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In the Matter of
Philadelphia Electric Company
(Limerick Generating Station, Units 1 and 2)
Docket Nos. 50-352 and 50-353

Gentlemen:

Transmitted herewith for the information of the Board and parties to Emergency Planning and "Severe Accident" Contentions is the final draft, "Evacuation Time Estimates for the Limerick Generating Station Plume Exposure Emergency Planning Zone," dated May 1984, which were submitted to PEMA and copies of which we have just received.

Sincerely,

Troy B. Conner, Jr.

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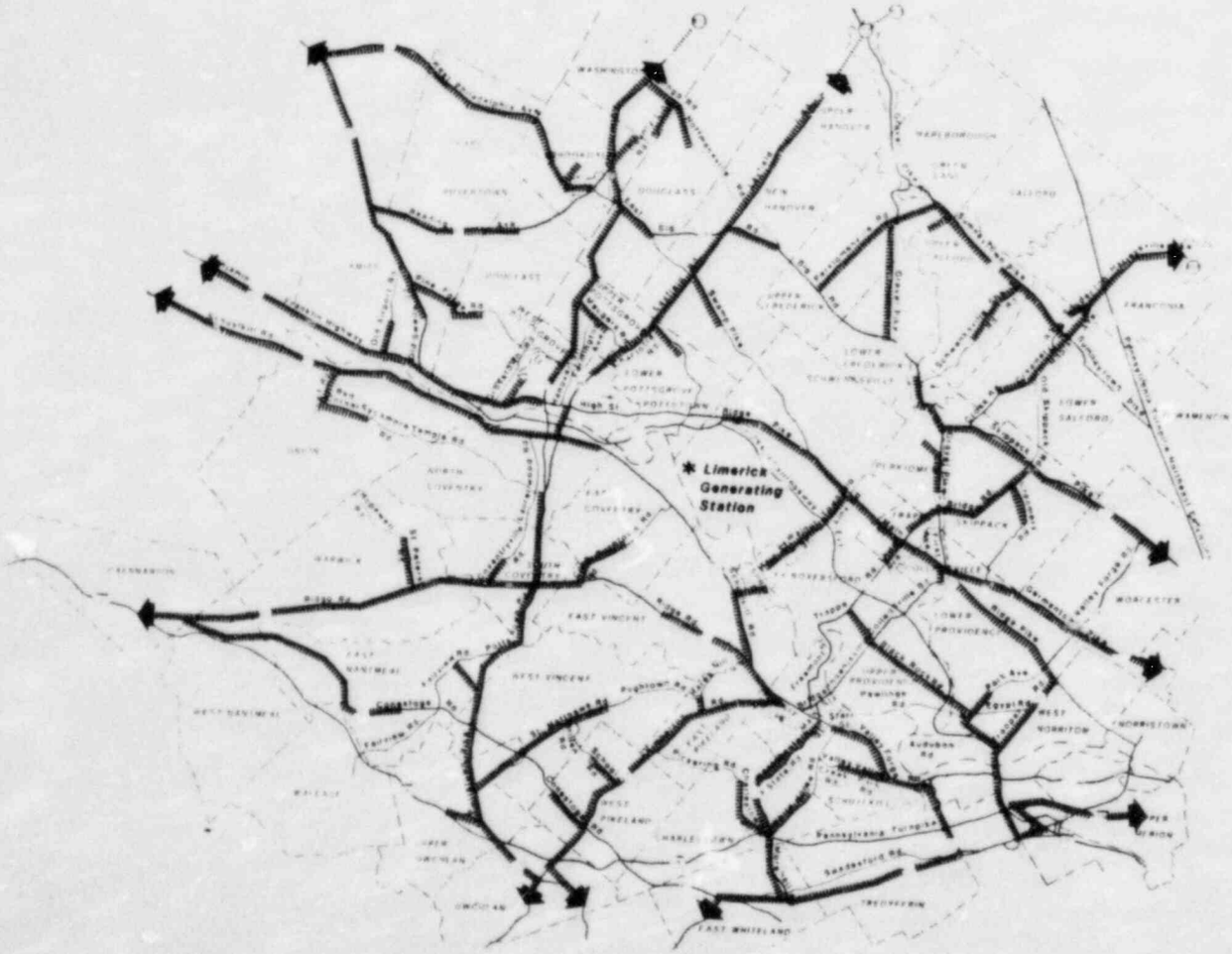
Evacuation Time Estimates for the Limerick Generating Station Plume Exposure Emergency Planning Zone

FINAL DRAFT



MAY 1984

Prepared for: PHILADELPHIA ELECTRIC COMPANY

HMM ASSOCIATES, INC.

EVACUATION TIME ESTIMATES FOR THE LIMERICK GENERATING STATION PLUME EXPOSURE EMERGENCY PLANNING ZONE

HMM Document No. 84-620

FINAL DRAFT

Prepared for:

PHILADELPHIA ELECTRIC COMPANY
Philadelphia, Pennsylvania

Prepared by:

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Rev. 1 5/24/84

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1. INTRODUCTION

1.1 General

Evacuation time studies analyze the manner in which the population within the Plume Exposure Emergency Planning Zone (EPZ) surrounding a nuclear power plant site would evacuate during a radiological emergency. Evacuation time studies provide licensees and State and local governments site-specific information helpful to protective action decision-making. The studies estimate, for officials who would make protective action decisions, the time necessary to evacuate the Plume Exposure EPZ, and identify instances in which unusual evacuation constraints exist.

Evacuation time estimate requirements were developed in the aftermath of the Three Mile Island accident. In a letter dated November 29, 1979, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information regarding estimates of evacuation times for various areas around nuclear power plants. In order to comply with the request for information, Philadelphia Electric Company (PECO) provided the NRC with a preliminary evacuation time estimate report (Reference 1).

In November of 1980, the NRC and the Federal Emergency Management Agency (FEMA) published a revised version of NUREG-0654 entitled Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (Reference 2). NUREG-0654, Rev. 1 requires that each nuclear power plant licensee's offsite emergency plan contain time estimates for evacuation within the Plume Exposure EPZ. Appendix 4 of NUREG-0654, Rev. 1 provides detailed guidance on what must be included in an evacuation time estimate study.

In response to NUREG-0654, Rev. 1, PECO has retained HMM Associates (HMM) of Concord, Massachusetts, to develop the evacuation time estimates for the Limerick Generating Station EPZ (later referred to as the Limerick EPZ). This report will

be provided to the NRC for its review, and to State and County officials for their use in the event of an emergency.

The evacuation time estimates have been developed using existing population data and the NETVAC computer simulation model. The NETVAC program was developed specifically to provide evacuation time estimates and related information for use in emergency planning. The overall methodology used for this study, including use of the NETVAC simulation model, is identical to that used for the evacuation time estimate study used for the Susquehanna Steam Electric Station EPZ. The evacuation time estimates for this latter EPZ have previously been discussed before ASLB hearings and have been accepted by NRC/FEMA.

Evacuation times have been estimated for various areas, times and weather conditions, as suggested in Appendix 4 of NUREG-0654, Rev. 1. These evacuation times represent the times required for completing the following actions:

1. public notification;

2. preparation and mobilization; and

3. actual movement out of the EPZ (i.e., on-road travel time, including delays associated with vehicle queueing).

1.2 Site Location and Emergency Planning Zone (EPZ)

The Limerick Generating Station is located in Limerick Township within Montgomery County, Pennsylvania. The station site is located approximately 30 miles northwest of Philadelphia, Pennsylvania. A site vicinity map for the station is included as Figure 1.1.

Figure 1.2 illustrates the townships and boroughs which are included either entirely or partially within the Limerick EPZ. A listing of these municipalities and their populations within the Limerick EPZ is presented in Table 1.1.

