

SECTION V
TRANSPORTATION
PLAN
UPDATE

***“Americans are in the habit
of never walking
if they can ride.”***



Route 22, a principal arterial, bisects the Municipality of Monroeville in an east-west direction, carrying over 40,000 vehicles daily through its core commercial area.

As part of the comprehensive planning process, Council authorized a Monroeville Comprehensive Transportation Plan in 1990.

This update includes:

- Documenting and evaluating current traffic levels of service, crash conditions and other transportation issues;
- Projecting future traffic volumes and levels of service, incorporating future land use assumptions and development intensity in Monroeville and adjoining communities;
- Developing a program of transportation enhancements in keeping with the Key

Community Transportation Goals identified in Section I of this Comprehensive Plan; and

- Identifying potential funding sources.

Study Area Identification

Sixty-three study intersections and six corridors were established during meetings with the Municipal Staff, Planning Commission, and Citizen’s Advisory Committee. The Monroeville Police Department’s Traffic Division also provided information on locations where traffic volumes and crashes were potential problems.

The study intersections and corridors are shown on Map 12 and listed in Table 27 and Table 28. The corridors were selected based on their existing traffic and/or safety deficiencies as well as their potential for future development growth.

Data Collection

To assess traffic data needs, available historical data for the study intersections and roadway corridors was compiled and reviewed. The available data included:

- Data collected for the 1990 Monroeville Comprehensive Transportation Plan, and all available traffic studies completed on behalf of developers since 1990.
- Crash information from the Pennsylvania Department of Transportation (PENNDOT) for State roadways within Monroeville for the three-year period. Additional crash information was also obtained from the Monroeville Police Department for county and local roadways.
- Current bus route information from the Port Authority of Allegheny County (PAT); and
- The latest signal permit plans for the signalized study intersections from the PENNDOT and Monroeville.

Subsequently, a data collection plan to obtain additional information was submitted to the Municipal staff and Citizens Advisory Committee for review. The final data collection activities included:

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Table 27**Primary Study Routes Intersections**

PRIMARY STUDY ROUTE	INTERSECTING AT:
1. Old William Penn Highway	Thompson Run Road
2. Old William Penn Highway	Evergreen Drive
3. Old William Penn Highway	Duff Road
4. Old William Penn Highway	Garden City Drive
5. Old William Penn Highway	Center Road
6. Old William Penn Highway	Center Road and St. Martin Drive
7. Center Road	Beatty Road and Evergreen Drive
8. Old William Penn Highway and Mosside Boulevard	Haymaker Road and Old Haymaker Road
9. Haymaker Road	Beatty Road
10. Center Road	Logans Ferry Road and Haymaker Road
11. Beatty Road and Cooper Road	CCAC Driveway
12. Old Frankstown Road	Logans Ferry Road
13. Old Frankstown Road	Cooper Road
14. Old Frankstown Road	Hochberg Road and Lindsey Road
15. William Penn Highway/Business Route 22	Mall Boulevard and Holiday Center
16. William Penn Highway/Business Route 22	Northern Pike (West)
17. William Penn Highway/Business Route 22	Duff Road
18. William Penn Highway/Business Route 22	Center Road and Stroschein Road
19. Center Road	Garden City Drive
20. Center Road	My Way
21. William Penn Highway/ Business Route 22	McMasters Drive and LowesDrive
22. William Penn Highway/ Business Route 22	Mosside Boulevard/ Route 48
23. William Penn Highway/ Business Route 22	Turnpike Off-Ramp
24. William Penn Highway/Route 22	Old William Penn Highway
25. Old William Penn Highway	Beatty Road and Plaza Driveway
26. William Penn Highway/Route 22	Northern Pike (East)
27. William Penn Highway/Route 22	Route 286 Connection and Alpine Village Drive
28. Golden Mile Highway/Route 286	Old Frankstown Road
29. William Penn Highway/Route 22	Old William Penn and Miracle Drive
30. Northern Pike	West Patty Lane
31. Northern Pike	Westinghouse Drive
32. Mosside Boulevard/Route 48	Northern Pike
33. Monroeville Blvd./Northern Pike	Pitcairn Road
34. Monroeville Boulevard	Ivanhoe Drive
35. Monroeville Boulevard	Stroschein Road
36. Monroeville Boulevard	Municipal Drive and Northern Pike
37. Monroeville Boulevard	Wyngate Drive
38. Wyngate Drive	Tech One Drive and Anderson Lane
39. Wyngate Drive	Stroschein Road
40. Monroeville Boulevard	Jamison Lane and Oxford Drive
41. Monroeville Boulevard	James Street, Rosecrest Drive and Brinton Street
42. James Street	James North
43. James Street	Speelman Lane

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Table 27 (Continued)

Primary Study Routes Intersections

PRIMARY STUDY ROUTE	INTERSECTING AT:
44. James Street	Stepp Drive and Pleasantview Drive
45. Monroeville Road	Speelman Lane and Monroeville-Wilmerding Road
46. Monroeville-Wilmerding Road	Johnston Road
47. Monroeville-Wilmerding Road	Thomas Street
48. Pitcairn Road	Stroschein Road
49. Tilbrook Road	Pitcairn Road
50. Tilbrook Road	Cambridge Square Drive
51. Mosside Boulevard/ Route 48	Broadway Avenue/Route 130
52. Mosside Boulevard/ Route 48	Hillside Avenue
53. Mosside Boulevard/ Route 48	Cambridge Square Drive
54. Mosside Boulevard/ Route 48	MacBeth Drive
55. Mosside Boulevard/ Route 48	Haymaker Road and Gateway Campus Boulevard
56. Haymaker Road	McGinley Road
57. Haymaker Road	Saunders Station Road
58. Haymaker Road	Ramsey Road
59. Haymaker Road	Leslie Drive and Rush Valley Road
60. Broadway Boulevard/ Route 130	Forbes Rd., Haymaker Rd. and Shopping Center Dr.
61. Saunders Station Road	Abers Creek Road
62. Abers Creek Road	Cavitt Road
63. Cavitt Road	Alpine Village Drive

- A field reconnaissance of all study intersections and along all corridors to verify or collect information on intersection geometry, lane arrangements, lane widths, signage, signal timings and phasing (if relevant), and other operational characteristics. Existing sidewalks and bus stops were also documented.
- Manual turning movement counts at 20 study intersections between the hours of 7:00 and 9:00 A.M. and between 4:00 and 6:00 P.M. The locations of these counts are shown on Map 14.
- Two day, twenty-four hour automatic traffic recorder (ATR) counts at 28 roadway segments. These counts also classified vehicle types in order to determine truck percentages for use in the capacity analysis. The locations of these counts are also shown on Map 14.

EXISTING CONDITIONS

The following sections identify the traffic, roadway and other current transportation conditions within the Municipality of Monroeville.

