent break between the commercial and residential land uses.

Prospective roadside trees and landscape median between Forest and Wolfangle Roads, as shown in the Landscape Plan by Eric Doepke Assoc. (2001).



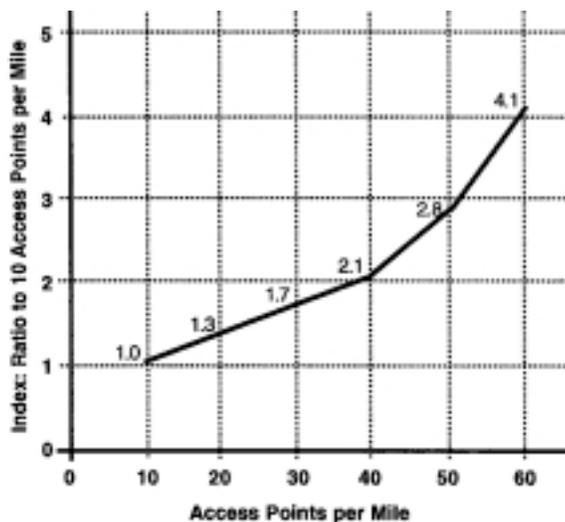
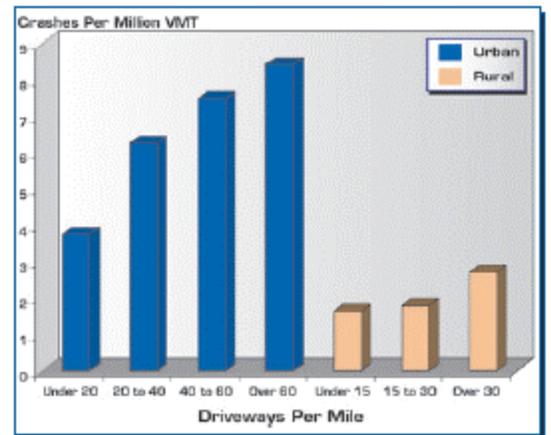
## DRIVEWAY CLOSURES

Many properties on the corridor have several driveways, or even one “continuous driveway.” Multiple drives greatly increase potential conflict points on Beechmont Avenue, but they do not always improve access to a property. In many cases, simply closing a drive, or one of several driveways, as shown on the **Improvement Plans (Figures 1 - 14)** may not impede a customer’s ability to access a business at all. Combining several driveways into one can actually improve flow into parking lots, provide an opportunity to replace poorly designed drives and may even provide better use of parking areas. According to the minimum recommended access spacing by ODOT, only the larger shopping centers will merit more than 1 drive, and many drives will be restricted to Right-In/Right-Out control. Even the concept of a driveway for every parcel should be challenged. *With proper design, many parcels could operate quite efficiently with no direct access at all, but through combined access with neighbors.*



From a sheer numbers standpoint, every full access driveway on the corridor represents another 32 potential conflict points between turning traffic and through Beechmont traffic. Large numbers of drives magnifies the number of potential conflicts motorists must perceive, analyze and make decisions about. Fewer drives, spaced further apart, present few challenges to motorists, increasing crashes and slowing mainline traffic.

According to research by the Transportation Research Board (NCHRP Report 420 – *Impacts of Access Management Techniques*), roadway speeds are reduced an average of 2.5 MPH for every 10 additional access points per mile (maximum 10 MPH reduction). This research also showed a linear relationship between the number of access points and the number of crashes on a roadway.



**Figure 15 - Composite accident rate indices NCHRP 420 - “Impacts of Access Management”**

ODOT guidelines also direct access to adjacent side roads wherever feasible. A number of driveways onto Beechmont Avenue, including those in the most critical locations near signalized intersections, could be eliminated by relocating access at corner businesses to the adjacent side street or more acceptable locations on Beechmont. Most of these side streets are lower-volume more able to handle the additional traffic. Access to side roads would need to conform to County Access Guidelines. Recommended driveway closures and restrictions are shown on Figures 1-14, and summarized in Table 10.

Table 10  
**Crash Rates by Type of Median**

Total Access Points/Mile	Median Type		
	Undivided	Two-Way Left Turn Lane	Non Traversable Median
≤ 20	3.8	3.4	2.9
20 – 40	7.3	5.9	5.1
40 – 60	9.4	7.9	6.8
> 60	10.6	9.2	8.2
<b>All</b>	<b>9.0</b>	<b>6.9</b>	<b>5.6</b>

Taken from NCHRP Report 420 – *Impacts of Access Management Techniques*.  
 Data includes a mix of signalized and unsignalized access points, in both urban and rural areas.  
 Crash rates shown in number of crashes per million vehicle miles traveled.