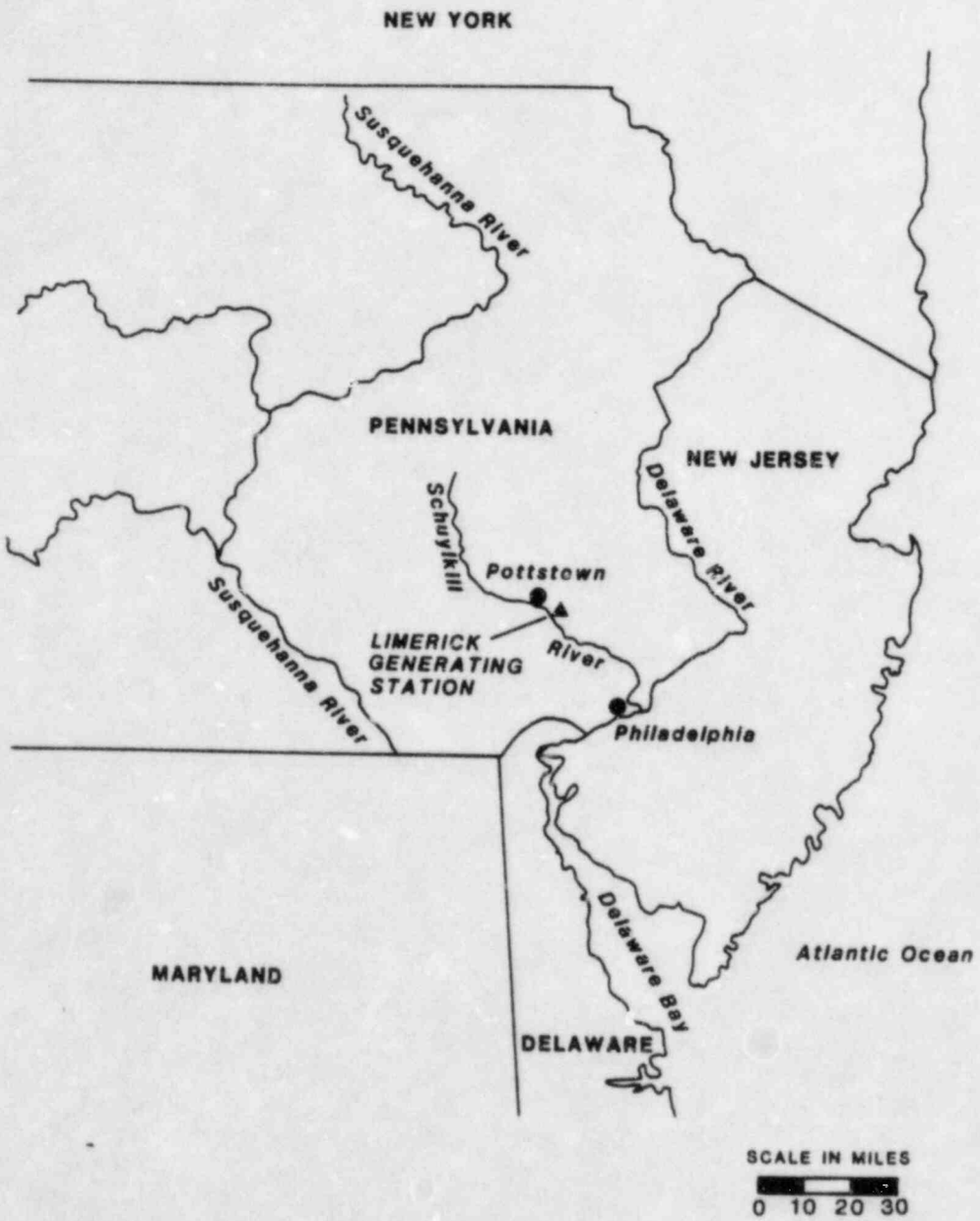


FIGURE 1.1 - LIMERICK GENERATING STATION SITE VICINITY

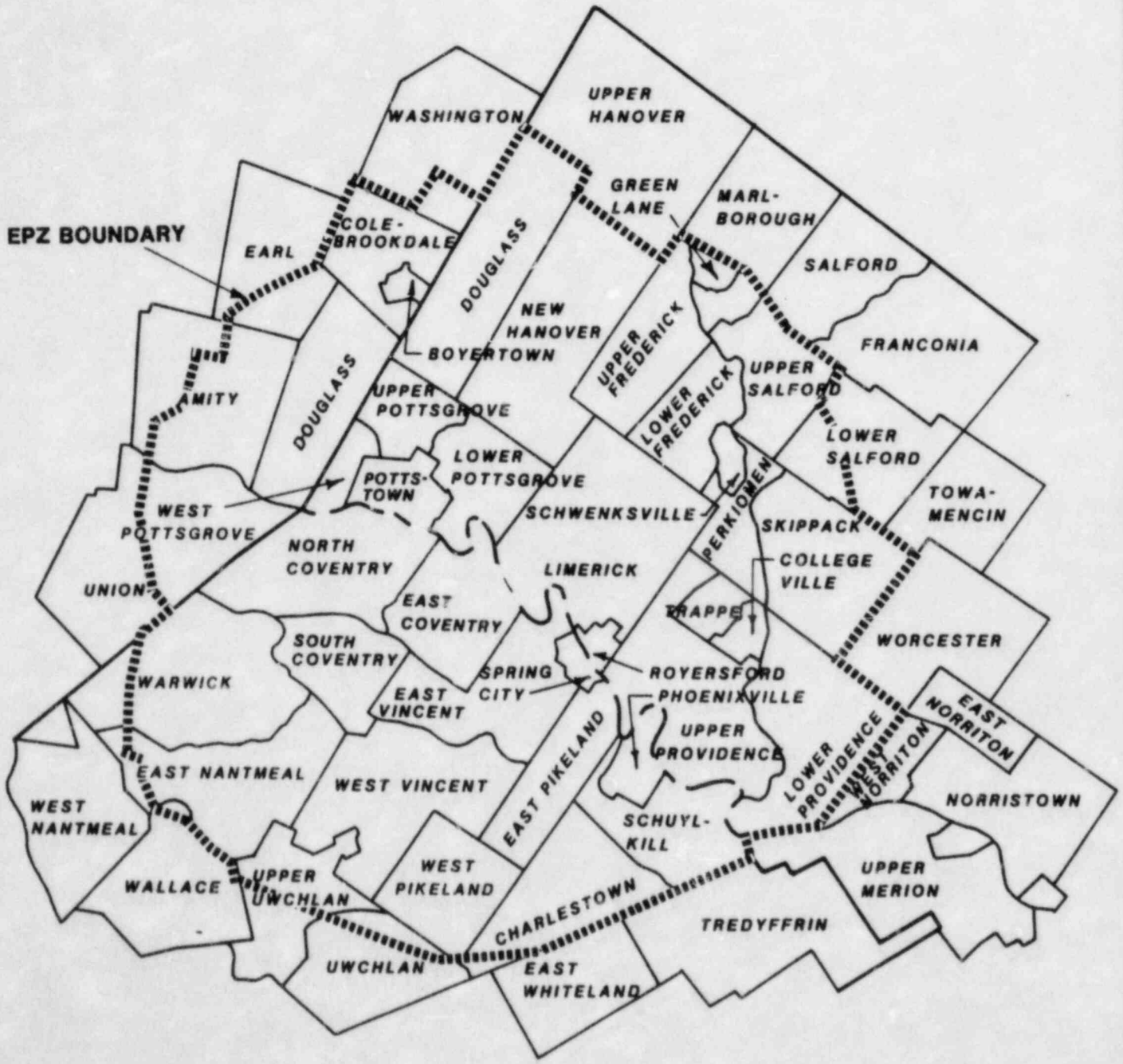


FIGURE 1.2 - LIMERICK PLUME EXPOSURE EPZ BOUNDARIES

TABLE 1.1
MUNICIPALITIES TOTALLY OR PARTIALLY WITHIN THE
LIMERICK GENERATING STATION EPZ

MUNICIPALITY	1980 PERMANENT RESIDENT POPULATION WITHIN EPZ
MONTGOMERY COUNTY:	
Douglass Township	5,833
Limerick Township	5,298
Royersford Borough	4,243
Lower Frederick Township	2,379
Lower Pottsgrove Township	7,299
Pottstown Borough	22,729
Lower Providence Township	18,945
Lower Salford Township (33%*)	2,052
Marlborough Township (10%*)	285
Green Lane Borough	542
New Hanover Township	4,623
Perkiomen Township	3,265
Schwenksville Borough	1,041
Skippack Township	5,784
Upper Frederick Township	1,759
Upper Pottsgrove Township	2,873
Upper Providence Township	9,551
Collegeville Borough	3,406
Trappe Borough	1,800
Upper Salford Township	2,375
West Pottsgrove Township	4,208
Total Montgomery County	110,290
CHESTER COUNTY:	
Charlestown Township	2,770
East Coventry Township	4,085
East Nantmeal Township	1222
East Pikeland Township	4,410
East Vincent Township	4,739
Spring City Borough	3,389
North Coventry Township	7,164
Schuylkill Township	5,993
Phoenixville Borough	14,165
South Coventry Township	1,556
Upper Uwchlan Township (61%*)	1,103
Uwchlan Township (3%*)	250
Warwick Township (90%*)	2,115
West Pikeland Township	1,536
West Vincent Township	1,992
Total Chester County	56,489
BERKS COUNTY:	
Amity Township (75%*)	4,384
Colebrookdale Township	4,748
Boyertown Borough	3,979
Douglass Township	3,128
Earl Township (22%*)	562
Union Township (40%*)	1,126
Washington Township (20%*)	514
Total Berks County	18,441
TOTAL 1980 PERMANENT RESIDENT POPULATION WITHIN EPZ	185,220

* % of total population of municipality within the Plume Exposure EPZ.

Source: County RERPs and data from the 1980 U.S. Census of Population and Housing.

Specific government agencies which have been directly involved in preparing plans for emergencies at the Limerick Generating Station include: the Pennsylvania Emergency Management Agency (PEMA), the Montgomery County Office of Emergency Preparedness, the Chester County Department of Emergency Services and the Berks County Emergency Management Agency. These agencies have defined the boundaries of the Limerick EPZ illustrated in Figure 1.2. Although current County plans call for a complete 360° EPZ evacuation for any evacuation scenario, NUREG-0654, Rev. 1 requires that certain geographic subareas within the EPZ also be analyzed for the purpose of estimating evacuation times. These geographic subareas, referred to as Evacuation Analysis Areas, have been identified and established based on jurisdictional boundaries pursuant to NUREG-0654, Rev. 1 guidance. Figures 1.3 through 1.16 identify these Evacuation Analysis Areas. The Analysis Area boundaries illustrate the areas for which estimated evacuation times have been developed as part of this study. A listing of these Analysis Areas, along with the municipalities included, is as follows:

Analysis Area 1: 0-2 Mile North (180°) (see Figure 1.3)
- Limerick
- Lower Pottsgrove

Analysis Area 2: 0-2 Mile South (180°) (see Figure 1.4)
- East Coventry

Analysis Area 3: 0-5 Mile Northwest (90°) (see Figure 1.5)
- Lower Pottsgrove
- New Hanover
- Upper Pottsgrove
- Pottstown

Analysis Area 4: 0-5 Mile East (90°) (see Figure 1.6)
- Limerick
- Royersford

Analysis Area 5: 0-5 Mile Southwest (90°) (see Figure 1.7)
- East Coventry
- North Coventry
- South Coventry

Analysis Area 6: 0-5 Mile South (90°) (see Figure 1.8)
- Spring City
- East Vincent

Analysis Area 7: 0-10 Mile Northwest (90°) (see Figure 1.9)

- Lower Pottsgrove
- Upper Pottsgrove
- Pottstown
- West Pottsgrove
- New Hanover
- Douglass (Berks)
- Douglass (Montgomery)
- Washington
- Colebrookdale
- Boyertown
- Earl
- Amity
- Union

Analysis Area 8: 0-10 Mile East (90°) (see Figure 1.10)

- Limerick
- Royersford
- Upper Providence
- Lower Providence
- Trappe
- Collegeville
- Skippack
- Perkiomen
- Schwenksville
- Upper Frederick
- Lower Frederick
- Upper Salford
- Green Lane
- Marlborough
- Lower Salford

Analysis Area 9: 0-10 Mile Southwest (90°) (see Figure 1.11)

- East Coventry
- North Coventry
- South Coventry
- Warwick
- East Nantmeal

Analysis Area 10: 0-10 Mile South (90°) (see Figure 1.12)

- East Vincent
- Spring City
- West Vincent
- Upper Uwchlan
- Uwchlan
- East Pikeland
- West Pikeland
- Phoenixville
- Schuylkill
- Charlestown

Analysis Area 11: Montgomery County (see Figure 1.13)

- Limerick
- Royersford
- Upper Providence
- Lower Providence
- Trappe
- Collegeville
- Skippack
- Perkiomen
- Schwenksville
- Upper Frederick
- Lower Salford
- Lower Pottsgrove
- Upper Pottsgrove
- Pottstown
- West Pottsgrove
- New Hanover
- Douglass
- Lower Frederick
- Upper Salford
- Green Lane
- Marlborough

Analysis Area 12: Chester County (see Figure 1.14)

- East Vincent
- Spring City
- West Vincent
- Upper Uwchlan
- Uwchlan
- East Pikeland
- West Pikeland
- Phoenixville
- Schuylkill
- Charlestown
- East Coventry
- North Coventry
- South Coventry
- Warwick
- East Nantmeal

Analysis Area 13: Berks County (see Figure 1.15)

Washington	Amity
Colebrookdale	Union
Boyertown	Douglass
Earl	

Analysis Area 14: Entire EPZ (see Figure 1.16)

All from Analysis Areas 11, 12, 13

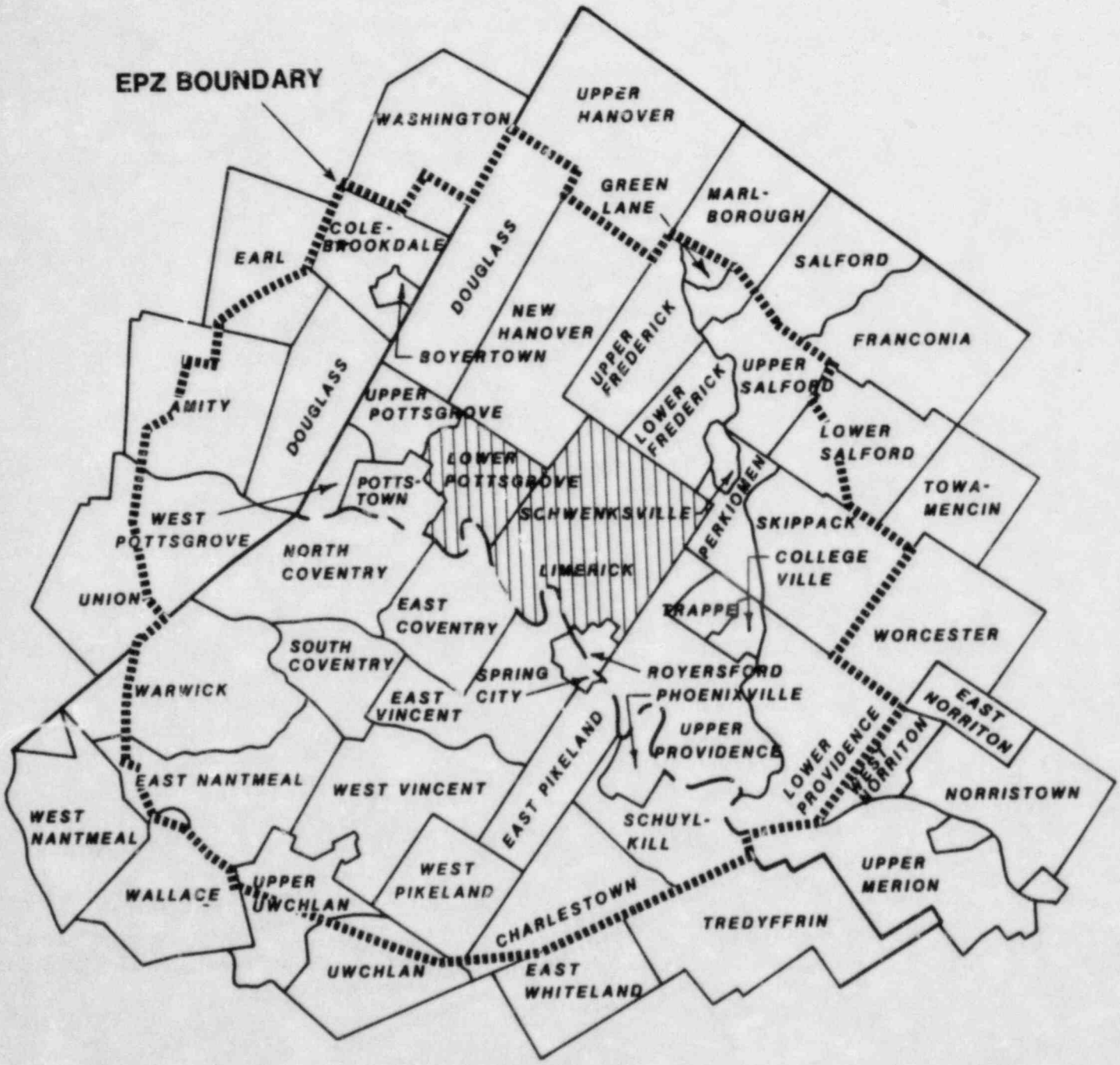


FIGURE 1.3 - ANALYSIS AREA 1: 0-2 MILE NORTH (180°)

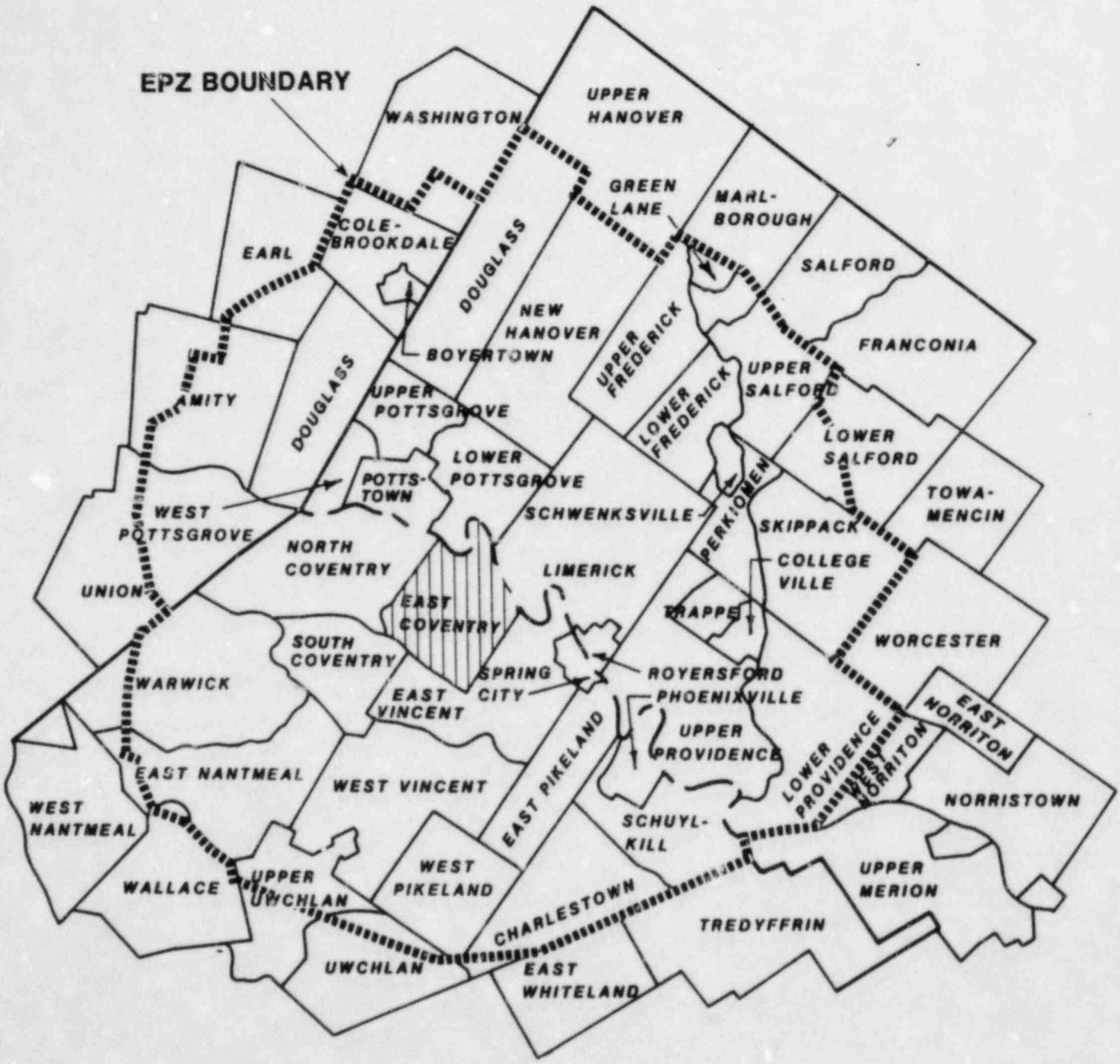


FIGURE 1.4 - ANALYSIS AREA 2: 0-2 MILE SOUTH (180^{O})