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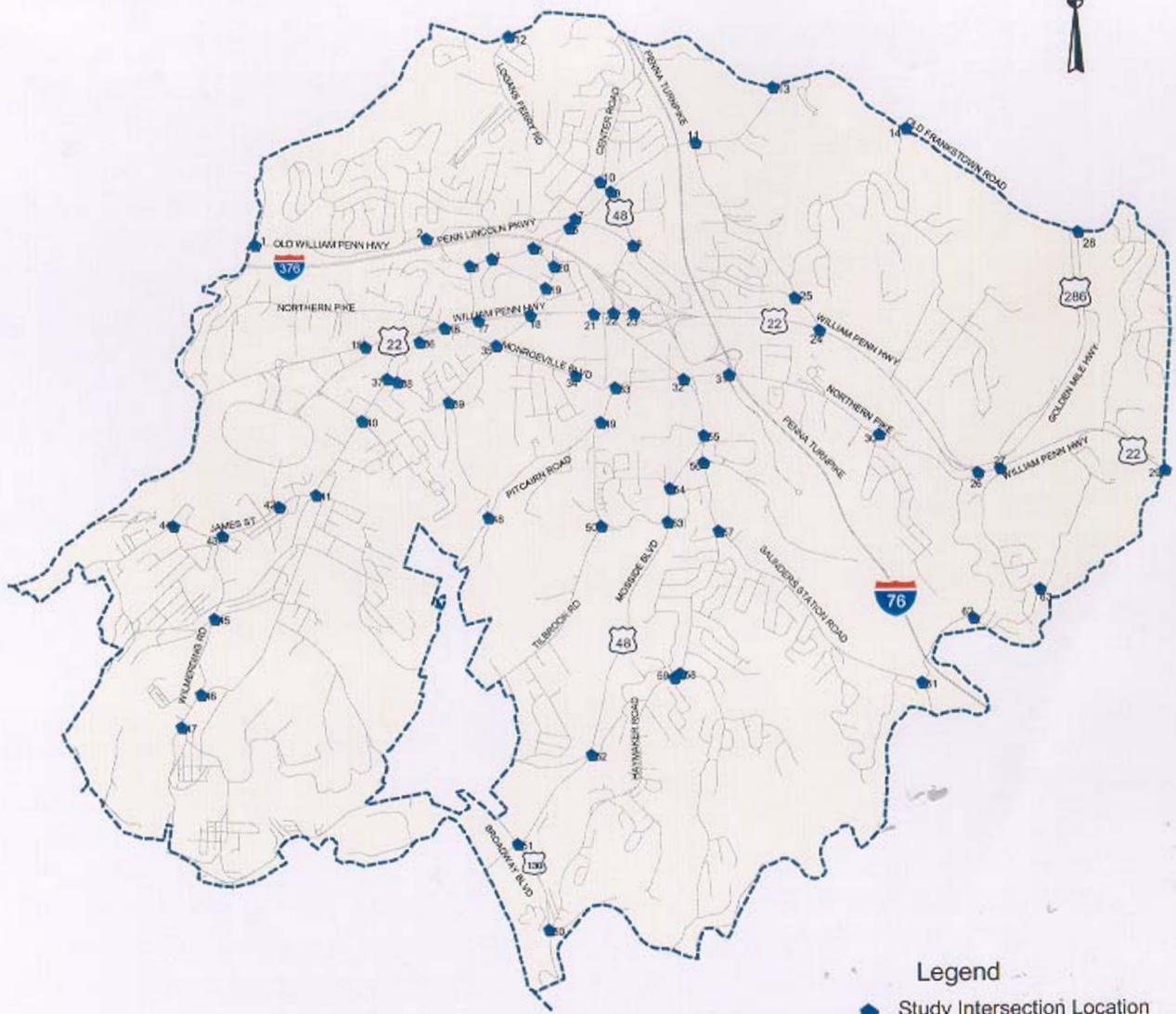
Functional Classification

Functional classification is the grouping or categorizing of roadways according to the character of service they provide as part of an overall highway system. The classification of a roadway depends on numerous factors including location (urban or rural), degree of access to adjoining property (access), traffic volumes, and the proportion of travelers using the road between other roads and locations (mobility). Design characteristics such as geometry, surface condition and vehicle speed reflect the functional classification.

The American Association of State Highway and Transportation Officials (AASHTO) classify roads into five main categories within urban areas. They are:

- Interstates and other Freeways and Expressways have two or more lanes in each travel direction, travel directions separated by a median, limited (no) access to land, and are designed for high travel speeds. They generally carry the most traffic per mile. Their function is to provide mobility and they do not directly access property, only other roads. They

M:\PROJECTS\PLANNING\DTM\map12.mxd (Map 9 - Letter - Study Intersection Map)



- Legend
-  Study Intersection Location
 -  Municipal Boundary Line



Study Intersection Map

Map 12

Municipality of Monroeville Comprehensive Plan - 2005

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Table 28

Primary Corridor Study Intersections

ROUTE	BETWEEN/AT:
1. Mosside Boulevard/Route 48	Broadway Boulevard/Route 130 and Wm. Penn Highway/Business Route 22
2. Northern Pike	Pitcairn Road and Wm. Penn Highway/Business Route 22
3. Golden Mile Highway/Route 286	Old Frankstown Road and Wm. Penn Highway/Business Route 22
4. Old William Penn Highway	Duff Road and Haymaker Road
5. Haymaker Road	Center Road, Center-Haymaker Road Ramp and Beatty Road
6. Monroeville Boulevard	Northern Pike at William Penn Highway Overpass

are usually under State jurisdiction.

- Minor Arterials connect with and augment the principal arterial system; more emphasis is placed on land access; they are important to intra-community continuity and, have lower traffic volumes than principal arterials. In urban areas, they may be under State, county and, sometimes, local jurisdiction.
- Collectors take traffic from local roads to principal and/or minor arterials, have lower traffic volumes than minor arterials, and provide both mobility and access. Design speed is low. In urban areas, they are almost always under county or local jurisdiction.
- Local Streets comprise all facilities not in one of the higher categories; permit direct access to abutting lands and connect to higher order roadways. Their function is to serve local land use with very little emphasis on mobility. Through traffic may be deliberately discouraged with low speed designs and other traffic calming measures. They are the responsibility of the local community or, within a private development, the private owner(s).

By determining how existing roads function or may function in the future and recognizing that design follows function can identify future roadway improvements and their location. Functional classification helps determine project-funding priorities;

the higher categories serve more travelers and therefore can potentially benefit more users. On the other hand, functional classification in relation to budgeting brings recognition that improvements are likely to mean a greater outlay of limited financial resources. Generally improvements to collectors and local roads are not eligible for Federal Aid, Section VII.

The functional classification of Monroeville roads is provided in Table 29 and further illustrated in Map 15.

Roadway Jurisdiction

Monroeville’s transportation system has approximately 165 miles of roadway including:

- 7.4 miles of Interstate roads owned by PENNDOT or the Turnpike Authority;
- 10.2 miles of other state owned roadway;
- 27.7 miles of county owned roadway; and
- 120 miles of municipal owned roadway.

The jurisdiction of roadways studied within Monroeville is provided in Table 29 and further illustrated in Map 13.