Sharing a single curb cut is another way to reduce the total number of driveways. Typically, individual businesses require only reasonable access to their business, not necessarily their own dedicated driveways. Combining drives to one shared drive, near the property line would cut the number of drives in half. Carrying it one step further - shared parking areas could provide additional parking spaces, or through the Township's Shared Parking Agreement, reduce the number of required spaces.

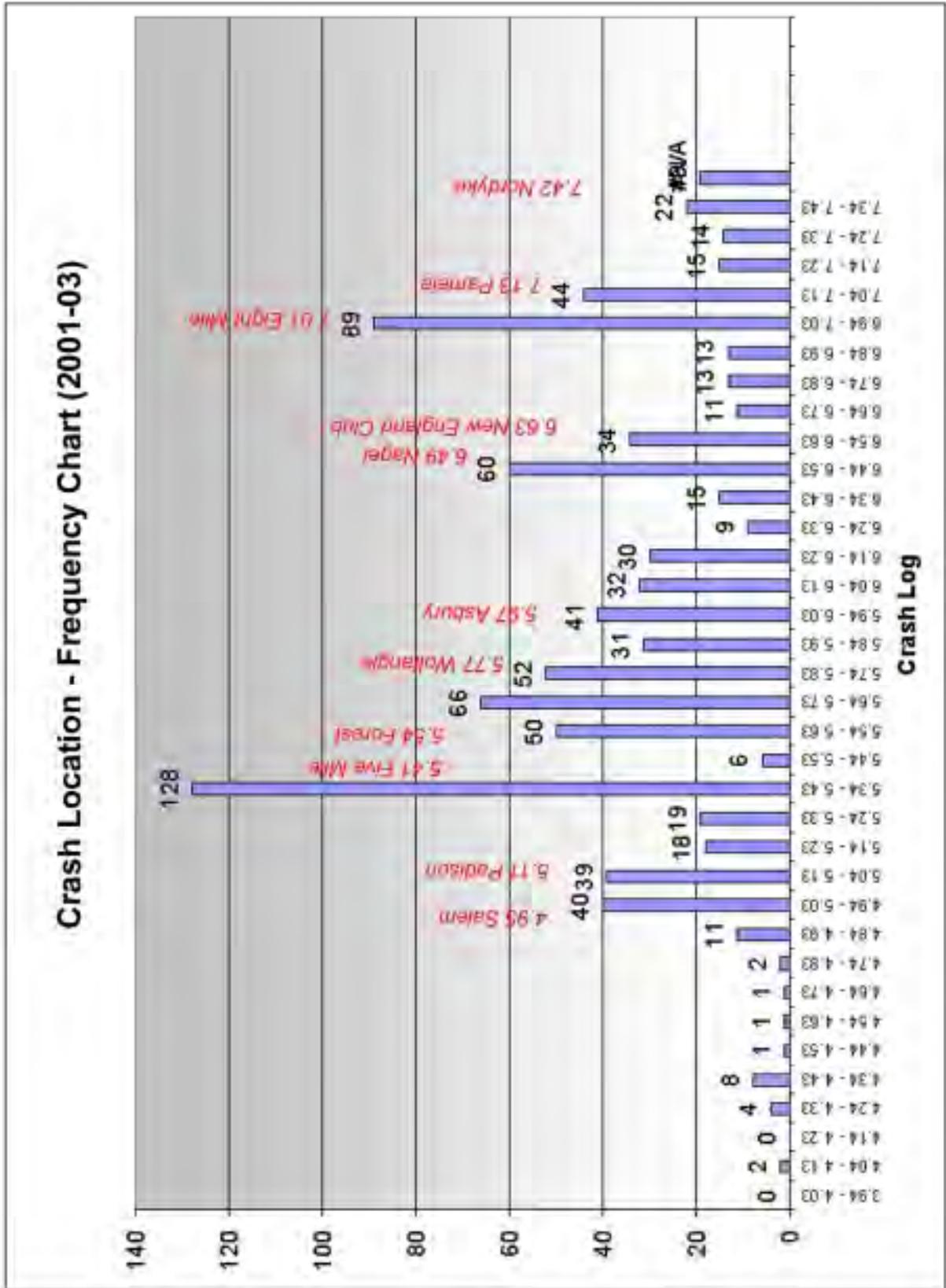


High volume driveways may require right turn deceleration lanes and minimize the impacts of slowing traffic, such as this entrance to the Pinnacle development.