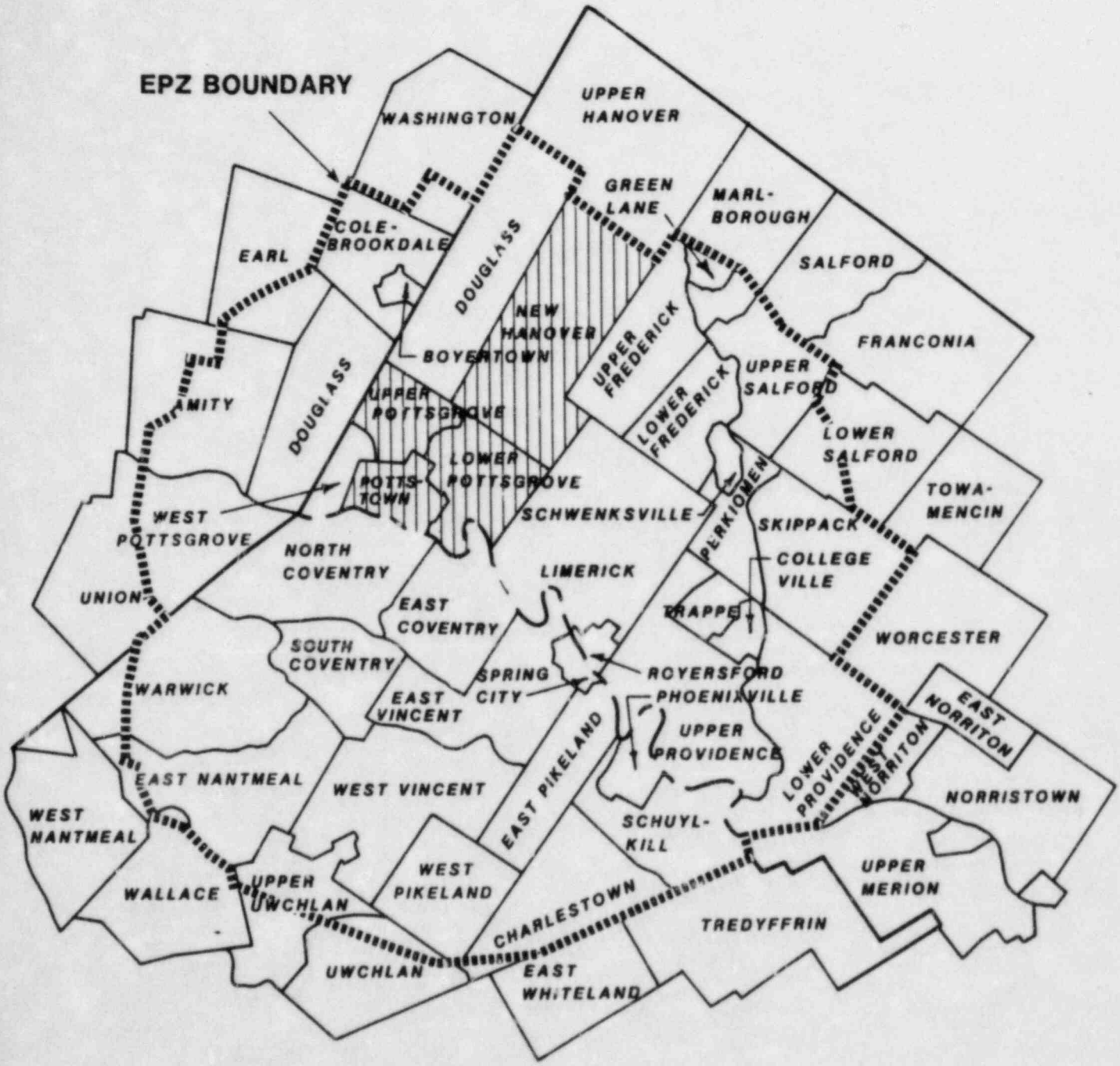


FIGURE 1.5 - ANALYSIS AREA 3: 0-5 MILE NORTHWEST (90^{O})

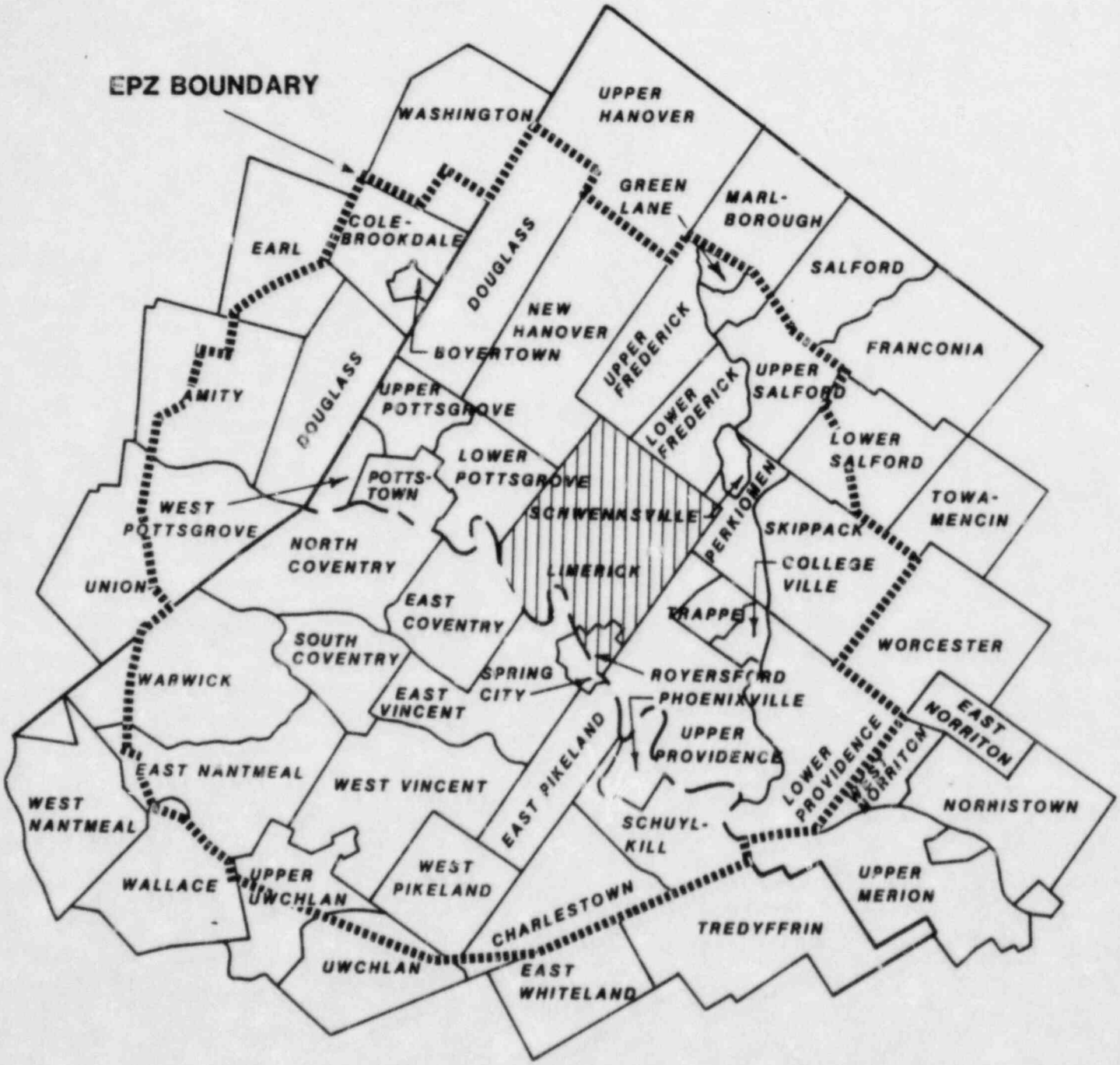


FIGURE 1.6 - ANALYSIS AREA 4: 0-5 MILE EAST (90^{O})

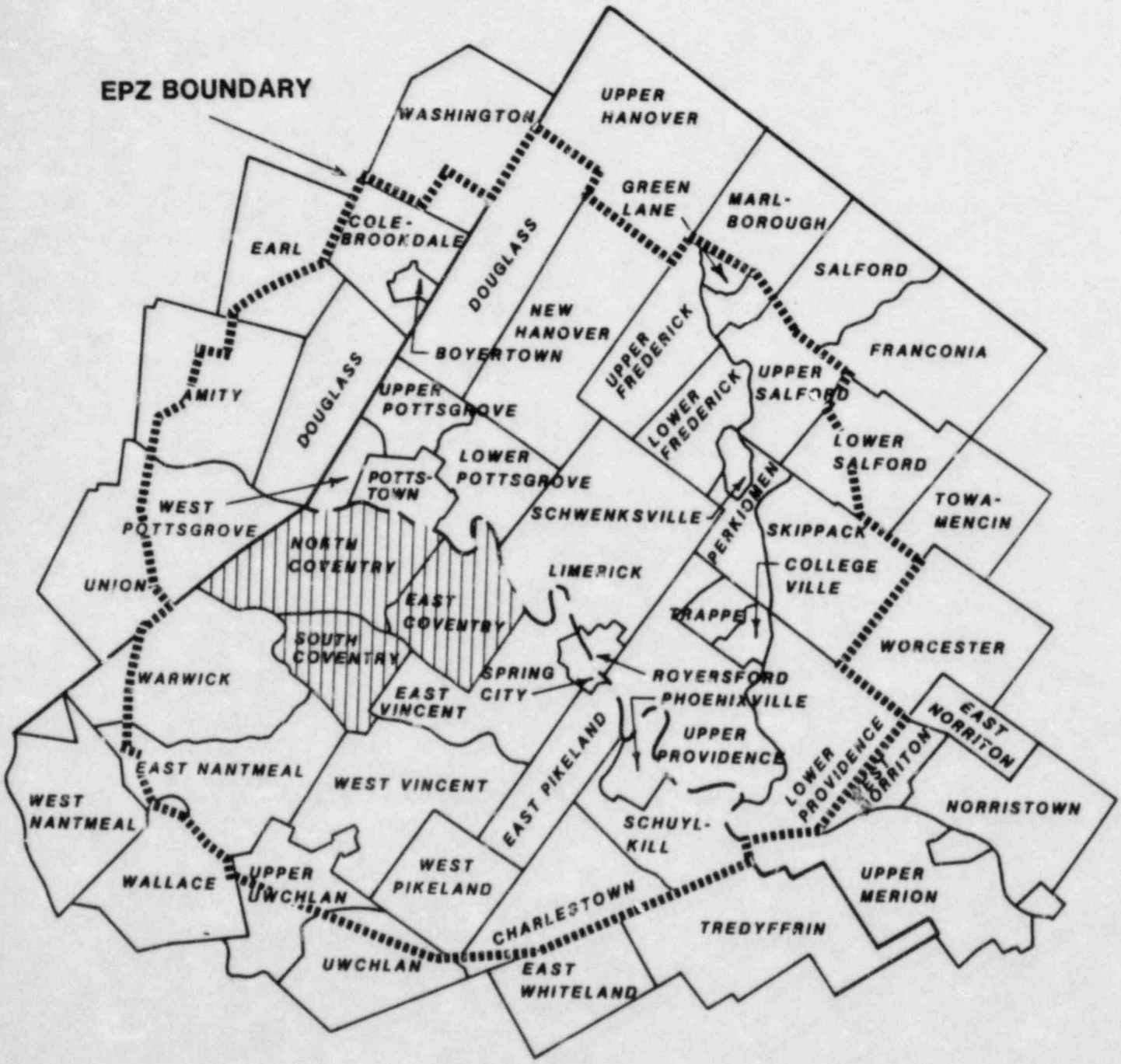


FIGURE 1.7 - ANALYSIS AREA 5: 0-5 MILE SOUTHWEST (90°)

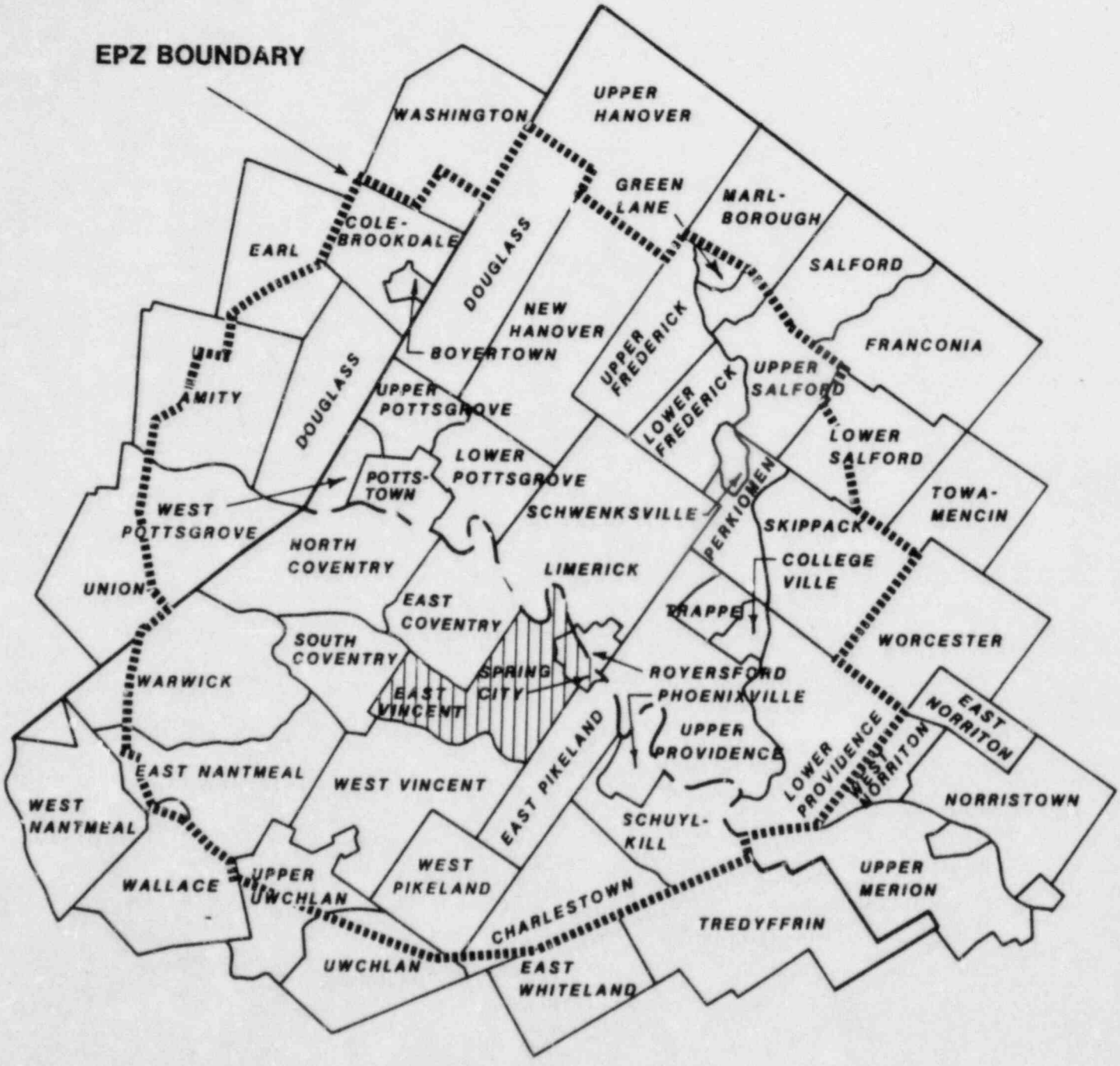


FIGURE 1.8 - ANALYSIS AREA 6: 0-5 MILE SOUTH (90^{o})