Traffic Counts

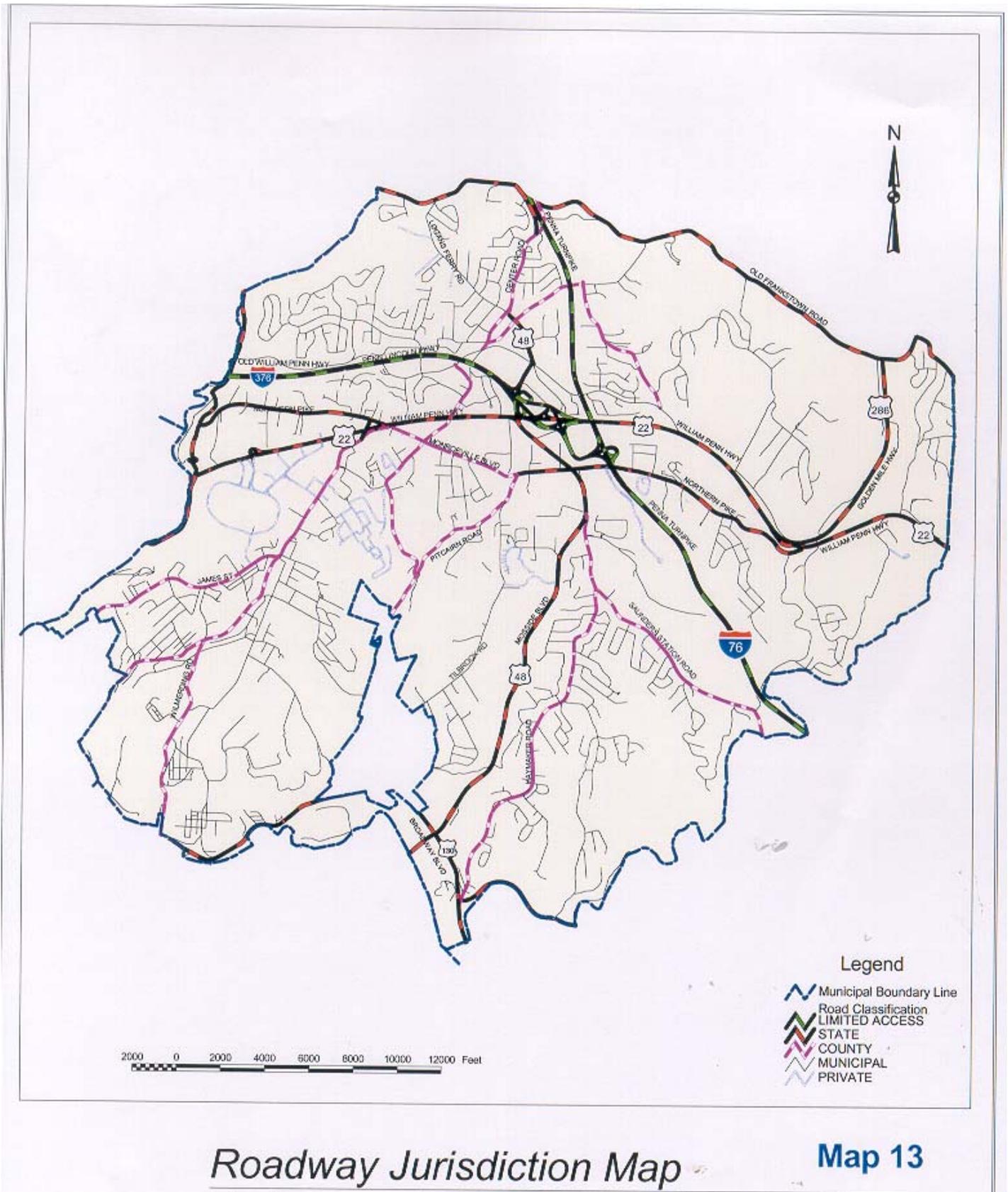
All new traffic counts were summarized and seasonally adjusted using the appropriate PENNDOT adjustment factors. The new ATR counts were then compared to the historical ATR counts to determine an

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Table 29**Roadway Functional Classifications and Jurisdictions**

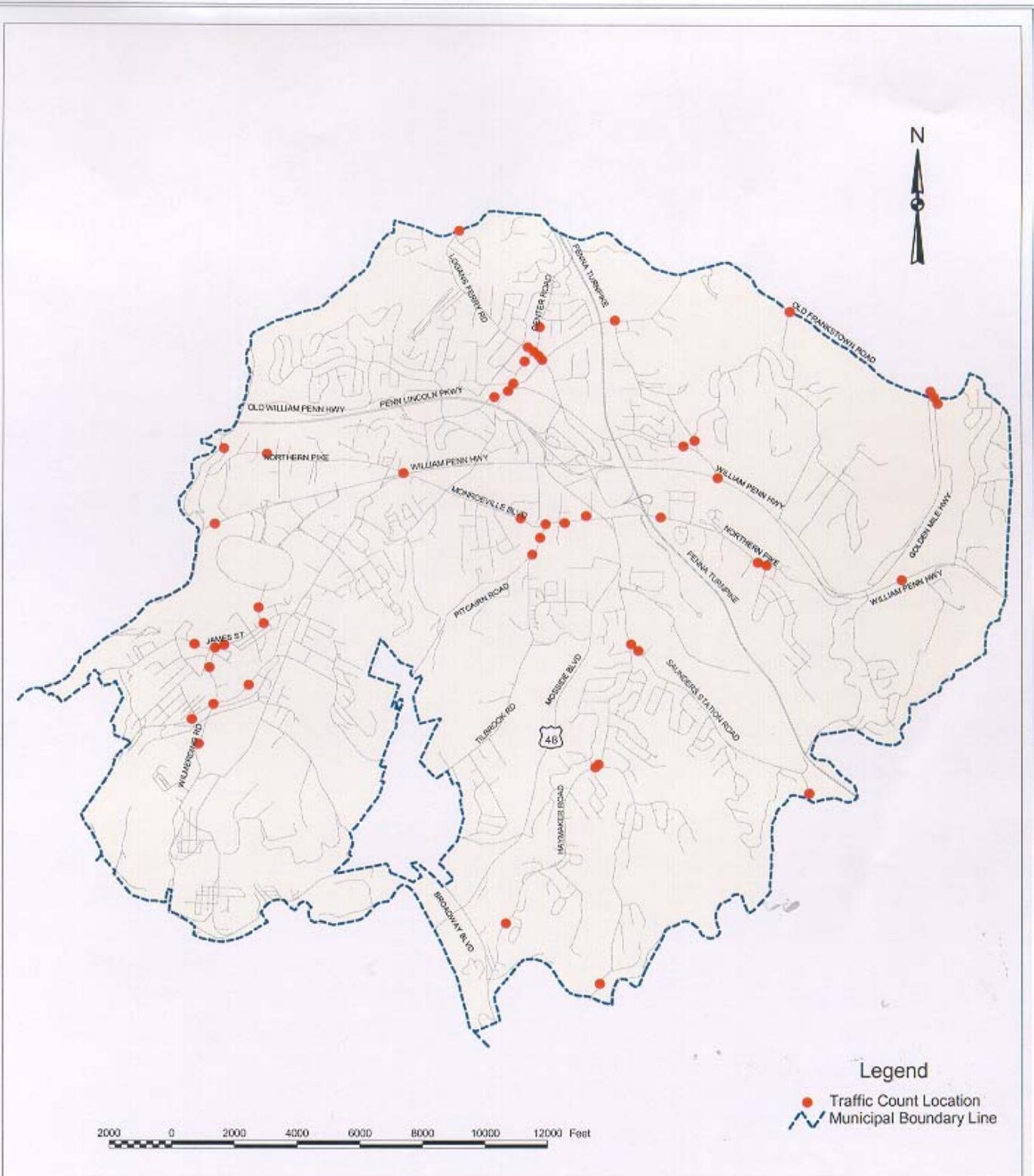
INTERSTATE			
ROADWAY NAME		JURISDICTION	
Penn-Lincoln Parkway/Interstate 376		Federal/State	
Pennsylvania Turnpike/Interstate 76		PTC	
PRINCIPAL ARTERIAL			
ROADWAY NAME		JURISDICTION	
Broadway Boulevard/Route 130		State	
Golden Mile Highway/Route 286		State	
Mosside Boulevard/Route 48		State	
William Penn Highway/Route 22		State	
MINOR ARTERIAL			
ROADWAY NAME		JURISDICTION	
Center Road		County	
Haymaker Road		County	
James Street		County	
Monroeville Boulevard		County	
Monroeville Road		County	
Northern Pike		State	
Old William Penn Highway		Municipal	
Pitcairn Road		County	
Stroschein Road		County	
Thompson Run Road		State	
Wilmerding-Monroeville Road		County	
COLLECTOR			
ROADWAY NAME	JURISDICTION	ROADWAY NAME	JURISDICTION
Abers Creek Road	Municipal	Longview Drive	Municipal
Alpine Village Drive	Municipal	Macbeth Drive	Municipal
Beatty Road	County	Mall Boulevard	Private
Bellwood Avenue	Municipal	Mall Circle Drive	Private
Brunner Drive	Municipal	Mark Drive	Private
College Park Drive	Municipal	McClure Road	Municipal
Cooper Road	Municipal	Northern Pike	State
Elliot Road	Municipal	Ohio Street	Municipal
Evergreen Drive	Municipal	Old Frankstown Road	State
Forbes Road	State	Old Ramsey Road	Municipal
Garden City Drive	Municipal	Ramsey Road	Municipal
Greenleaf Drive	Municipal	Rosecrest Drive	Municipal
Hillside Avenue	Municipal	Ruth Drive	Municipal
Hochberg Road	Municipal	Saunders Station Road	County
James North	Private	Stroschein Road	County
James Street	County	Thomas Street	Municipal
Jefferson Street	Municipal	Tilbrook Road	Municipal
Laurel Drive	Municipal		
LOCAL			
All Other Streets			