**Table 11**  
**Recommended Driveway Closures**

Section	ADT	Total Crash	Crash Rate	Section Length	Exist. Drives		Ex. Drive Spacing	Proposed	
					North	South		Closures	Restrict
City Line to Salem	17,980	38	N/A	4600'				3 (N/A)	
Salem to Markley	28,920	47	2.7	700'	10	7	65'/90'	8 (47%)	2 (12%)
Markley to Five Mile	36,868	124	3.8	1800'	14	12	120'/140'	10 (38%)	2 (8%)
Five Mile to Forest	37,156	95	2.8	700'	1	1	350'/350'	0 (0%)	2 (100%)
Forest to Wolfangle	37,857	109	2.6	1200'	5	5	200'/200'	4 (40%)	2 (20%)
Wolfangle to Asbury	39,170	85	1.7	1050'	15	9	66'/105'	10 (42%)	3 (12%)
Asbury - King Louis	34,196	62	3.4	1100'	6	13	160'/80'	5 (26%)	6 (31%)
King Louis to Nagel	36,864	72	1.7	1600'	10	17	145'/90'	9 (33%)	2 (7%)
Nagel to Eight Mile	36,532	165	1.9	2750'	17	13	150'/200'	7 (23%)	7 (23%)
Eight Mile - Co. Line	34,376	143	3.0	2650'	24	25	105'/102'	20 (41%)	3 (6%)

Rate in Crashes/Million Vehicle Miles (not including crashes at signalized intersections).  
 Recommended driveway closures, combinations and restrictions are detailed on the [Improvement Plans \(Figures 1-14\)](#).



## ACCESS OR FRONTAGE ROADS

The ability to provide access between adjacent parcels is a critical element in improving traffic flow along Beechmont Avenue *and* improving access to the corridor's businesses. These access connections can take several forms, from public service roads, to informal parking lot connections. The most obvious benefit of providing access between parcels is the ability of vehicles to visit several businesses without traveling out onto Beechmont Avenue, reducing the number of turning vehicles and improving access to connected businesses.

Connections to traffic signals provides an increased benefit of cross parcel access, reducing unsignalized left turns, improving business marketability and decreasing mainline crashes.

### *Private Service Roads*

Private connections include a wide variety of designs, configurations and styles, all depending upon the individual business or property owners needs and the individual characteristics of the properties. Some may look and feel exactly like of public road (New England Club Drive), while others may simply consist of linked parking aisles between businesses. While these connections would require private funding, their design and function would be as flexible as needed. Maintenance would be the responsibility and control of the individual property owners. Individual access and maintenance agreements between the affected property owners are strongly recommended to clearly define maintenance responsibilities and funding decisions.

### *Public Access Roads*

Formalized public service road connecting several properties typically connect several businesses to one or more public streets. These roads can handle significant traffic volumes, are designed to local road standards and are maintained by public agencies, but they require public roadway standards, rights of way and setbacks.

### *Access Easements and Maintenance Agreements*

A public access easement is another tool that may be used for important, multi-parcel access connections that would allow public funding to be used without the inherent restrictions of public right of way. This type of connection would allow for public maintenance and traffic control, without requiring public right of way widths, setbacks and design standards.

No matter what the funding mechanism, maintenance responsibilities should be clearly spelled out before beginning the project. Typically, public roadways would be maintained by the applicable public agency – ODOT, HCEO or Township. Private facilities would likewise be the responsibility and direction of the individual property owners. Connections on public access easements would likely be the responsibility of the appropriate public agency – most likely the Township – though each situation could be very different from the others. Individual access and maintenance agreements between the affected property owners are strongly recommended to clearly define maintenance responsibilities and funding decisions.