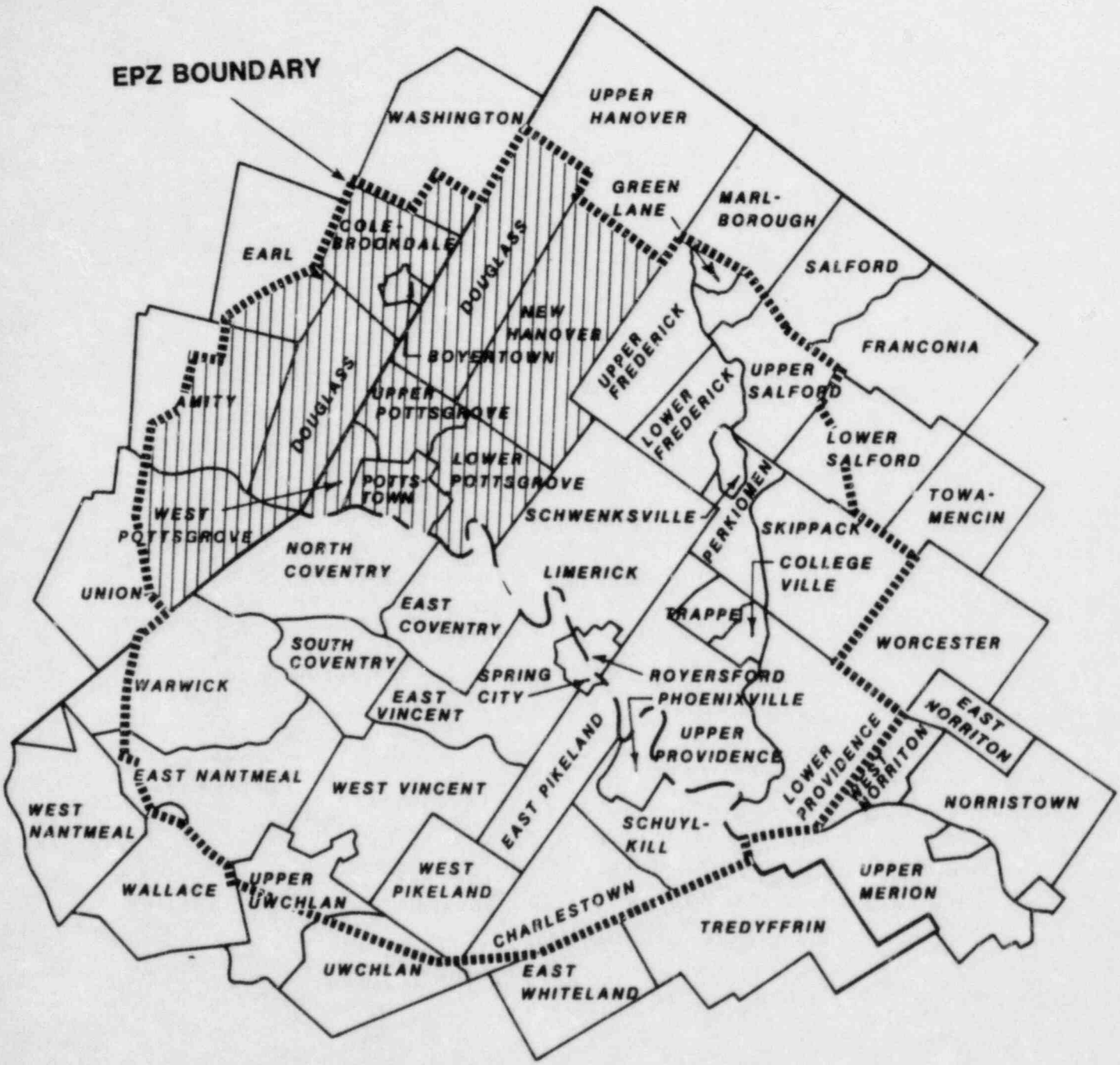


FIGURE 1.9 - ANALYSIS AREA 7: 0-10 MILE NORTHWEST (90^{O})

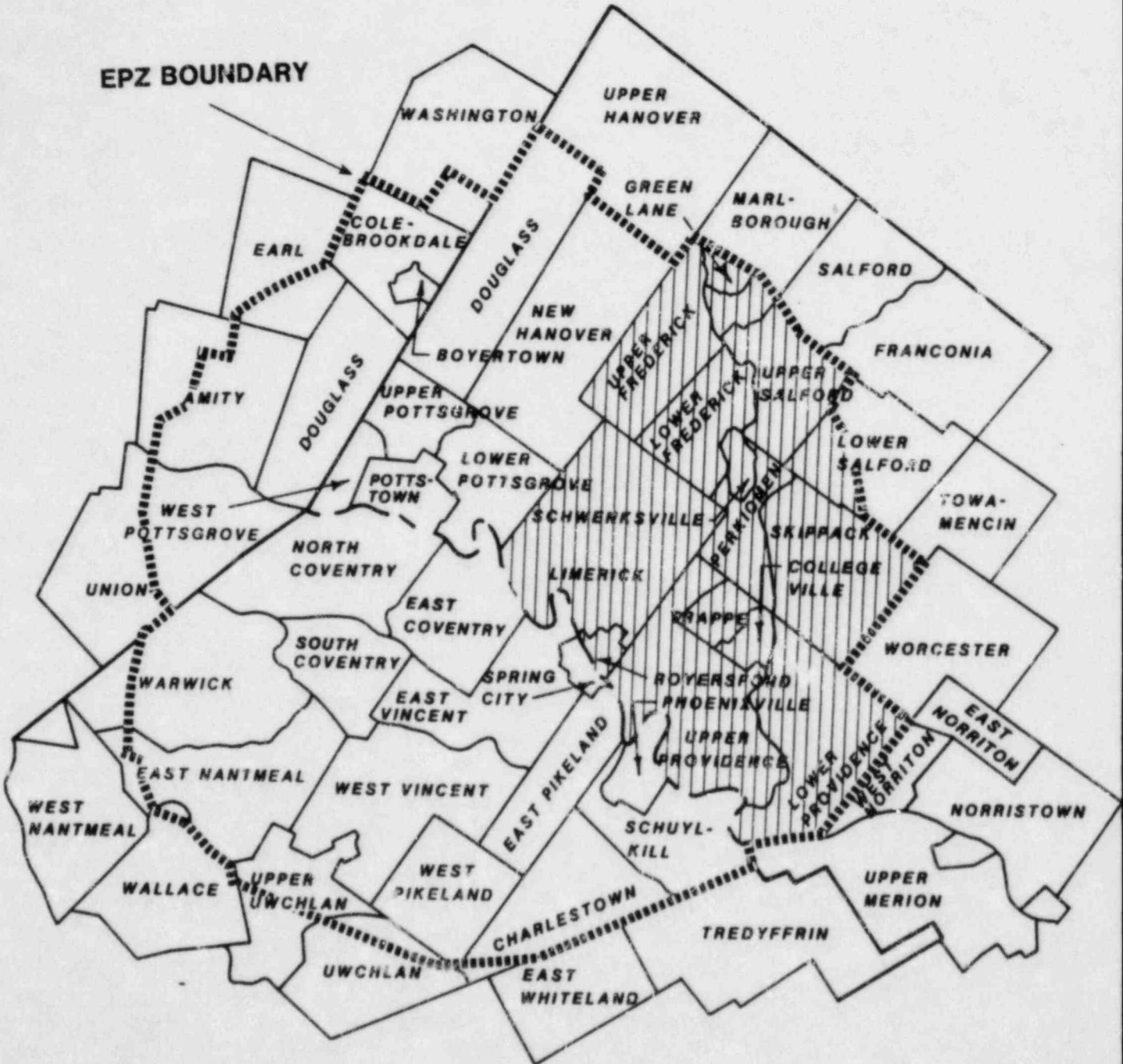


FIGURE 1.10 - ANALYSIS AREA 8: 0-10 MILE EAST (90^{o})

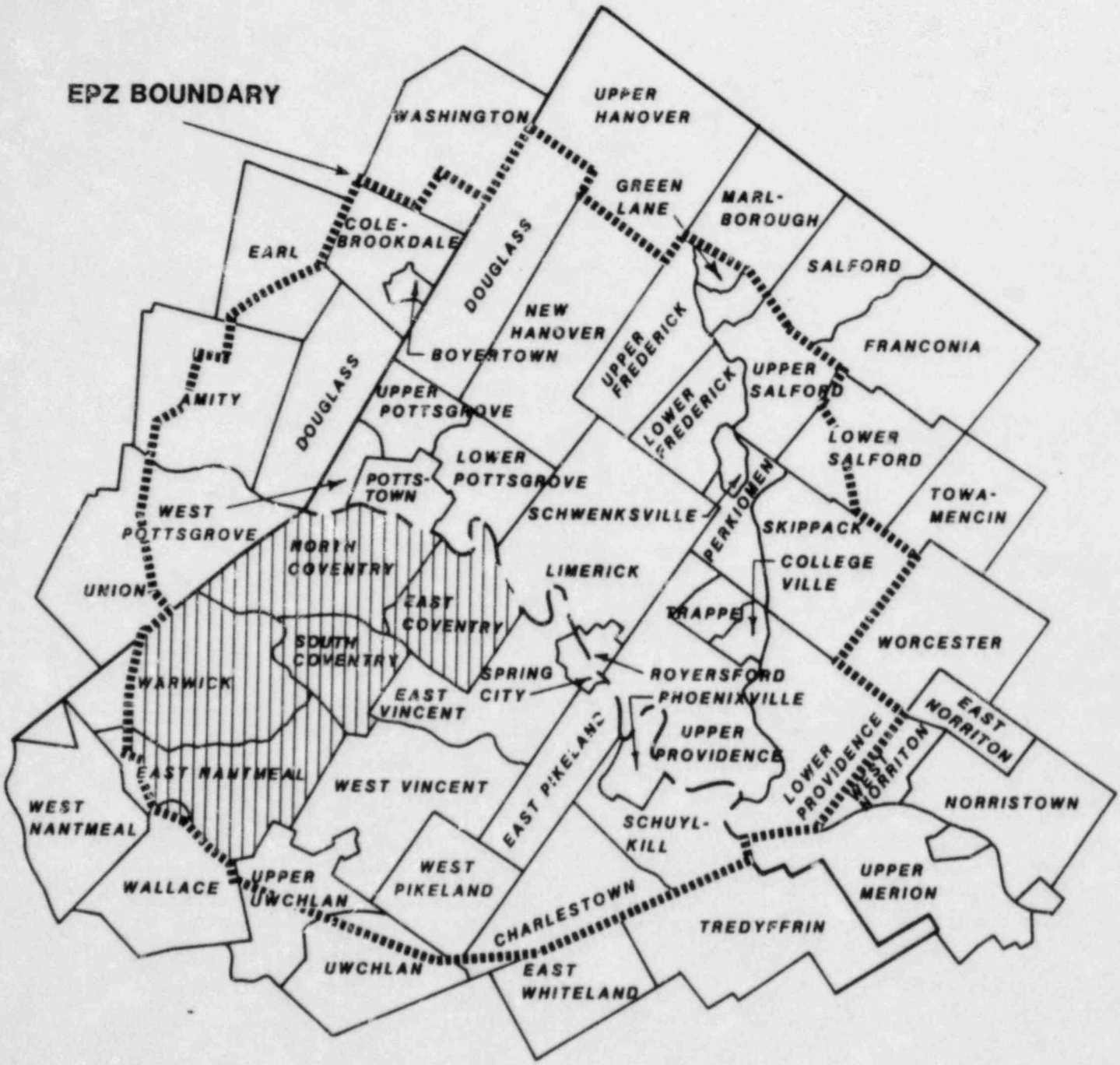


FIGURE 1.11 - ANALYSIS AREA 9: 0-10 MILE SOUTHWEST (90^{O})

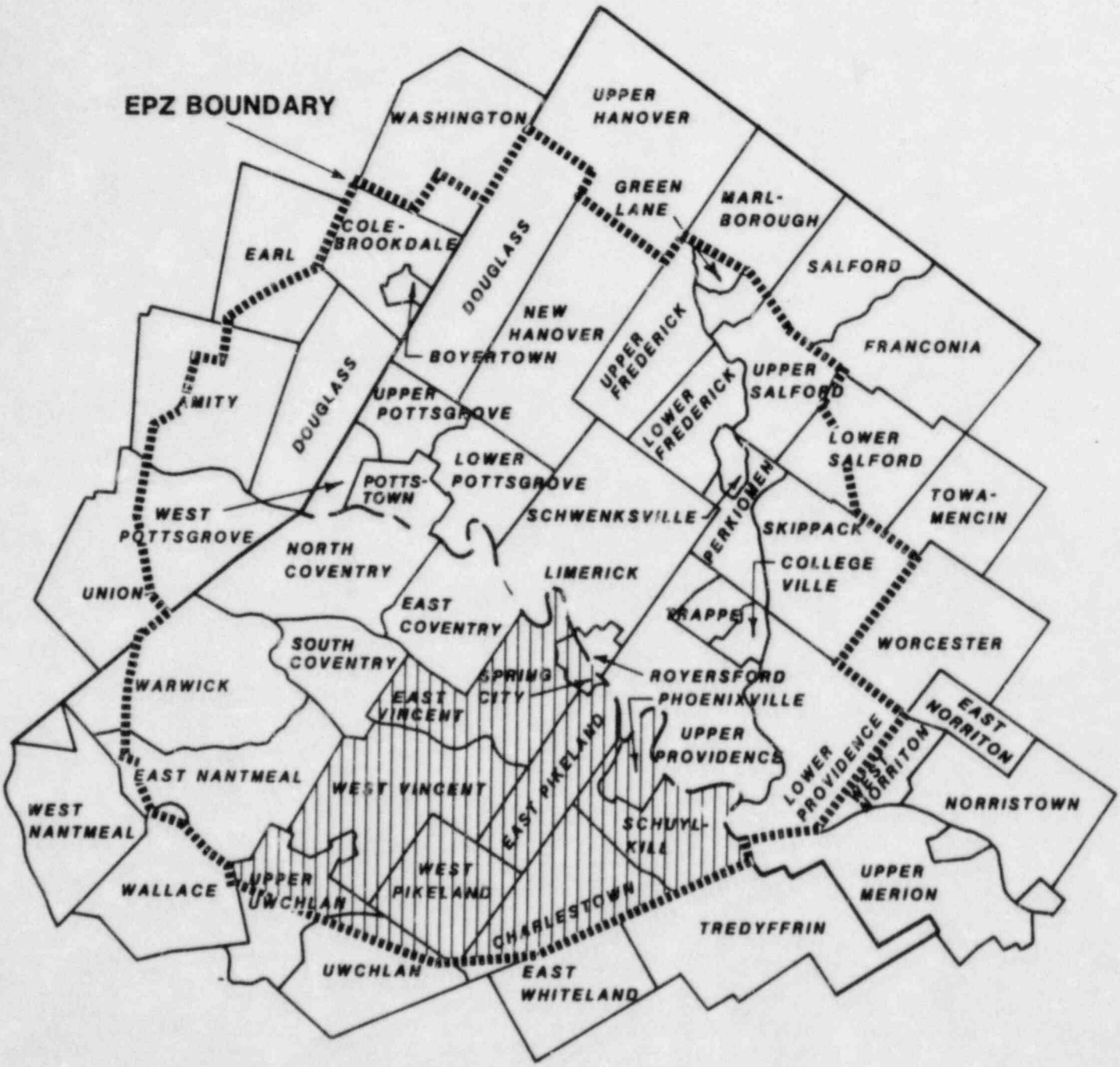


FIGURE 1.12 - ANALYSIS AREA 10: 0-10 MILE SOUTH (90^{O})