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M:\PROJECTS\PLANNING\DOT\temp\plaf-image arc\Map 10 - Letter Traffic Count Map

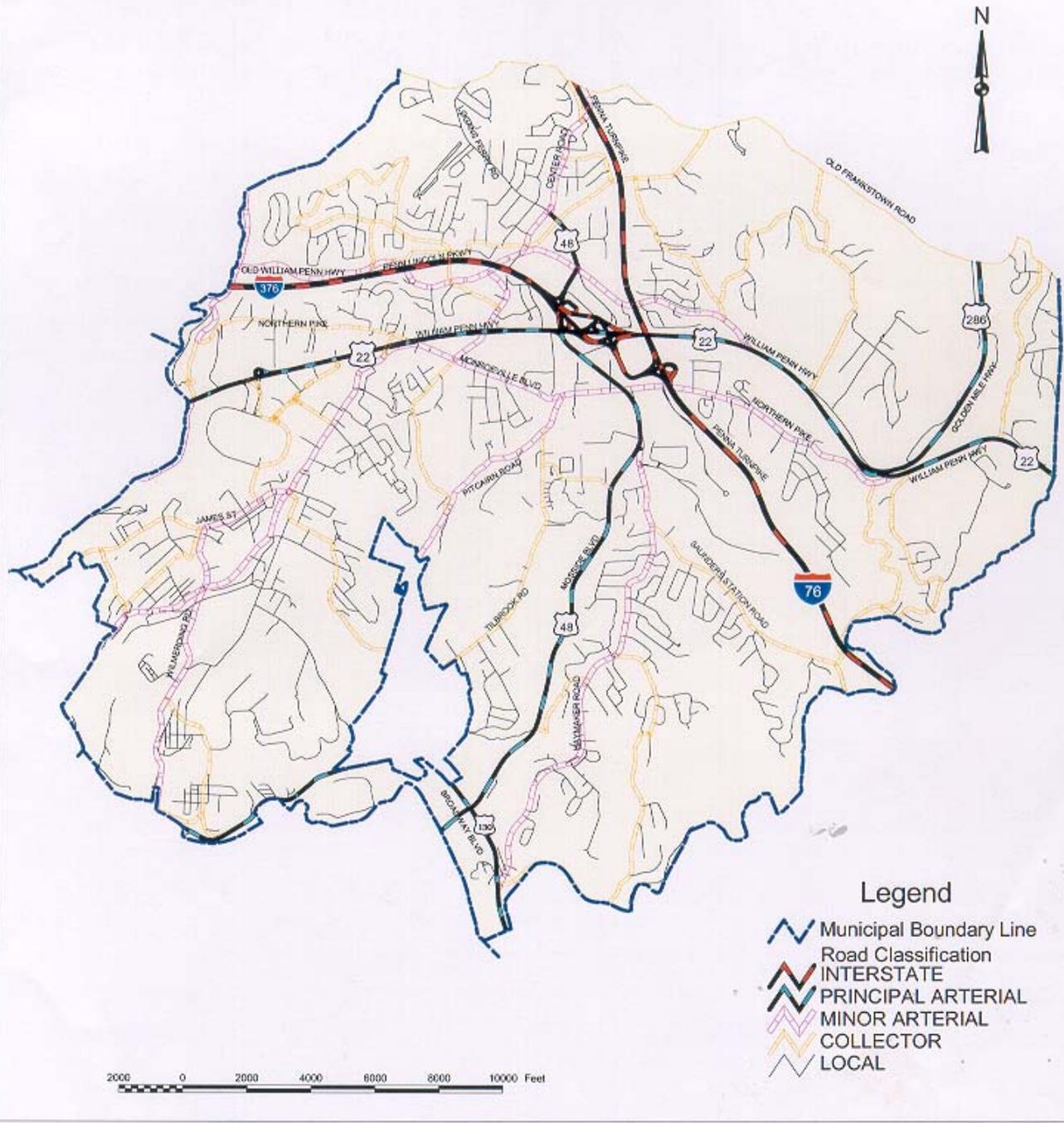


Traffic Count Location Map

Map 14

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M:\PROJECTS\PLANNING\GIS\Map15 - Lefter - Roadway Functional Classification Map



Legend

- Municipal Boundary Line
- Road Classification
- INTERSTATE
- PRINCIPAL ARTERIAL
- MINOR ARTERIAL
- COLLECTOR
- LOCAL

Roadway Functional Classification Map

Map 15

Municipality of Monroeville Comprehensive Plan - 2005

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Table 30**Background Traffic Growth Rates**

ROADWAY	HISTORICAL ADT (1995 OR EARLIER)	UPDATED ADT (LATER THAN 1995)	PERCENT CHANGE
PRINCIPAL ARTERIALS			
Route 22	16,000	17,070	0.81
Route 22	19,000	18,330	-0.45
Route 22	20,000	21,650	1.00
Route 22	18,000	21,040	1.97
Route 48	6,650	7,960	3.05
Route 48	6,650	7,715	2.51
Route 286	11,500	11,940	0.75
Route 286	11,500	12,965	2.43
Average Growth			1.50%
MINOR ARTERIALS			
Center Road	5,000	5,570	1.38
Center Road	4,900	5,540	1.57
Center Road	8,400	9,040	0.96
Center Road	8,800	9,230	0.64
Haymaker Road	1,550	1,980	3.11
Northern Pike	8,200	8,030	-0.28
Northern Pike	5,700	5,760	0.13
Northern Pike	5,700	5,460	-0.54
Monroeville Road	3,500	3,850	1.20
Monroeville Road	3,600	3,840	0.81
Monroeville Road	2,100	2,230	0.75
Monroeville Road	2,100	2,100	0.00
Old William Penn	9,350	10,780	4.85
Old William Penn	10,280	11,270	3.11
Average Growth			1.25%
COLLECTOR ROADS			
Speelman Lane	2,450	2,550	0.50
Speelman Lane	2,450	2,560	0.55
Wilmerding Road	4,000	4,300	0.91
Wilmerding Road	4,000	4,220	0.67
Average Growth			0.70%
LOCAL ROADS			
<i>No updated ADT data (1995 or later) was collected for local roads. However, multiple years of historical data from 1989-1994 indicate a negative average growth rate. Thus, local roads were assumed to experience zero percent background traffic growth.</i>			
Average Growth			0%

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Level of Service

Levels of service (LOS) at intersections are measured in terms of delay. Delay is a measure of driver discomfort, fuel consumption, and lost travel time. This is a complex measure that depends on factors defined in the Transportation Research Board's Highway Capacity Manual (HCM). The LOS determined by HCM procedures are the accepted basis for analyzing and comparing highway facilities.