### *Recommended Access Roadways*

The Recommended Improvement Plans (Figures 1-14) include several recommended access roadways, both public and private. Most of those recommended connections could take a variety of forms - from public roadways to private parking lot connections - and effectively provide the access connections needed within these areas. The following is a description of several of the more important recommended access roads:

- The assembly of auto sales on the southeast corner of Nordyke and Beechmont currently has 3 drives within 300 feet of the intersection (5 within 500 ft.), including 2 within the limits of the left turn lane to Nordyke. The rear lots of these dealerships connect to Nordyke Road, but this connection is kept gated for security. Opening this connection – and promoting it – would provide an easy connection to the traffic signal at Nordyke Road, and reduce or eliminate unsignalized left turns from the immediate vicinity of the Nordyke signal. Driveway closures are recommended in conjunction with this roadway (see Figure 14). Given security concerns and similar ownership, this connection would likely be privately constructed and maintained.
- Extension of the Beechmont Square/Target access road to the west would provide an opportunity to connect several additional businesses to this complex and the signalized access at Nordyke and the Cherry Grove Center (see Figure 14). Without a direct connection to a public roadway, these connections would probably be privately completed.
- The planned New England Club Drive traffic signal includes extending the existing private access drive another 100 feet to the east, across the back of Adam's Heating (see Figure 11). The owners of the Sears Retail Center have elected not to connect to this roadway at this time. Efforts to connect these parcels together should continue to enable connections between these parcels and provide customers of the Retail Center with access to the new signal.
- The redevelopment of the Festival Market has substantially increased unsignalized left turns at this drive. A connection through King Pin Lanes to Asbury Road to the east would provide access to the traffic signal at Asbury, as well as direct access to area residents without access to Beechmont (see Figure 8). Originating somewhat out of sight between the two buildings, directional signage may be needed within the development to encourage use of this connection. With only a single development, this connection may be best constructed privately, although particularly attention should be given to making this connection possible within potential redevelopment possibilities.
- Eight individual parcels are within the 800 feet between Wolfangle and Asbury Roads, with 14 drives on the north side of Beechmont (1 drive every 60 ft.). Connecting or combining parking lots and creating cross access easements could be constructed as either a public roadway or a private facility (see Figure 8). A public facility would have the highest capacity, but a private facility would allow the most flexibility in design and location to avoid existing buildings or parking.



- The southern leg of the Wolfangle intersection is currently a private road with access for McDonald's and the Eastern Hills Beauty School. Additional access opportunities to the road would significantly help ease several area access problems. A connection to the west, along the rear of the Buddy Rogers and Core Resources retail center (7625 Beechmont) would provide signalized access for these developments, and allow closure of both Buddy Rogers drives (with connection to the McDonald's drive) and left turn restrictions at several other drives (see Figure 8). This section between Forest and Wolfangle has experienced some of the higher crash rates on the corridor. A raised median island has been proposed to restrict left turns in this area, particularly at



the Anderson Town Center/Stein-Mart entrance (see Figure 7). A connection to the east may also be possible to connect the Festival Market center to the Wolfangle signal, though this connection would require extensive coordination with McDonald's and the Beauty School to limit impacts to these properties. This entire access network could remain private, or the main entrance road opposite Wolfangle could become public to solidify access and maintenance possibilities.

- With an intersection the size and volume of the Five Mile intersection, limiting drives is elevated in importance, and requires additional spacing from the intersection to avoid conflicts with left turn queues. The southwest quadrant of this intersection is an area that could benefit from a combined shared parking area/access connection to the rear of these properties, connecting to Fehl Lane (see Figure 6). Fehl Lane is the public access road that parallels Five Mile Road, providing signalized access through the Nimitzview traffic signal to Five Mile Road. This section includes 5 drives along the south side of Beechmont within 550 ft., including the PNC drive, already restricted as a Beechmont Corridor improvement. While space and grading to the rear of these properties present significant challenges, combining parking lots and a connection to Fehl Lane would significantly improve the function of this area, maximize the efficiency of parking in this area and reduce left turn requirements onto Beechmont, within the eastbound approach to Five Mile Road. Currently, the Comey and Sheperd, First Church of Christian Scientist Church and 7773 Beechmont office building all have individual entrances and sharply divided parking lots, despite rather different peak parking demands. A private project to combine these lots could take advantage of these differing operations under the Township's new Shared Parking Agreement to maximize parking for all three parcels.

## NON-TRADITIONAL PROJECTS

### *Pedestrian Circulation/Safety*

The Beechmont Corridor Plan's reliance on redevelopment to construct sidewalks along Beechmont Avenue has resulted in an increase in the amount of sidewalk within the corridor, but at a rather slow pace. The Township has taken the initiative to construct walks along the north side of Beechmont, between Tallberry and Five Mile Road (construction in late 2005) as the redevelopment potential in this region seemed rather low – cemetery, small offices and residential.