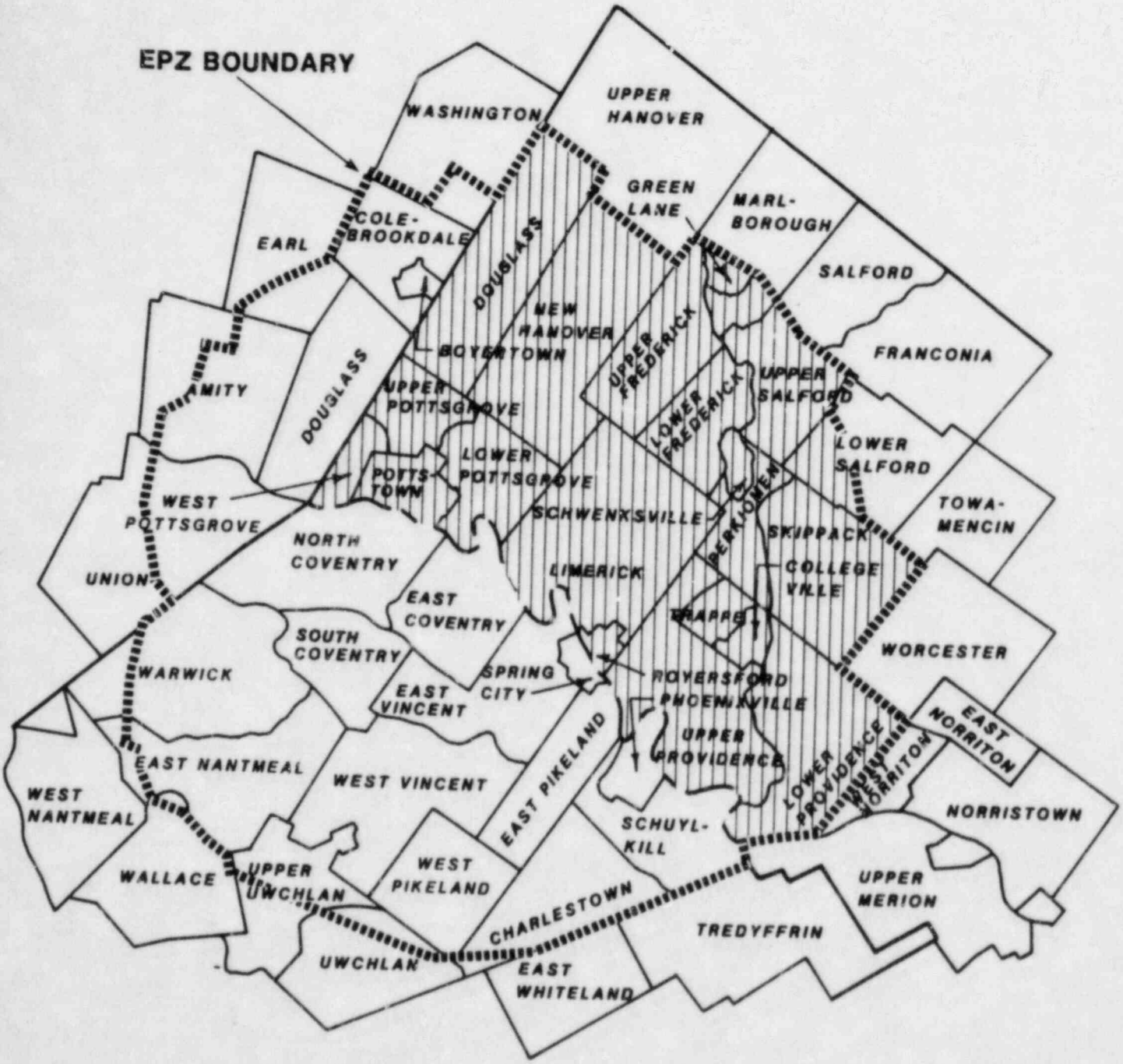


FIGURE 1.13 - ANALYSIS AREA 11: MONTGOMERY COUNTY

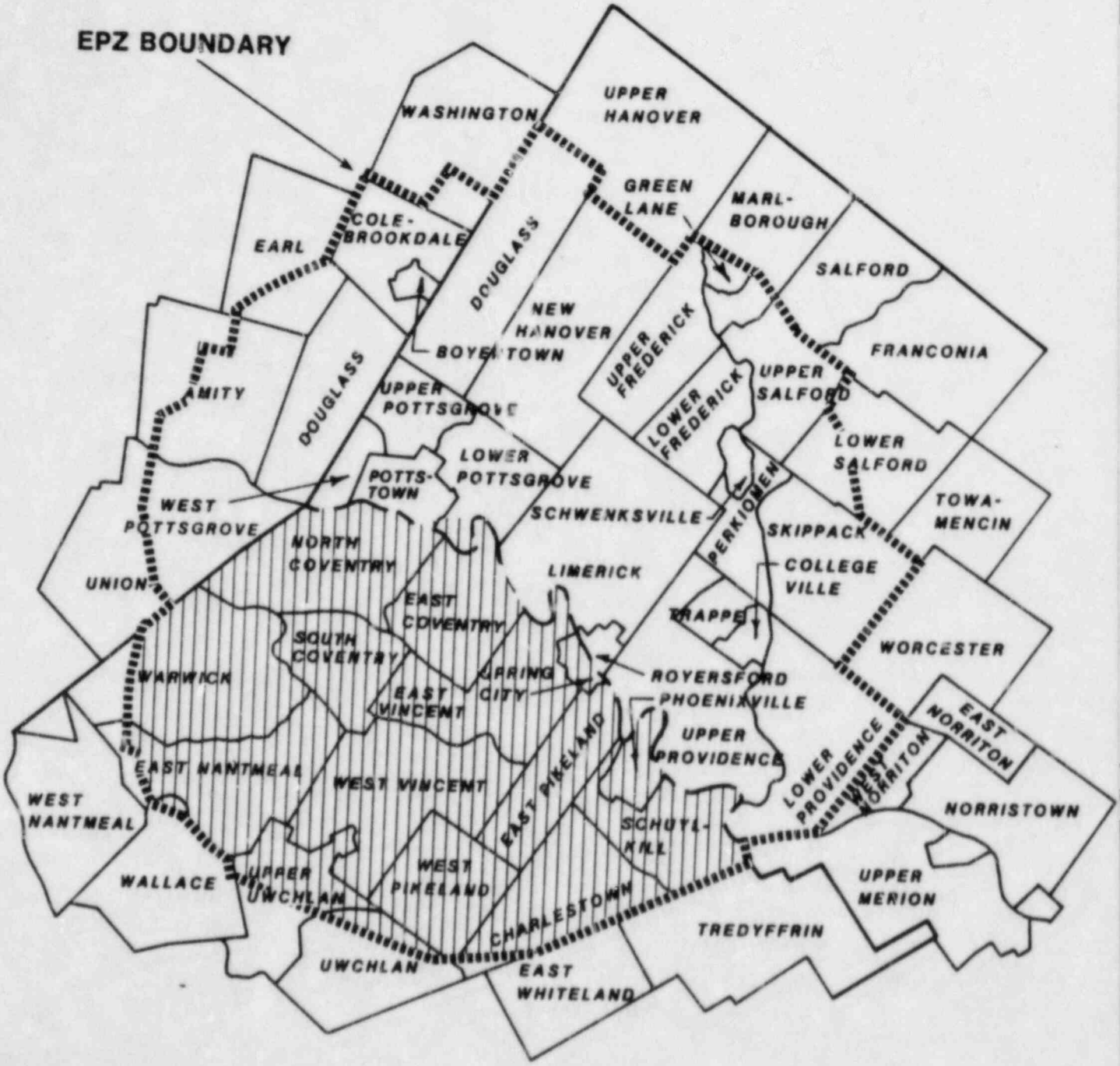


FIGURE 1.14 - ANALYSIS AREA 12: CHESTER COUNTY

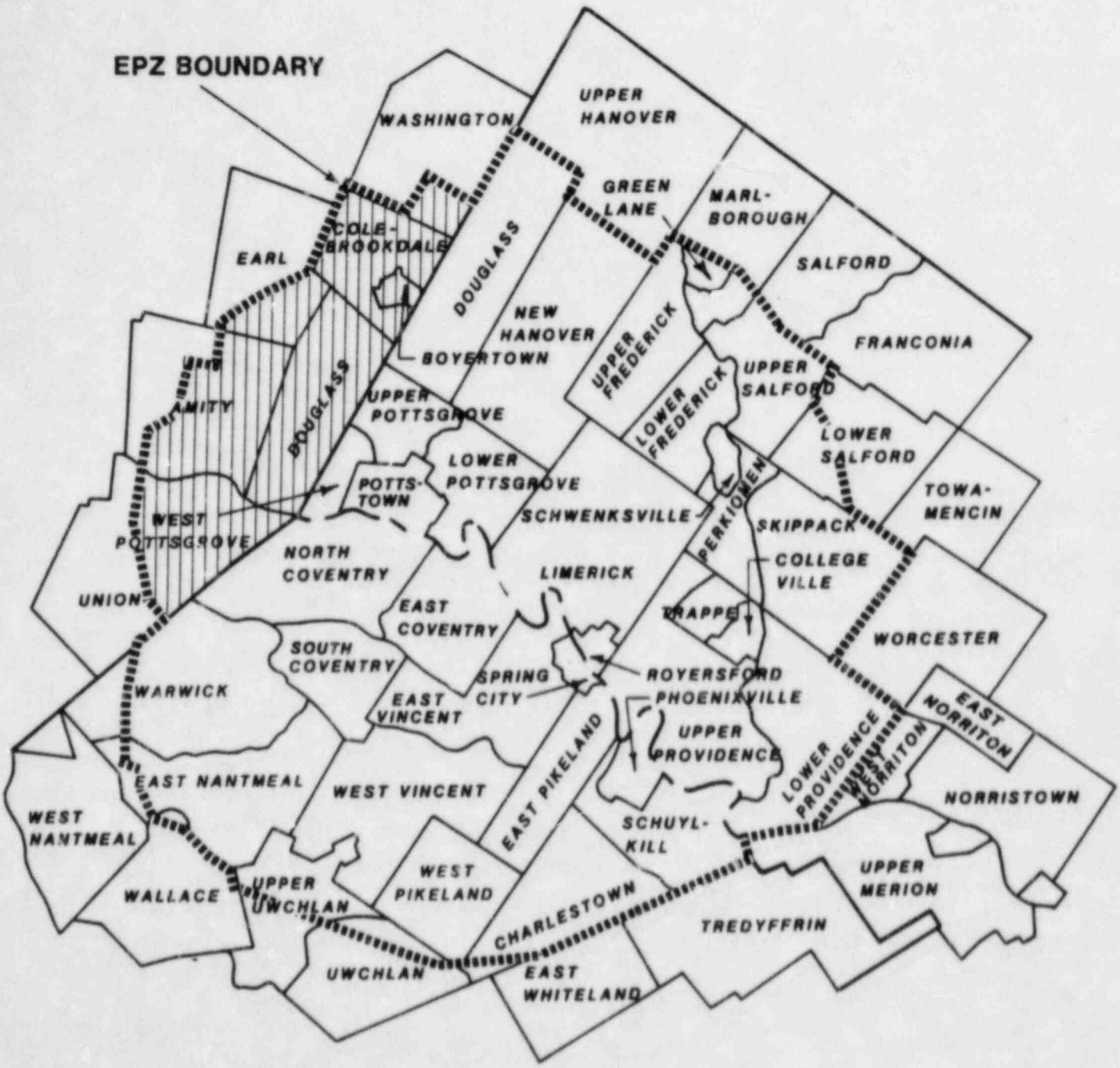


FIGURE 1.15 - ANALYSIS AREA 13: BERKS COUNTY

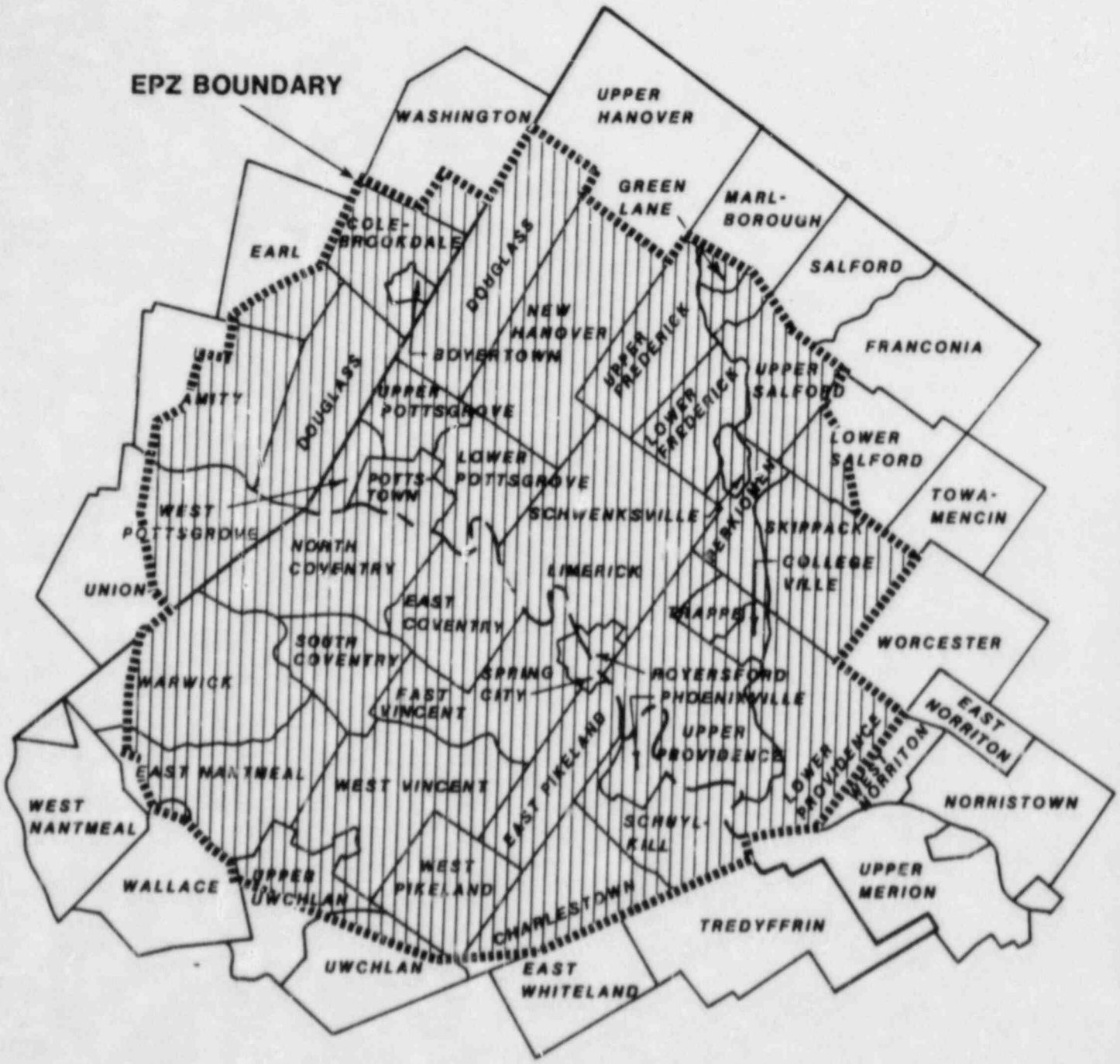


FIGURE 1.16 - ANALYSIS AREA 14: ENTIRE EPZ

2. METHODOLOGY AND ASSUMPTIONS

2.1 Sources of Data and General Assumptions

The following data sources were reviewed and assumptions made in order to develop the appropriate input required for the computer simulation model used for the evacuation analysis:

- Population estimates were developed from: (1) data presented in the current County and Local Radiological Emergency Response Plans (RERPs) (References 3-47), (2) data presented in the 1980 Federal Census for Pennsylvania (References 48-49), (3) existing data on special facilities, developed as part of the offsite emergency planning for the Limerick Generating Station (References 50-107), (4) existing, published transient and special facility population data (References 108-112), and (5) a telephone survey of major employers, hotels/motels and recreational areas conducted by HMM during March 1984 (References 113-229).

- The employment level at the Limerick Generating Station reflects estimated peak personnel during an outage.

- Roadway geometric and operational data were collected by HMM's field crews during February 1984. State and County highway maps obtained from the Pennsylvania Department of Transportation were also reviewed.

- Roadway and intersection approach capacities were calculated by the NETVAC computer model using algorithms developed from the Highway Capacity Manual (Reference 230) and relationships identified

in the Interim Materials on Highway Capacity (Reference 231).

- Preparation and mobilization times have been developed for each population component (i.e., permanent residents, seasonal residents, transients and special facilities). These times were developed in consultation with State and County emergency preparedness officials and based upon a review of site-specific characteristics of the Limerick EPZ.

- Vehicle occupancy rates for the various population segments were based upon: (1) discussions with State and County emergency preparedness officials and representatives of the various special facilities within the EPZ; (2) seasonal resident household size; and (3) peak occupancy of recreational and hotel/motel facilities within the EPZ.

- The evacuation will be conducted in accordance with State, County and Municipal RERPs.

- The evacuation time estimates represent the time required to evacuate the Limerick EPZ and analysis areas within it, including the time required for initial notification.

- It is assumed that, subsequent to initial notification, all persons within the EPZ will evacuate. Evacuation of the EPZ will be considered complete after all evacuating vehicles are outside of the EPZ.

- The general public will be evacuated to Mass Care Centers through Reception Centers outside the EPZ. Children from schools will be transported directly to designated Host schools.

- The permanent population sector will evacuate from their places of residence.

- It is assumed that existing lane utilization and existing traffic control devices will prevail during the course of the evacuation. It is also assumed that appropriate State and County personnel will restrict unauthorized access into the EPZ.

- The transport-dependent population will be evacuated by bus or ambulance through efforts coordinated by County and local emergency preparedness officials.

- Adverse weather refers to sudden rainstorms that would reduce effective roadway capacity by 20 percent for summer conditions and snowstorms that would reduce capacity by 30 percent for winter conditions.

2.2 Summary of Methodology

The evacuation time estimates developed for the Limerick EPZ are based upon a time distribution of evacuation events as opposed to a summation of sequential events. This methodology assumes that the various time components in an evacuation (i.e., the time associated with preparation, mobilization, etc.) overlap and occur within certain time ranges. The sequential methodology, which assumes that each phase of the evacuation must be completed before the next one begins, tends to over-estimate evacuation times. The time distribution approach, although more complex than the sequential approach, is based upon more realistic assumptions, hence it leads to more realistic evacuation times.

The NETVAC model was developed specifically to provide evacuation time estimates and related information for use in

emergency planning. The NETVAC program has the following characteristics:

- The model accounts for the detailed distribution of vehicle demand.
- The model considers fundamental physical and operational characteristics of the evacuation road network.
- The model provides thorough documentation of results.
- The model provides a means for examining a complex problem in a structured manner.
- The model can readily address fair weather versus adverse weather conditions.
- The model can readily address evacuation scenarios occurring at different times of day.
- The model can readily address changes in population which would be likely to occur within the EPZ at different times of the week and different times of the year.

The NETVAC program is a computer simulation model which uses traffic flow relationships to calculate and record traffic densities, speeds, flows, queues and other relevant information throughout the evacuation process. The model employs a list processing method to represent the evacuation as a series of links (roadway sections) and nodes (intersections). Traffic is first entered at designated entry nodes on the roadway network. At every simulation interval, the model processes vehicles from the links entering an intersection to the links emanating from it.