LOS criteria at signalized intersections are stated in terms of the average stopped delay per vehicle for a peak 15 minute analysis period. Level of service criteria at unsignalized intersections is expressed in terms of average total delay in seconds per vehicle rather than the average stop delay found under the signalized LOS criteria. Also the delay ranges and descriptions also differ from the signalized analysis. LOS descriptions for signalized and unsignalized intersections are found in Table 31 and 32

Table 31 Signalized Intersections
LOS criteria

AVERAGE CONTROL DELAY (SEC/VEH)	LEVEL OF SERVICE	EXPECTED DELAY TO MINOR STREET TRAFFIC
≤ 10	A	Little or no delay
> 10 and ≤ 20	B	Short traffic delays
> 20 and ≤ 35	C	Average traffic delays
> 35 and ≤ 55	D	Long traffic delays
> 55 and ≤ 80	E	Very long delays
> 80	F	*

* When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing, which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvements to the intersection. LOS "F" is considered to be unacceptable to most drivers

Table 32 Unsignalized Intersections
LOS criteria

AVERAGE CONTROL DELAY (SEC/VEH)	LEVEL OF SERVICE	EXPECTED DELAY TO MINOR STREET TRAFFIC
≤ 10	A	Little or no delay
> 10 and ≤ 15	B	Short traffic delays
> 15 and ≤ 25	C	Average traffic delays
> 25 and ≤ 35	D	Long traffic delays
> 35 and ≤ 50	E	Very long delays
> 50	F	*

* When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing, which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvements to the intersection. LOS "F" is considered to be unacceptable to most drivers.

As shown in Table 31, delay times are grouped into ranges identified by the letters 'A' through 'F.' A level of service 'A' is the best—about that found at 5 a.m. on a Sunday morning. A LOS 'F' is worst—about that expected around a major shopping mall on a Saturday in December. Today, the lowest acceptable LOS for signalized intersections in major urban areas is considered LOS E and for unsignalized intersections, LOS D. For evaluation and design considerations, these levels of service are usually determined during the a.m. and/or p.m. weekday peak-commuting hour. Locations affected by very high traffic volumes only a few times a year (A stadium after a sports event) are usually not improved to meet the above guidelines.

Where level of service is the primary concern (as compared to safety) the acceptable LOS guidelines were utilized to focus on critical problem locations and to develop mitigation strategies for the intersection and corridor improvement plan. The same criteria may be utilized by the Municipality to evaluate the impact of future developments. Using HCM procedures, the

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Table 33**Failing Signalized Intersections**

	Primary Study Route	Intersecting at:
8.	Old William Penn and Mosside Boulevard	Haymaker Road and Old Haymaker Road
26.	William Penn Highway/Route 22	Northern Pike East
27.	William Penn Highway/Route 22	Route 286 Connection and Alpine Village Drive
28	Golden Mile Highway/Route 286	Old Frankstown Road and Sagamore Hill Road
35	Monroeville Boulevard	Stroschein Road
41	Monroeville Boulevard	James Street, Rosecrest Drive and Brinton Drive
60	Broadway Boulevard/Route 130	Forbes Road and Haymaker Road with Haymaker Village Drive

study intersections were analyzed under existing traffic and facility conditions. Seven of the 26 signalized study intersections exhibited LOS F for at least one approach lane group during at least one peak hour. Of the 37 unsignalized study intersections, 12 exhibited LOS F for at least one approach lane group during at least one peak hour. Those intersections with LOS F on one or more approaches are shown on Table 33 and Table 34 for signalized and unsignalized study intersections, respectively. The level of service for each of the 63 intersections in this study is shown on the intersection's summary sheet found in Section VI of this Plan.

Unsignalized Intersection Warrant Analysis

Providing a signal at an unsignalized intersection can often improve operations (reduce delay) and safety (lower crashes). However, installation and maintenance of signals is costly. Signals must be monitored to ensure the proper signal timing (amount of green and red time allocated to each movement on each approach) is appropriate for the traffic volumes. Improperly timed signals may result in a lower level of service than no signal at all. Because of these considerations, all traffic signal installations must be "warranted," i.e. conditions must meet certain criteria.

A system of traffic signal warrants, described in the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD), has been accepted by PENNDOT. Of the eleven (11) warrants in the MUTCD, at least one (1)

must be satisfied in order to consider the installation of a traffic signal at an unsignalized intersection. The 13 unsignalized study intersections with poor levels of service were reviewed for signal warrant justification, 11 of which met one or more of the warrants. Recommendations for signalization are contained in Section VI.

Crashes

Crash information from PENNDOT and the Monroeville Police was summarized in Table 35. Reportable (crashes involving personal injury or a vehicle needing to be towed) and non-reportable crashes for the years 2001, 2002, and 2003 are shown in Table 35, however non-reportable crashes and crashes involving alcohol were not included in determining intersection crash rates. This follows PENNDOT guidelines and procedures for developing statewide average crash rates by type of intersection

Fifty-seven Study Intersections experienced at least one reportable crash over the three-year period. Crashes for these intersections were categorized by number, type, and annual crash rate per volume of traffic.

Since traffic volumes heavily influence the number of crashes at a location, a crash rate per million vehicles is used to identify locations higher than the statewide average for comparable intersections. However where rates are high and the total number of crashes is low (1-5 in a three year period), driver error or weather, not roadway conditions, may be the likely cause and improvements are not warranted where rates are high and the total number of crashes is low (1-5 in a three year

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Table 34***Failing Unsignalized Intersections***

	Primary Study Route	Intersecting at:
1.	Old William Penn Highway	Thompson Run Road
4.	Old William Penn Highway	Garden City Drive
5.	Old William Penn Highway	Center Road
6.	Old William Penn Highway	Center Road and Saint Martin Drive
7.	Center Road	Beatty Road and Evergreen Drive
9.	Haymaker Road	Beatty Road
19.	Center Road	Garden City Drive
33.	Monroeville Boulevard/Northern Pike	Pitcairn Road
52.	Mosside Boulevard/Route 48	Hillside Avenue
54.	Mosside Boulevard/Route 48	Macbeth Drive
57.	Haymaker Road	Saunders Station Road

period), driver error or weather, not roadway conditions, may be the likely cause and improvements are not warranted.

Of the 57 intersections analyzed, thirty are above the statewide crash rate and are highlighted in Table 35.

The four intersections with the highest crash rates having more than 4000 vehicles entering the intersection per day:

- Pitcairn Road and Stroschein Road;;
- Old William Penn at Center Road and St. Martin Drive;
- William Penn Highway / Business Route 22 and Strochein/Center Roads;
- Old William Penn and Center Road.

The detailed crash records for all Study Intersections that fell above the statewide average were reviewed to determine if any crash patterns are apparent. Potential improvements to address any identifiable crash patterns are discussed later in this report.

Public Transportation

Bus System

The Port Authority serves Monroeville with seven regional routes, six of which are express routes using the Martin King, Jr., East Busway. Six of the routes serve Downtown Pittsburgh and two serve Oakland. There are also two routes connecting Monroeville with Wilkinsburg and Swissvale. In 1998, Port Authority initiated the Gold Link Service which is comprised of three local shuttle routes

serving Monroeville and Adjacent communities.

The Monroeville Mall serves as the hub for most of the Port Authority's Monroeville Service. Riders on local routes are able to transfer to regional routes and a park and ride lot is available for commuters.

There are six Park and Ride Lots located in Monroeville; and include: Alpine Village; Monroeville United Methodist Church; Garden City Plaza; Monroeville Mall at the lower level of Macy's; Monroeville Plaza; and Monroeville Volunteer Fire Company #4, totaling 957 spaces with some lots having a frequency of transit service every ten to fifteen minutes.

Pedestrian Plan

The 1990 Comprehensive Transportation Plan recommended a system of pedestrian path linking commercial centers, institutions, residential neighborhoods and bus stops. This pedestrian system should provide a logical and continuous network. The development of a system of sidewalks has since been pursued by the Municipality of Monroeville, most frequently with new land developments that have been approved over the past fifteen years.