It is recommended that the Township continue this approach through the Anderson Trails Plan to accelerate sidewalk construction along the corridor. The highest impact will be realized by prioritizing stretches that link existing walks together, particularly to larger pedestrian destinations and signalized intersections. Improving pedestrian access to signalized crossings will realize the most direct safety benefits in discouraging the unsignalized pedestrian crossings of Beechmont. Specific areas that may benefit from this approach include the east of Five Mile, between Asbury and Wolfangle Roads and the Nagel Road vicinity.

Priority should also include recognizing areas of limited or long-term redevelopment potential as likely areas for construction.

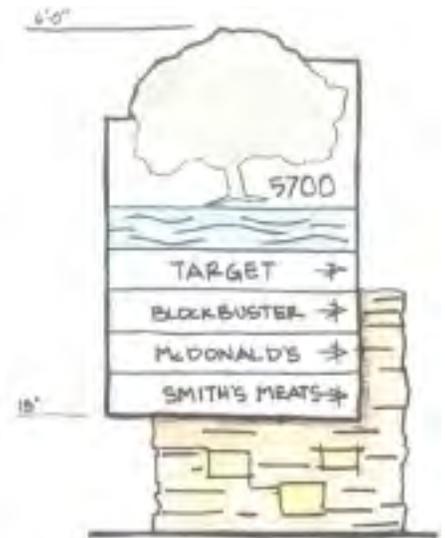
### *Wayfinding*

The block address signage installed as part of the Corridor project has been very successful in increasing the ability of motorists to find specific destinations within the corridor, reducing the number of distracted motorists and potential rear-end crashes. Not all motorists on Beechmont have a commercial destination in mind. Many are using Beechmont as a major arterial, while others destined for one of the many side street collectors to access a separate destination within the Township. Driving the corridor as an unfamiliar motorist presents a very difficult time identifying side streets well in advance the intersection. This confusion can lead to both rear end crashes as well as sideswipe crashes (changing lanes) approaching the intersections. Advance signage of upcoming intersections is recommended to increase motorists' awareness within the corridor and reduce accident potential.

As frontage roads and access across parcels become more common, motorists will become more aware of their presence and operation. Still, expecting all motorists to drive past a commercial destination on the corridor, to turn into the next signalized drive without first slowing at the business may be optimistic. To help identify these combined access opportunities and identify entrance routes, the Township has been investigating the possibility of additional signage within a comprehensive plan.

For motorists in the business corridor, directional signage is already in use in the corridor and encouraged within the zoning codes.

Additional wayfinding signage is recommended in the Vision Plan to help motorists identify proper access locations to multiple businesses, particularly where entrances are down the street from the business. Current zoning prohibits off-property signage for private businesses to avoid excessive advertising. With close oversight, use of these signs is recommended as an important tool for identifying available access routes and minimizing confusion similar to the block address signage. These signs could be by special permit, or even publicly owned. They would need to be located in visible locations, but off of the right-of-way to avoid blocking sight distance.



### *Landscaping*

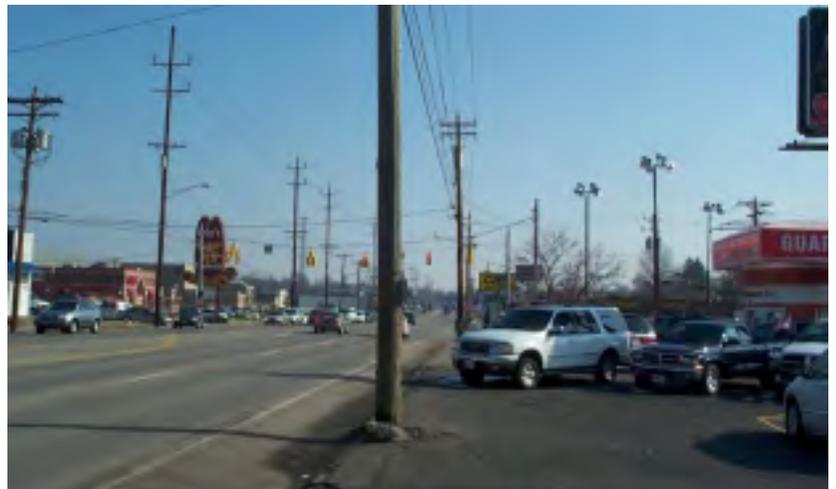
Anderson Township completed a Landscape Plan in 2001 for the Beechmont Corridor, calling for an increased green presence to improve corridor aesthetics, help separate driveways and provide a greater sense of place for specific nodes (rather than one long homogeneous corridor). Beginning in 2003, the Township has installed over 80 trees within the corridor, outside of the right of way to improve the visual character of the corridor.