The NETVAC model includes a dynamic route selection feature whereby drivers' choice of outbound links at every intersection is based on two criteria:

1. The degree to which an outbound link leads away from the plant or the direction of specific evacuation routings where such plans exist, and

2. The traffic conditions on the outbound links (i.e., travel speeds and presence of vehicle queueing or congestion).

The roadway and intersection approach capacities calculated by the NETVAC program are based upon data and traffic flow relationships presented in the 1965 Highway Capacity Manual and the 1980 Interim Materials on Highway Capacity. Due to the dynamic route assignment mechanism, approach capacities are updated at each simulation interval to account for potential changes in turning movement volumes. The intersection control options which can be specified with the NETVAC model include intersections with traffic signals and priority control intersections (i.e., stop or yield signs).

The core of the NETVAC program is the simulation subroutine. This part of the program executes a given number of procedures at user-specified simulation intervals. The simulator includes two major logical units, the link pass and the node pass. The link pass calculates the number of vehicles that would reach the upstream node or join the queue in a given simulation interval. The node pass calculates how many vehicles should be processed from each of the inbound links entering a particular intersection to each of the outbound links. Figure 2.1 schematically represents the interrelationship between the link pass and node pass simulation procedures. A more detailed description of the NETVAC program is described in Section 5.4.

2.3 Conditions Modeled

Pursuant to NUREG-0654, Rev. 1 guidance, evacuation time estimates have been prepared for several temporal, seasonal and weather conditions. Estimates have been prepared for fair and adverse weather conditions during a winter day, fair weather conditions during a winter night, and fair and adverse weather conditions during a summer weekend.

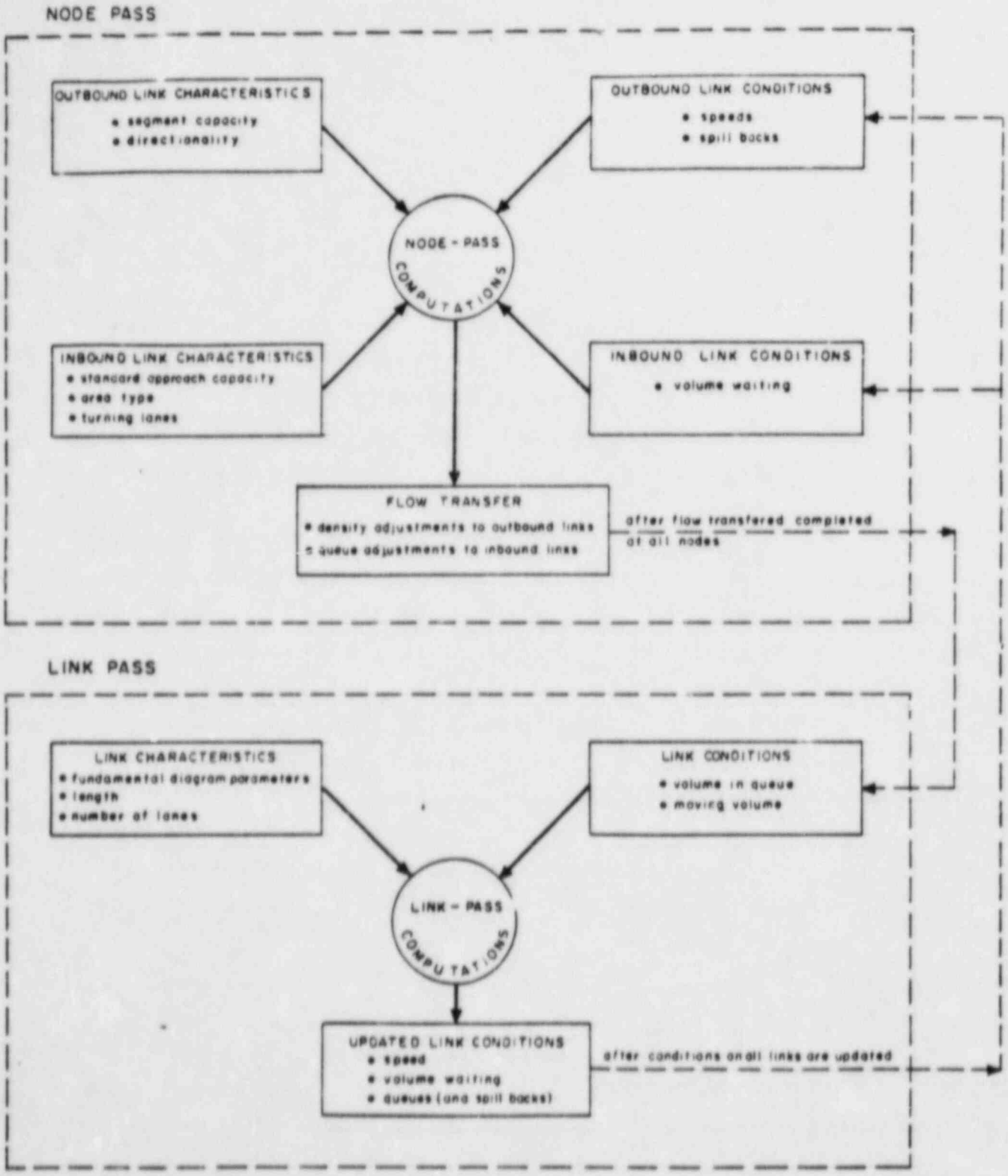


FIGURE 2.1 - NETVAC SIMULATION FLOW DIAGRAM

Fair weather refers to conditions where roadways are clear and dry, and visibility is not impaired. Adverse weather during summer periods is defined as a rainstorm condition where visibility is impaired and roadway capacities and speeds are reduced by 20 percent. Adverse weather during winter periods is defined as a snowstorm condition where roadway capacities and speeds are reduced by 30 percent (Reference 232).

The various population components which have been incorporated in the evacuation conditions modeled are summarized below:

1. Winter Day: This situation represents a typical day period during the winter when school is in session and the work force is at a full daytime level. Assumptions on the population levels for this condition include the following:

   - Permanent residents within the EPZ will evacuate from their places of residence;
   - Major work places are fully staffed at typical daytime levels;
   - The Limerick Generating Station employment is at an estimated peak daytime level during outage;
   - Schools are in session;
   - Hospitals, nursing homes and incarceration facilities are full;
   - Hotel and motel facilities are fully occupied; and
   - Recreational facilities are at peak winter daytime levels.

2. Winter Night: This situation reflects a typical night period when permanent residents are home and the work force is at a night-time level. Assumptions on the population levels for this condition include the following:

- o Permanent residents within the EPZ will evacuate from their places of residence;
- o Major work places are at typical night-time levels;
- o The Limerick Generating Station employment is at an estimated peak night-time level during outage;
- o Day schools are closed;
- o Hospitals, nursing homes and incarceration facilities are fully occupied at night-time levels;
- o Hotel and motel facilities are fully occupied; and
- o Recreational facilities are at peak winter night-time levels.

3. Summer Weekend: The summer weekend situation represents a daytime period when permanent residents are home and major work places are at typical weekend levels. Assumptions on the population levels for this condition include the following:

- o Permanent residents within the EPZ will evacuate from their places of residence;
- o Seasonal residents will evacuate from their places of residence;
- o Major work places are at typical weekend levels;
- o The Limerick Generating Station employment is at an estimated weekend level during outage;
- o Schools are closed;
- o Recreational facilities are at peak weekend levels;
- o Hospitals, nursing homes and incarceration facilities are fully occupied; and
- o Hotel and motel facilities are fully occupied.

3. POPULATION AND VEHICLE DEMAND ESTIMATION

The development of vehicle demand estimates for the Limerick EPZ consisted of two primary steps. The first step was the determination of the number and distribution of the population to be evacuated. The second step was the determination of the appropriate number of vehicles for each of the population categories. Federal guidance (NUREG-0654, Rev. 1) indicates that three population categories should be considered: permanent residents, transients and persons in special facilities (such as schools, medical facilities and nursing homes).