A Pedestrian Plan will be prepared under separate cover, illustrating the network of sidewalks and pathways, and identifying priority areas and missing links through a needs assessment. In addition policies and practices will be established to provide for a [pedestrian friendly environment in the future.

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Table 35

Crash Data for Study Intersections 2001-2003

STUDY INTERSECTIONS		Number of Accidents			Number of Accidents by YEAR						Approach Volumes from ADT				Daily Volume Entering Intersection	Accident Rate per Million Entering Vehicles	Intersection Type 1-8 *	Statewide Average Accident Rate for Comparable Intersections *	Locations Above Statewide Average Accident Rate
		Total Accidents	Non-Reportable Accidents	Reportable Accidents	Non-Reportable Accidents 2001	Reportable Accidents 2001	Non-Reportable Accidents 2002	Reportable Accidents 2002	Non-Reportable Accidents 2003	Reportable Accidents 2003	NB	SB	EB	WB					
Abers Creek Rd	Cavitt Rd	2	0	2	0	2	0	0	0	0		960	480	350	1,790	1.02	4	0.217	ABOVE
Beatty Rd/Cooper Rd	CCAC Driveway/Beatty Rd	5	1	4	0	2	0	1	1	1					8,230	0.44	4	0.217	ABOVE
Bus 22, Wm Penn Hwy	Center Rd/Stroschein Rd	94	39	55	10	34	11	13	18	8					59,130	0.85	2	0.313	ABOVE
Bus 22, Wm Penn Hwy	Duff Rd	21	10	11	3	5	7	4	0	2					43,750	0.23	2	0.313	
Bus 22, Wm Penn Hwy	Northern Pike (west)	30	18	12	5	3	9	7	4	2					40,080	0.27	2	0.313	
Bus 22, Wm Penn Hwy	McMasters Dr/Lowes Drive	54	28	26	7	11	8	10	13	5	2,950	1,345	21,600	18,200	44,095	0.54	2	0.313	ABOVE
Bus 22, Wm Penn Hwy	Mall Blvd/Holiday Centre	39	10	29	6	17	2	5	2	7	6,230	3,430	21,600	18,200	49,460	0.54	2	0.313	ABOVE
Bus 22, Wm Penn Hwy	Turnpike Off-Ramp	22	13	9	0	1	6	3	7	5		7,760		10,500	18,260	0.45	3	0.143	ABOVE
Cavitt Rd	Alpine Village Dr	1	0	1	0	1	0	0	0	0	170		230	195	595	1.53	4	0.217	ABOVE
Center Rd	Logans Ferry Rd	2	2	0	0	0	0	0	2	0							4	0.217	
Center Rd	Beatty Rd/Evergreen Rd	3	2	1	1	0	1	1	0	0	7,150	5,870	2,430	2,250	17,700	0.05	4	0.217	
Center Rd	Garden City Dr	5	3	2	0	1	0	0	3	1	3,970	6,040	2,475	750	13,235	0.14	4	0.217	
Center Rd	My Way	1	0	1	0	0	0	1	0	0	6,940	5,180		350	12,470	0.07	4	0.217	
Haymaker Rd	Leslie Drive	0	0	0	0	0	0	0	0	0							2	0.313	
Haymaker Rd	Saunders Station Road	9	2	7	0	1	2	2	0	4	6,830	7,760		3,720	18,310	0.35	4	0.217	ABOVE
Haymaker Rd	McGinley Rd	12	2	10	0	2	2	2	0	6	8,290	10,460		4,900	23,650	0.39	2	0.313	ABOVE
Haymaker Rd	Ramsey Rd	5	0	5	0	1	0	1	0	3	3,650	3,480		1,400	8,530	0.54	2	0.313	ABOVE
James St	James North	0	0	0													4	0.217	
James St	Speelman Lane	11	2	9	0	4	1	3	1	2	2,700		3,600	6,460	12,760	0.64	4	0.217	ABOVE
James St	Stepp Dr/Pleasantview Dr	5	1	4	0	2	0	1	1	1	250	60	3,580	3,980	7,870	0.46	4	0.217	ABOVE
Logans Ferry Road	Old Frankstown Road	4	3	1	2	0	1	0	0	1					4,800	0.19	4	0.217	
Monroeville Blvd	Municipal Dr/Bridge to Northern Pike	11	10	1	3	0	6	1	1	0	600	3,920	10,670	10,490	25,680	0.04	2	0.313	
Monroeville Blvd	Stroschein Rd	33	13	20	1	8	5	5	7	7	3,460	10,140	10,370	10,380	34,350	0.53	2	0.313	ABOVE
Monroeville Blvd	Ivanhoe Dr	9	7	2	4	1	2	1	1	0		1,610	9,140	9,850	20,600	0.09	4	0.217	
Monroeville Blvd	Jamison Lane/Oxford Dr	31	13	18	0	4	7	11	6	3	1,370	6,750	7,180	11,040	26,340	0.62	2	0.313	ABOVE
Monroeville Blvd	James St/Rosecrest Drive/Brinton St	7	0	7	0	3	0	2	0	2	4,070	6,910	4,800	1,230	17,010	0.38	2	0.313	ABOVE
Monroeville Blvd / N. P	Pitcairn Rd	15	4	11	0	7	3	2	1	2	4,450		9,120	8,510	22,080	0.45	4	0.217	ABOVE
Monroeville Boulevard	Wyngate Drive	15	6	9	1	5	5	4	0	0	1,700		11,700	11,240	24,640	0.33	4	0.217	ABOVE
Monroeville Rd	Speelman Lane/Wilmerding Rd	4	1	3	0	0	1	1	0	2	4,560	2,710	2,360	4,080	13,710	0.20	4	0.217	
Northern Pike	West Patty Lane	2	1	1	0	0	0	0	1	1	800		7,320	6,330	14,450	0.06	2	0.313	
Northern Pike	Westinghouse Dr	3	0	3	0	0	0	2	0	1		2,150	7,030	6,660	15,840	0.17	2	0.313	
Old Frankstown Rd	Cooper Rd	3	2	1	0	0	1	0	1	1	2,720		1,010	3,300	7,030	0.13	4	0.217	
Old Frankstown Rd	Hochberg Rd/Lindsey Drive	0	0	0	0	0	0	0	0	0							4	0.217	
Haymaker Rd	Beatty Road	7	3	4	0	1	1	2	2	1	2,430	3,730	5,380	6,100	17,640	0.21	4	0.217	
Old Wm Penn Hwy	Beatty Rd/Plaza Driveway	9	6	3	1	0	3	1	2	2		3,170	3,200		6,370	0.43	4	0.217	ABOVE
Old Wm Penn Hwy	Center Rd/St. Martin Drive	45	25	20	6	8	11	5	8	7	70	8,200	11,950	5,040	25,260	0.72	4	0.217	ABOVE
Old Wm Penn Hwy	Haymaker Rd/Old Haymaker Rd	14	3	11	2	4	1	3	0	4	9,900	5,750	6,000	3,390	25,040	0.40	2	0.313	ABOVE
Old Wm Penn Hwy	Thompson Run Rd	7	2	5	0	1	1	1	1	3	200	4,370	5,770	5,500	15,840	0.29	4	0.217	ABOVE
Old Wm Penn Hwy	Garden City Dr	15	7	8	1	2	4	2	2	4	2,330	3,450	5,880	7,030	18,690	0.39	4	0.217	ABOVE
Old Wm Penn Hwy	Center Rd	44	25	19	5	7	11	5	9	7	6,950		6,000	11,430	24,380	0.71	4	0.217	ABOVE
Old Wm Penn Hwy	Evergreen Dr	3	1	2	1	1	0	1	0	0		200	5,600	4,960	10,760	0.17	4	0.217	
Old Wm Penn Hwy	Duff Rd	6	5	1	0	1	2	0	3	0	4,830		5,020	7,040	16,890	0.05	4	0.217	