Additional planting of trees and landscaping without obstructing sight distance is encouraged to help screen some of the visual clutter for area motorists, improving their ability to perceive potential problems and reducing visual distractions. Landscaping to help create nodes or green breaks within the corridor is also encouraged to visually break up the corridor and improve motorists sense of place within the corridor. These nodes should also help identify public cross streets and their location to reduce driver confusion.

Landscaping can offer substantial benefits to traffic operation along the corridor, if properly designed. Conversely, large trees, high shrubs and planted mounds often impair sight distance and complicate safety concerns when placed too close to the roadway. Properly designed landscaping, though, can reduce visual congestion and assist the motorist in identifying driveways, businesses and potential conflicts.

Moving parking lots away from the roadway's edge and using landscaping to buffer parking lots offers a visible barrier, reducing visual clutter, delineating sections without driveways, highlight driveways and eliminating potential confusion from parked vehicles. These concepts, outlined as greenways in the "Beechmont Landscape Plan," are clearly in line with access management goals of reducing driver decisions.

Areas where landscaping could be an effective tool in reducing the impact of parking lots on traffic flow, reducing the number of conflicting decisions motorists are required to make, include the King Pin development near Asbury Road.



The most dramatic addition of landscaping to the corridor would be in the form of raised, landscaped medians - recommended in the Landscape Plan to break up the pavement, separate oncoming traffic and offer a visual relief for Beechmont motorists. Based on previous public involvement efforts, adding landscaped medians may be the highest priority and most popular improvement one could make along Beechmont Avenue, but it may also be the most controversial. Specifically constructing landscape medians for aesthetic reasons could present a multitude of traffic, maintenance, safety and access problems for area motorists. The traffic benefits of raised medians, especially when properly designed and landscaped, can be very beneficial by physically preventing left turns, though incorrectly designed medians could cause additional safety problems.

With local and State cooperation and support, some of these islands could be landscaped, within limitations. Generally, these islands would need to be at least 4 feet wide to achieve adequate aesthetic enhancements, and no more than 2 feet high to avoid sight distance encroachments. Among the principal concerns for ODOT would be the identification of maintenance responsibilities and the safety of the maintenance workers. Potential median locations – landscaped or not – are shown on the [Plans \(Sheet 1-16\)](#).

### *Crash location Identification*

The Safe Community Program and standard traffic engineering practices have helped establish the Beechmont Corridor Plan on data driven decisions. Crash data, traffic volume and speed studies from the ODPS, ODOT and HCEO has been extremely helpful in formulating the recommendations, priorities and design of the Beechmont Corridor Study from its early beginnings in 1994. Crash statistics shaped the original recommendations, and continue to be used to define recommendations and priorities.

Currently, crashes are located in the field by officers using either address of location from an intersection, then recorded in databases by log points, to the 0.01 of a mile. Reporting by address on Beechmont can be complicated by the sheer size of some developments (Anderson Towne Center covers nearly 1,800 ft. of frontage) and multiple drives to individual parcels, making identification of individual problem drives difficult.

At a crash scene, an officer's focus is on securing the scene, rescue, safety and reopening the roadway as quickly as possible to prevent additional incidents. Estimating distance under this pressure is difficult at best, and can vary from officer to officer. This inexact database recording, combined with even minor variations individual in reporting do not yield the accuracy sufficient to identify individual problem driveways, particularly with a dense, urban corridor such as Beechmont Avenue.

To help improve the accuracy and value of the data collection efforts on the corridor, it is recommended ODOT, ODPS and the Township investigate the value of supplying GPS equipment to help improve the accuracy of crash locations in the field, and the reporting of these locations. Ideally, the results would include a GIS based data base that could be used to map exact locations of crashes within the Beechmont corridor, and possibly the entire Township. As good as the current database is, better location data could offer significant benefits in quickly pinpointing problem locations – intersections, geometric deficiencies, traffic control needs and problem access drives could all be targeted for immediate corrections based on ongoing trends.