The methodology used to develop the total population and vehicle demand estimates within the Limerick EPZ incorporates intrinsic double-counting. For example, it is reasonable to assume that a portion of the identified employees and visitors to recreational areas are also permanent residents within the EPZ. In addition, school children, treated as an independent special facility category, are also included in the permanent population estimates. Accordingly, the population and vehicle demand estimates which have been developed are considered to be conservative (i.e., they over-estimate actual population and vehicle levels which may be in the area at any given time). For the purpose of developing evacuation time estimates, however, these figures are considered appropriate since they reflect the best available data. Population and vehicle demand estimates for each of the population categories are summarized below.

3.1 Permanent Residents

Permanent residents are defined as those persons having a permanent residence within the EPZ. 1980 Federal Census data for township and borough populations, as presented in the County RERPs, were used as a basis for estimating the total permanent resident population within the EPZ. More detailed

1980 Federal Census data, obtained from the Pennsylvania State Data Center, were used to distribute the population within each municipality for evacuation analysis purposes. Some adjustments to population totals previously presented in the County RERPS were made to townships only partially within the EPZ, based on the detailed Census data. Appendix 1 presents this detailed on 1980 Census data for the permanent resident population within the EPZ.

Figure 3.1 presents a 1980 permanent resident population rose for the Limerick EPZ. The distribution of the total permanent resident population to 22-1/2^{o} sectors and one-mile increments was based on 1980 Census data and electric utility meter data. Table 3.1 presents this same information in tabular form.

3.1.1 Auto-Owning Permanent Population

For the purpose of estimating the vehicle demand associated with the permanent resident population, an average of 3 persons per vehicle was used. This factor has previously been used by PEMA who has concurred with its use for the Limerick evacuation time estimate study. The use of this figure is consistent with 1930 Federal Census data and with existing research (Reference 233) indicating the tendency of persons to evacuate, where possible, as a family unit.

3.1.2 Transport-Dependent Permanent Population

A survey was performed by Montgomery, Chester and Berks Counties in March of 1984 to identify those persons within the Limerick EPZ who would be without access to a vehicle or in need of medical assistance in the event of an evacuation. The results of this survey, presented at the end of Appendix 1, indicate that there are a total of 3,039 transport-dependent persons residing witnin the Limerick EPZ.

Current County emergency response plans specify that the transport-dependent population will receive transportation

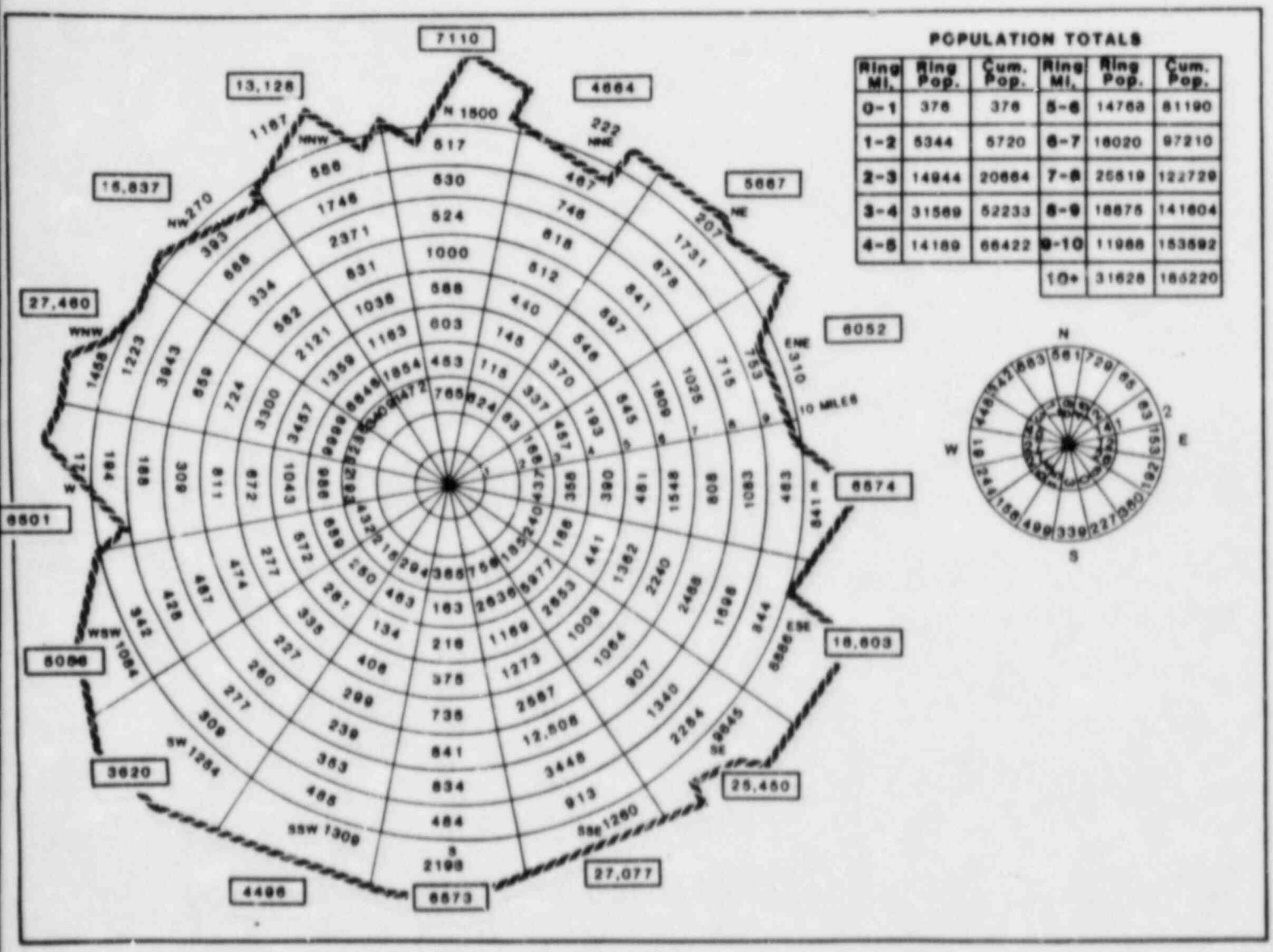


FIGURE 3.1 - 1980 PERMANENT POPULATION WITHIN THE LIMERICK GENERATING STATION EPZ

TABLE 3.1
PERMANENT POPULATION DISTRIBUTION WITHIN
THE LIMERICK GENERATING STATION EPZ
Distance (Miles)

Direction from Plant	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	Sector Total
N	69	561	765	453	603	588	1000	524	530	517	1047	453	7110
NNE	46	729	624	115	145	440	512	618	746	467	192	30	4664
NE	12	65	83	337	370	546	597	841	878	1731	207	NA	5667
ENE	14	63	168	457	193	545	1809	1025	715	753	310	NA	6052
E	12	153	437	358	390	481	1548	808	1083	463	676	165	6574
ESE	26	192	240	186	441	1362	2240	2488	1698	844	4050	4836	18,603
SE	6	380	185	5977	2653	1009	1064	907	1340	2284	7294	2351	25,450
SSE	0	227	756	2636	1169	1273	2587	12,808	3448	913	1260	NA	27,077
S	3	339	385	163	216	375	735	841	834	484	1463	735	6573
SSW	15	499	294	463	134	406	299	239	353	485	647	662	4496
SW	54	158	215	250	281	335	227	260	277	309	641	613	3620
WSW	27	244	432	689	572	277	474	487	428	342	580	504	5056
W	27	61	2193	986	1043	672	811	309	188	194	17	NA	6501
WNW	45	448	3286	9999	3457	3300	724	659	3943	1223	1458	NA	28,542
NW	3	342	3409	6646	1359	2121	562	334	668	393	270	NA	16,107
NNW	17	883	1472	1854	1163	1038	831	2371	1746	586	1167	NA	13,128
Ring Total	376	5344	14,944	31,569	14,189	14,768	16,020	25,519	18,875	11,988	21,279	10,349	185,220

assistance through efforts coordinated by County emergency service personnel. In order to estimate the total vehicle demand associated with the transport dependent population, it was assumed that vehicle loading would be 40 persons per bus except for non-ambulatory persons who would evacuate in ambulances or other emergency vehicles loaded at a rate of two persons per vehicle.

3.2 Seasonal Residents

The seasonal population category includes those residents who reside in the area on a temporary basis, particularly during the summer period. Seasonal residences are typically not insulated and are suitable for occupancy for only a portion of the year. Seasonal housing data for the area were obtained from the 1980 Federal Census of Housing. Results from seasonal housing surveys conducted by HMM at other sites have revealed an average occupancy factor of 5.4 persons per seasonal unit. This factor was used to calculate the total seasonal resident population within the EPZ. Figure 3.2 presents this seasonal resident population, by sector. The corresponding vehicle demand estimates for this population segment, assuming an average of two vehicles per seasonal unit, are presented in Appendix 3.

3.3 Transient Population

The transient population segment includes persons in the work force, hotels/motels, recreational areas and regional shopping centers. Employee population estimates were obtained from industrial work force data (References 3-5, 108-111) and were updated through a telephone survey conducted by HMM in March, 1984. A listing of all industrial and plant employers identified within the EPZ and associated employee estimates are presented in Appendix 4.

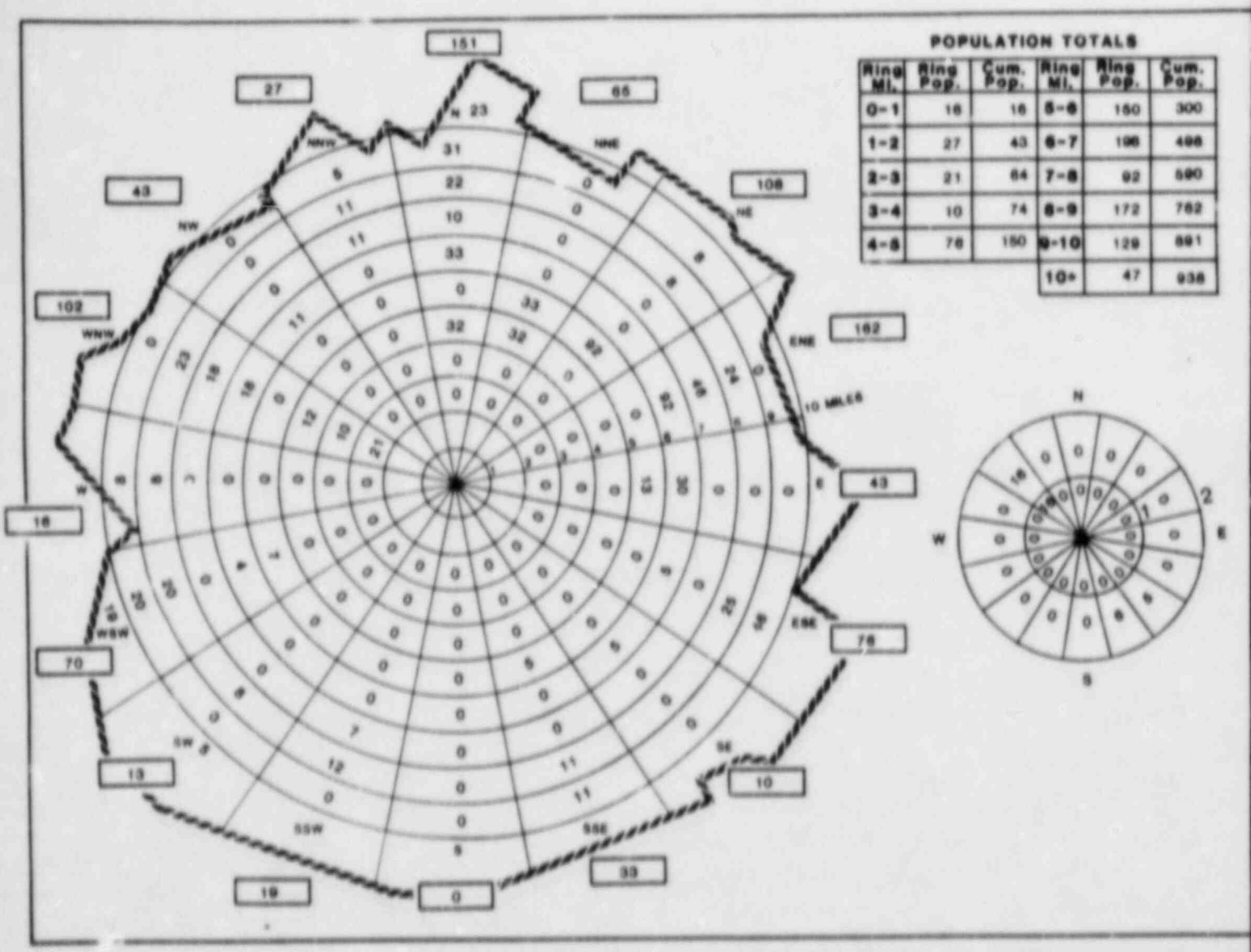


FIGURE 3.2 - SEASONAL RESIDENT POPULATION WITHIN THE LIMERICK GENERATING STATION EPZ

Data for the major hotels/motels, recreational areas and regional shopping centers within the Limerick EPZ were obtained from available publications and were updated and verified through a telephone survey conducted by HMM in March 1984. Listings of major hotels/motels, recreational areas and shopping centers within the EPZ are presented in Appendices 5, 6 and 7, respectively. Figure 3.3 presents the total transient population within the Limerick EPZ, in rose format.

For purposes of estimating the total number of vehicles associated with the transient population segment, an auto occupancy factor of 1.0 employee per vehicle was used for all work places except at the Limerick Generating Station where an average occupancy of 1.5 persons per vehicle was used, based on discussions with PECO officials. For the hotel/motel and recreational population, it was assumed that there would be 1.0 vehicle per hotel/motel unit or campsite and that recreational parking lots would be at capacity. Similarly, for regional shopping centers, it was assumed that all available parking spaces would be filled, with an average of 1.5 persons per vehicle. These occupancy rates were developed for an estimate of peak vehicle demand where campgrounds, hotels/motels and shopping centers are fully occupied. The resultant vehicle demand is conservative for periods when occupancy for these transient population categories is lower than peak levels. The vehicle demand estimates associated with the transient population segment, including the work force, hotel/motels, recreational areas and shopping centers are presented in Appendices 4, 5, 6 and 7, respectively. Intrinsic double-counting of total vehicle demand is incorporated in these estimates since a portion of the identified employees, visitors to the recreational areas and shopping center patrons are also permanent residents of the EPZ.