MONROEVILLE

Table 35

Crash Data for Study Intersections 2001-2003

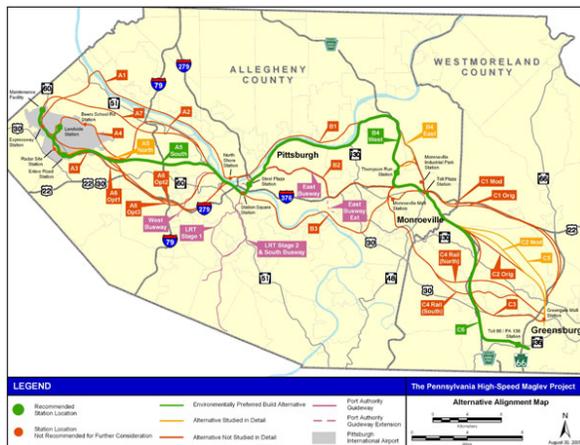
STUDY INTERSECTIONS		Number of Accidents			Number of Accidents by YEAR							Approach Volumes from ADT				Daily Volume Entering Intersection	Accident Rate per Million Entering Vehicles	Intersection Type 1-8 *	Statewide Average Accident Rate for Comparable Intersections *	Locations Above Statewide Average Accident Rate
		Total Accidents	Non-Reportable Accidents	Reportable Accidents	Non-Reportable Accidents 2001	Reportable Accidents 2001	Non-Reportable Accidents 2002	Reportable Accidents 2002	Non-Reportable Accidents 2003	Reportable Accidents 2003	NB	SB	EB	WB						
Pitcairn Rd	Stroschein Rd	17	7	10	4	3	2	3	1	4	2,690	1,440		2,800	6,930	1.32	4	0.217	ABOVE	
Rt 130, Broadway Ave	Forbes Rd/Haymaker Rd	10	3	7	0	4	1	1	2	2	6,538	2,100	9,190	5,260	23,088	0.28	1	0.255	ABOVE	
Rt 22, Wm Penn Hwy	Rt 286 Connection	53	20	33	0	13	9	11	11	9	4,270	1,290	21,680	22,300	49,540	0.61	1	0.255	ABOVE	
Rt 22, Wm Penn Hwy	Northern Pike (East)	29	15	14	3	5	8	7	4	2					50,300	0.25	1	0.255		
Rt 22, Wm Penn Hwy	Old Wm Penn Hwy	63	33	30	8	12	4	9	21	9					64,900	0.42	1	0.255	ABOVE	
Rt 22, Wm Penn Hwy	Rt 48, Mosside Blvd	67	30	37	9	25	14	5	7	7	19,100	17,100	17,460	17,240	70,900	0.48	1	0.255	ABOVE	
Rt 22, Wm Penn Hwy	Old Wm Penn/Miracle Dr	11	7	4	2	2	2	2	3	0					60,700	0.06	1	0.255		
Rt 286, Golden Mile Hw	Old Frankstown Rd/Sagamore Hill Rd	17	5	12	1	4	3	3	1	5	11,500	13,200	3,000	3,070	30,770	0.36	1	0.255	ABOVE	
Rt 48, Mosside Blvd	Northern Pike	58	33	25	12	15	10	5	11	5	21,500	16,480	7,250	8,540	53,770	0.42	1	0.255	ABOVE	
Rt 48, Mosside Blvd	Haymaker Rd/Campus Blvd.	28	14	14	1	5	3	5	10	4	10,050	19,700	2,370	10,500	42,620	0.30	1	0.255	ABOVE	
Rt 48, Mosside Blvd	MacBeth Dr	11	4	7	0	1	3	3	1	3	10,860	10,740	2,290		23,890	0.27	3	0.143	ABOVE	
Rt 48, Mosside Blvd	Cambridge Square Dr	8	4	4	1	3	0	0	3	1	11,260	10,820	310		22,390	0.16	3	0.143	ABOVE	
Rt 48, Mosside Blvd	Rt 130, Broadway Ave	38	14	24	0	3	6	8	8	13					34,140	0.64	1	0.255	ABOVE	
Rt 48, Mosside Blvd	Hillside Ave	12	3	9	0	3	1	1	2	5	11,260	10,325	1,285		22,870	0.36	3	0.143	ABOVE	
Saunders Station Rd	Abers Creek Rd	4	0	4	0	1	0	0	0	3		890	1,880	2,150	4,920	0.74	4	0.217	ABOVE	
Tillbrook Rd	Pitcairn Road	5	0	5	0	2	0	1	0	2	1,150	4,700		3,280	9,130	0.50	4	0.217	ABOVE	
Tillbrook Rd	Cambridge Square Dr	1	0	1	0	1	0	0	0	0	1,270	1,480		600	3,350	0.27	4	0.217	ABOVE	
Wilmerding Rd	Johnston Rd	2	0	2	0	2	0	0	0	0	4,500	4,450		140	9,090	0.20	4	0.217		
Wilmerding Rd	Thomas St	0	0	0	0	0	0	0	0	0							4	0.217		
Wyngate Drive	Tech One Drive/Anderson Lane	0	0	0	0	0	0	0	0	0							4	0.217		
Wyngate Drive	Stroschein Rd	3	2	1	1	0	0	0	1	1	2,640	2,900	1,650		7,190	0.13	4	0.217		
		1045	464	581	101	244	180	167	183	170	Average Accident Rate for Monroeville:				0.40					

Intersection Homogeneous Report. Rates are classified by intersection type as:

- Urban - Signalized - Primary Route (typically 3 digit SR number or less) Average Rate = 0.255
- Urban - Signalized - Minor Route (typically 4 digit SR number) Average Rate = 0.313
- Urban - Unsignalized - Primary Route (typically 3 digit SR number or less) Average Rate = 0.143
- Urban - Unsignalized - Minor Route (typically 4 digit SR number) Average Rate = 0.217
- Rural - Signalized - Primary Route (typically 3 digit SR number or less) Average Rate = 0.316
- Rural - Signalized - Minor Route (typically 4 digit SR number) Average Rate = 0.321
- Rural - Unsignalized - Primary Route (typically 3 digit SR number or less) Average Rate = 0.226
- Rural - Unsignalized - Minor Route (typically 4 digit SR number) Average Rate = 0.413

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Pennsylvania High-Speed Maglev Project



A view of this route may be found at <http://www.maglevpa.com/route.html>

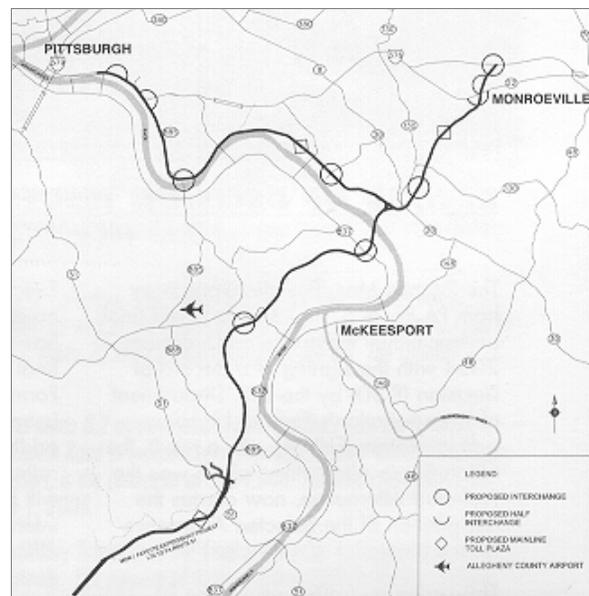
Maglev is a proposed 54 mile high speed ground transportation system that would operate between the Pittsburgh International Airport, Downtown Pittsburgh, Monroeville and Greensburg, traveling at speeds reaching 240 miles per hour with the potential to travel this distance in 35 minutes. One of the finalists for Federal funding, should the Pennsylvania High-Speed Maglev Project be selected, it would have enormous impacts upon not only Monroeville, but also Allegheny and Westmoreland Counties. The landscape would change with the location of Maglev stations and the placement of the route. However, with its installation, Maglev would offer a transportation alternative, relieving traffic congestion on the area's major highways while extending the Pittsburgh Airport into smaller towns making it more accessible and affordable for the average traveler. The system will also create the start of an expanding regional system that will bring economic industry growth and jobs to the region while serving as the impetus for revitalization of the area.

And finally, with the completion of this demonstration project, the Pennsylvania High-Speed Maglev Project would serve as a successful model for public-private partnerships while proving the technology's viability for future implementation in longer distance intercity corridor applications.

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Mon/Fayette Expressway Project from PA Route 51 to I-376

The PA Route 51 to I-376 is one of four stand-alone segments of the Mon-Fayette Expressway currently undertaken by the Pennsylvania Turnpike Commission. This link, with proposed interchanges located on Thompson Run Road and Old William Penn Highway in Penn Hills, Route 22 in Monroeville and terminating with a connection on the Pennsylvania Turnpike, also situated within the Municipality of Monroeville boundaries, will have the greatest impact locally. This six mile link will be part of a highway system designed to stretch 70 miles south from Pittsburgh through the Monongahela River Valley and western Fayette County to Interstate 68 near Morgantown, W.Va.



North Shore Designated Alternative for the Mon/Fayette Expressway.

While seen as a future alternate route that would relieve traffic congestion on the Parkway; exorcising Eastern Suburb motorists the necessity of negotiating the tunnels, by providing a major circumferential highway south and west of the Pittsburgh urban core, this roadway is also seen as a remedy in reducing traffic congestion on Business Route 22 in Monroeville. As cited in the Streetscape Initiative Project, full

Table 36**Future Failing Signalized Intersections**

	Primary Study Route	Intersecting at:
15.	William Penn Highway/Route 22	Mall Boulevard and Holiday Center
18.	William Penn Highway/Route 22	Center Road and Stroschein Road
22.	William Penn Highway/Route 22	Mossie Boulevard/Route 48
24.	William Penn Highway/Route 22	Old William Penn Highway
26.	William Penn Highway/Route 22	Northern Pike East
27.	William Penn Highway/Route 22	Route 286 Connection and Alpine Village Drive
28.	Golden Mile Highway/Route 286	Old Frankstown Road and Sagamore Hill Road
35.	Monroeville Boulevard	Stroschein Road
41.	Monroeville Boulevard	James Street, Rosecrest Dr. and Brinton Dr.
51.	Mossie Boulevard/Route 48	Broadway Boulevard/Route 130
60.	Broadway Boulevard/Route 130	Forbes, Haymaker Rds and Haymaker Village Dr.

stretch 70 miles south from Pittsburgh through the Monongahela River Valley and western Fayette County to Interstate 68 near Morgantown, W.Va.

While seen as a future alternate route that would relieve traffic congestion on the Parkway; exorcising Eastern Suburb motorists the necessity of negotiating the tunnels, by providing a major circumferential highway south and west of the Pittsburgh urban core, this roadway is also seen as a remedy in reducing traffic congestion on Business Route 22 in Monroeville. As cited in the Streetscape Initiative Project, full access from the Mon/Fayette Expressway to Route 22 is paramount to the healthy development in the future of the Core Business District. Attainment of other highway links from the Parkway East and other approaches were identified as major priorities in eliminating the possibility of choking off access to Business Route 22 resulting in the eventual strangulation of the viability of retail development.

Regionally, the completion of the Mon/Fayette Expressway would improve access to redevelopment sites in the economically depressed Mon River towns where the steel and coal industries once flourished. It also would provide faster and safer travel options for through traffic, particularly commercial vehicles that now use existing north-south arteries.

FUTURE CONDITIONS**Projecting Future Peak Hour Traffic**

To determine future traffic conditions, future traffic volumes were established for the previously identified study intersections and six principal roadway corridors. A 20 year (to 2017) design horizon was assumed for the roadway segments and 20 intersections within the principal roadway corridors and a 10 year (to 2007) horizon for the other 43 intersections. Two components of future traffic were identified: a background increase based on historical growth rates; and, new traffic from new developments. The background growth rates derived previously were applied, by link classification, to traffic on roadway sections and approach volumes for each Study intersection. This accounted for increased trips 1) beginning or ending in neighboring boroughs and townships; 2) passing non-stop through Monroeville and 3) from infill and redevelopment projects within the Municipality.

Once future base traffic volumes were derived, trips were derived for presently undeveloped areas within Monroeville. There are 619 acres either vacant or in non-urban uses. Most developable lands are outside areas served by today's primary transportation corridors. Typically, these areas adjoin existing residential neighborhoods and, based on zoning, are expected to become residential. Although some areas zoned for commercial and industrial use are available, the acreage is

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Table 37**Future Failing Unsignalized Intersections**

Primary Study Route		Intersecting at:
1.	Old William Penn Highway	Thompson Run Road
3.	Old William Penn Highway	Duff Road
4.	Old William Penn Highway	Garden City Drive
5.	Old William Penn Highway	Center Road
6.	Old William Penn Highway	Center Road and Saint Martin Drive
7.	Center Road	Beatty Road and Evergreen Drive
9.	Haymaker Road	Beatty Road
10.	Center Road	Logans Ferry Road and Haymaker Road
11.	Beatty Road	CCAC Driveway
14.	Old Frankstown Road	Hochberg Road and Lindsey Lane
19.	Center Road	Garden City Drive
33.	Monroeville Boulevard/Northern Pike	Pitcairn Road
49.	Tillbrook Road	Pitcairn Road
52.	Mosside Boulevard/Route 48	Hillside Avenue
54.	Mosside Boulevard/Route 48	Macbeth Drive
57.	Haymaker Road	Saunders Station Road

small and constrained by steep slopes, unstable soils or poor access. It is anticipated most future commercial and industrial uses be infill and redevelopment projects.

Based on Section IV, Future Land Use Scenario, it is estimated there are 477 acres available for new residential development, 74 acres for commercial / office, and 68 acres for light industrial. Peak hour and daily trips generated by these future land uses were developed using the Institute of Transportation Engineers' (ITE) Trip Generation Manual. These peak hour and daily traffic volumes were assigned to nearby roadway segments and critical study intersections.

Future Level of Service

For the appropriate 2007 or 2017 future year, intersection levels of service were developed. Assuming no improvements to the roadway network, 12 of the 26 signalized study intersections are expected to have at least one approach lane group operating at LOS "F" during one or more peak hours. Sixteen (16) of the 37 unsignalized study intersections are expected to experience LOS F on at least one approach lane group during one or more peak hours.

Those intersections with a future year LOS

F are identified in Tables 36 and 37. Recommendations were developed to mitigate anticipated traffic capacity constraints. These recommendations are presented in Section VI with conceptual cost estimate.

TRAFFIC REVIEW BOARD

Throughout the year, citizens and existing businesses often have concerns about safety, traffic congestion, speed on residential streets or other suggestions for transportation improvements.

In order to address every day traffic issues, it is suggested a Traffic Review Board (TRB) be established. The TRB, for example, would review requests for traffic control devices such as stop signs and signals; investigate complaints about excessive speeds; and, recommend appropriate action to resolve problems.

The board would be made up of the Planning Director, Municipal Engineer, two to three volunteer representatives of residential areas and one or two volunteer representatives of businesses. The Municipality's traffic engineer or consultant would sit as a technical advisor and prepare technical reviews, as directed by the Board. A limited budget, established by Council, can be utilized for any professional consulting services.

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