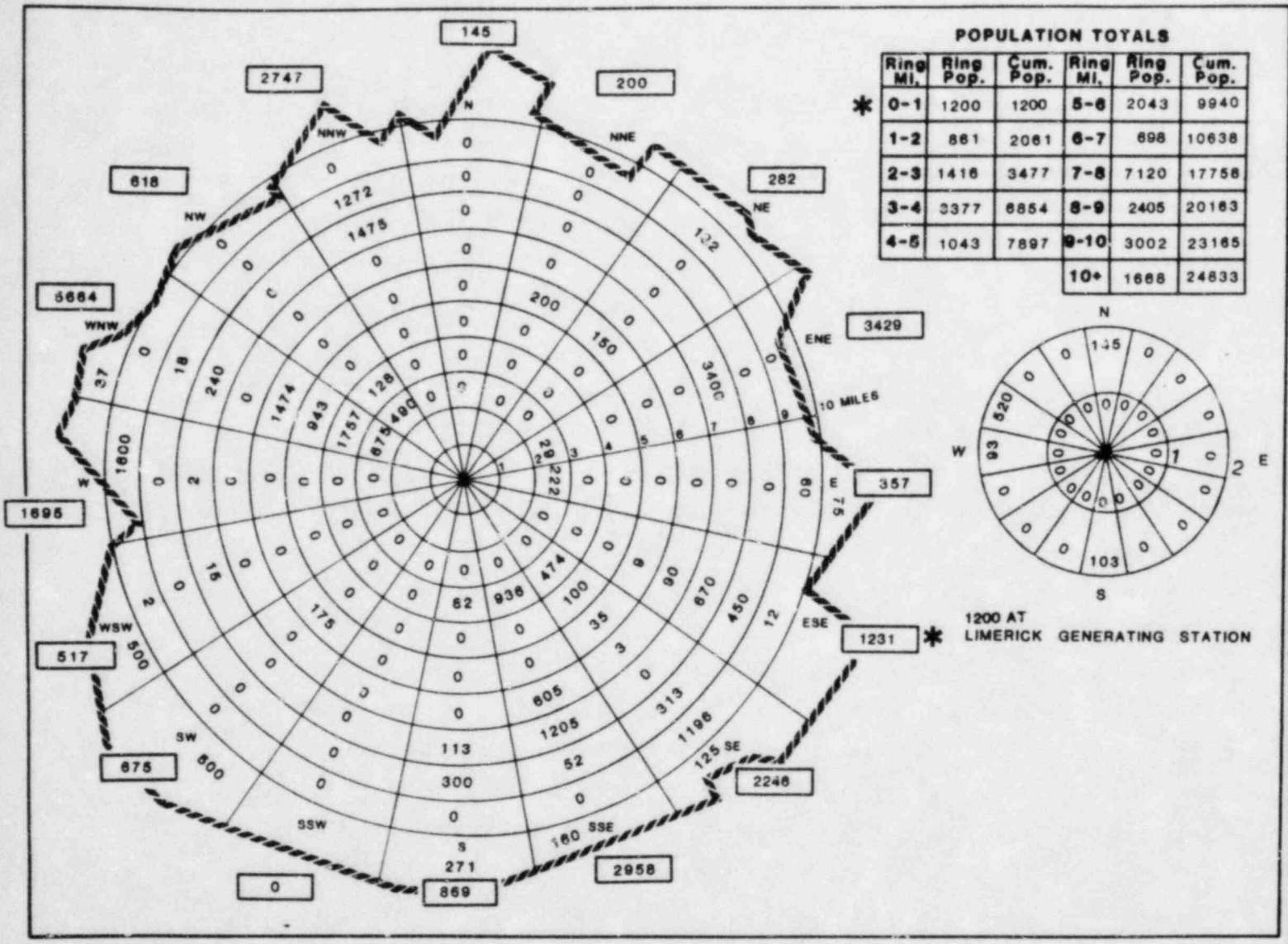


FIGURE 3.3 - TRANSIENT POPULATION (EMPLOYEES, HOTEL/MOTEL GUESTS, VISITORS TO RECREATIONAL AREAS AND SHOPPING CENTER PATRONS) WITHIN THE LIMERICK GENERATING STATION EPZ

3.4 Special Facilities Population

The special facility population segment includes persons in schools, hospitals, nursing homes and incarceration facilities who will require transportation assistance during an evacuation.

The population and vehicle demand associated with these facilities is summarized, by County, below. This summary is based upon population data and related information presented in each of the County Special Facility and School District RERP.

BERKS COUNTY

Medical, Nursing Care and Incarceration Facilities: No medical, nursing care or incarceration facilities were identified within the Berks County portion of the Limerick EPZ.

School Facilities: A total of ten school facilities have been identified within the Berks County portion of the EPZ. This total excludes four facilities under the jurisdiction of the Berks County Boyertown School District, since the facilities themselves are located in Montgomery County and are included in the Montgomery County summary. Total student enrollment for the ten schools located within Berks County is 4,184 with a total staff of 413. Student vehicle demand for each school facility was estimated by using existing data on bus capacities as identified in the RERPs, which ranges from 6 students per vehicle to 72 students per bus. In addition, since most school faculty members drive to school in private vehicles, an auto occupancy of 1 person per vehicle was used for all staff members.

CHESTER COUNTY

Medical Facilities: Two medical facilities, the Phoenixville Hospital and the Pennhurst State Hospital, are located within the Chester County portion of the Limerick EPZ. The Phoenixville Hospital is a patient care facility with a current capacity of 175 patients. Assuming that at any given time up to 50% of these patients may be non-ambulatory, a total of 44 ambulances would be required, assuming two patients per ambulance. Three additional passenger buses would be needed to evacuate the ambulatory patients from this facility. The Pennhurst State Hospital is a State facility for mentally handicapped individuals with a current resident population of 415. Of this total, 305 of the Pennhurst clients are ambulatory and could be evacuated by bus. Wheel chairs are needed by 102 patients and eight patients are non-ambulatory. A maximum of 1,150 staff members may be on duty at the facility. Evacuation of this facility would require 16 wheel chair buses, six 48-passenger buses, eight passenger vans, four ambulances and 575 employee vehicles.

Nursing Care Facilities: A total of three nursing care facilities were identified within the Chester County portion of the EPZ. The Phoenixville Manor Nursing Home, the Coventry Manor Nursing Home and the Manatawny Manor have current resident populations of 135, 41 and 219 respectively. All residents of the Phoenixville and Coventry Manor facilities are non-ambulatory and would require emergency vehicles for evacuation. Total vehicle demand for these two facilities, assuming two persons per vehicle, would be 68 and 21 ambulances (emergency vehicles) respectively. At the Manatawny Manor, 99 of the residents are non-ambulatory while 120 residents are able to move about without assistance. Assuming two persons per vehicle for the non-ambulatory residents and 40 persons per vehicle for the remaining residents, vehicle demand for the facility would consist of 50 ambulances (emergency vehicles) and three buses.

Incarceration Facilities: No jails or other incarceration facilities were identified within the Chester County portion of the EPZ.

School Facilities: In Chester County, a total of 26 schools were identified within the Limerick EPZ. This includes two facilities under the jurisdiction of the Montgomery County Spring-Ford Area School District since the facilities are actually located within Chester County. The total combined enrollment for the 26 school facilities is 9,462 students with a total of 931 staff members. Bus capacities for these school facilities, as identified in the RERPs, range from 36 to 72 students per bus. It should be noted that a majority of the facilities currently use the larger size vehicles. It is assumed that school faculty members would evacuate in private automobiles; at an auto occupancy of 1 person per vehicle.

MONTGOMERY COUNTY

Medical Facilities: Two medical facilities, the Eagleville Hospital and the Pottstown Memorial Medical Center, are located within the Montgomery County portion of the EPZ. The Eagleville Hospital has a current patient capacity of 214, while the current population at the Pottstown Memorial Medical Center is 300. All residents at the Eagleville Hospital are ambulatory and thus could be evacuated in buses, while all patients at the Pottstown Memorial Medical Center would require ambulances (emergency vehicles) in the event of an evacuation. Consequently, the vehicle demand for these two facilities would consist of six buses, assuming 40 patients per vehicle, and 150 ambulances (emergency vehicles), assuming two patients per vehicle.

Nursing Care Facilities: In Montgomery County, four nursing care facilities were identified within the Limerick EPZ. The Leader Nursing and Rehabilitation Center, the River

Crest Center, the Frederick Mennonite Home and the Montgomery County Geriatric and Rehabilitation Center have current resident populations of 225, 77, 137 and 591, respectively. The total population figure at the Leader Nursing and Rehabilitation Center consists of 159 non-ambulatory and 66 ambulatory residents. Similarly, total population at the Frederick Mennonite Home consists of 50 non-ambulatory and 87 ambulatory residents. Vehicle demand for these two facilities include 80 and 25 ambulances (emergency vehicles) along with 2 and 3 buses, respectively, assuming 2 persons per vehicle for non-ambulatory persons and 40 persons per bus for ambulatory person. All residents at the River Crest Center and the Montgomery County Geriatric and Rehabilitation Center are considered non-ambulatory and would therefore require ambulances (emergency vehicles) for evacuation. Total vehicle demand for these two facilities would be 39 and 296 ambulances (emergency vehicles), respectively.

Incarceration Facilities: The Graterford State Prison is located within the Montgomery County portion of the EPZ. The evacuation plan for this facility is being developed.

School Facilities: A total of 52 school facilities have been identified within the Montgomery County portion of the Limerick EPZ. It should be noted that this total excludes the two previously mentioned facilities located in Chester County. In addition, this total includes the four facilities from the Berks County Boyertown School District which are located within Montgomery County. Total school enrollment for the Montgomery County portion of the EPZ is 21,887 students with a total staff of 2,339. Bus capacities for Montgomery County, as identified in the RERP, range from four students per vehicle to 72 students per bus, with the majority of the schools using the larger size buses for transportation purposes. Since school faculty members and a portion of the college students in this area are assumed to evacuate in private vehicles, an auto

occupancy factor of 1 person per vehicle was assigned to calculate their vehicle demand.

A detailed listing of all special facilities within the Limerick EPZ and their associated vehicle demand are presented in Appendices 8 and 9. Figures 3.4 and 3.5 present the special facility population totals, by sector, for school facilities and for medical, nursing home and incarceration facilities, respectively, within the Limerick Generating Station EPZ.

3.5 Evacuation Analysis Study Area Population Totals

Population totals, by category, for each of the previously identified evacuation analysis areas are summarized in Table 3.2. The totals listed in this table represent the peak number of people to be evacuated for each analysis case discussed in Section 6 of this report.

A description of each of the analysis areas and associated population characteristics is presented below.

Analysis Area 1

Analysis Area 1 includes the townships of Lower Pottsgrove and Limerick. The winter weekday total population for this area is higher than the nighttime or weekend figures, due mostly to the high concentration of schools in the area which are in session during the day. It is worth noting that the majority of the employees in this area are located at the Limerick Generating Station (1,200 day, 600 nighttime and 300 weekend employees during an outage), and that the area is primarily residential.

Analysis Area 2

The boundaries of Analysis Area 2 are defined by East Coventry Township in Chester County. The total population in this area incorporates primarily permanent residents. Only one

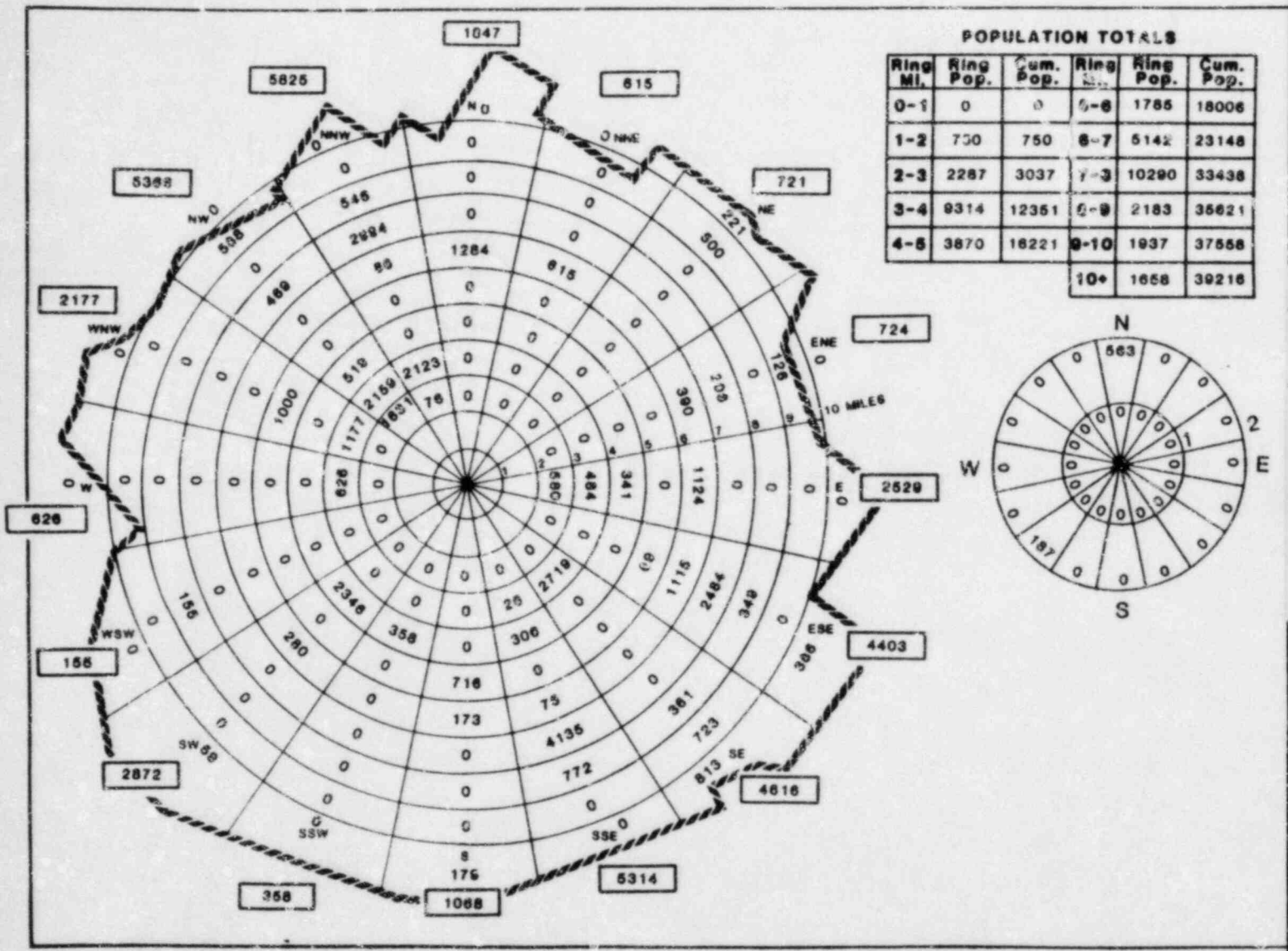
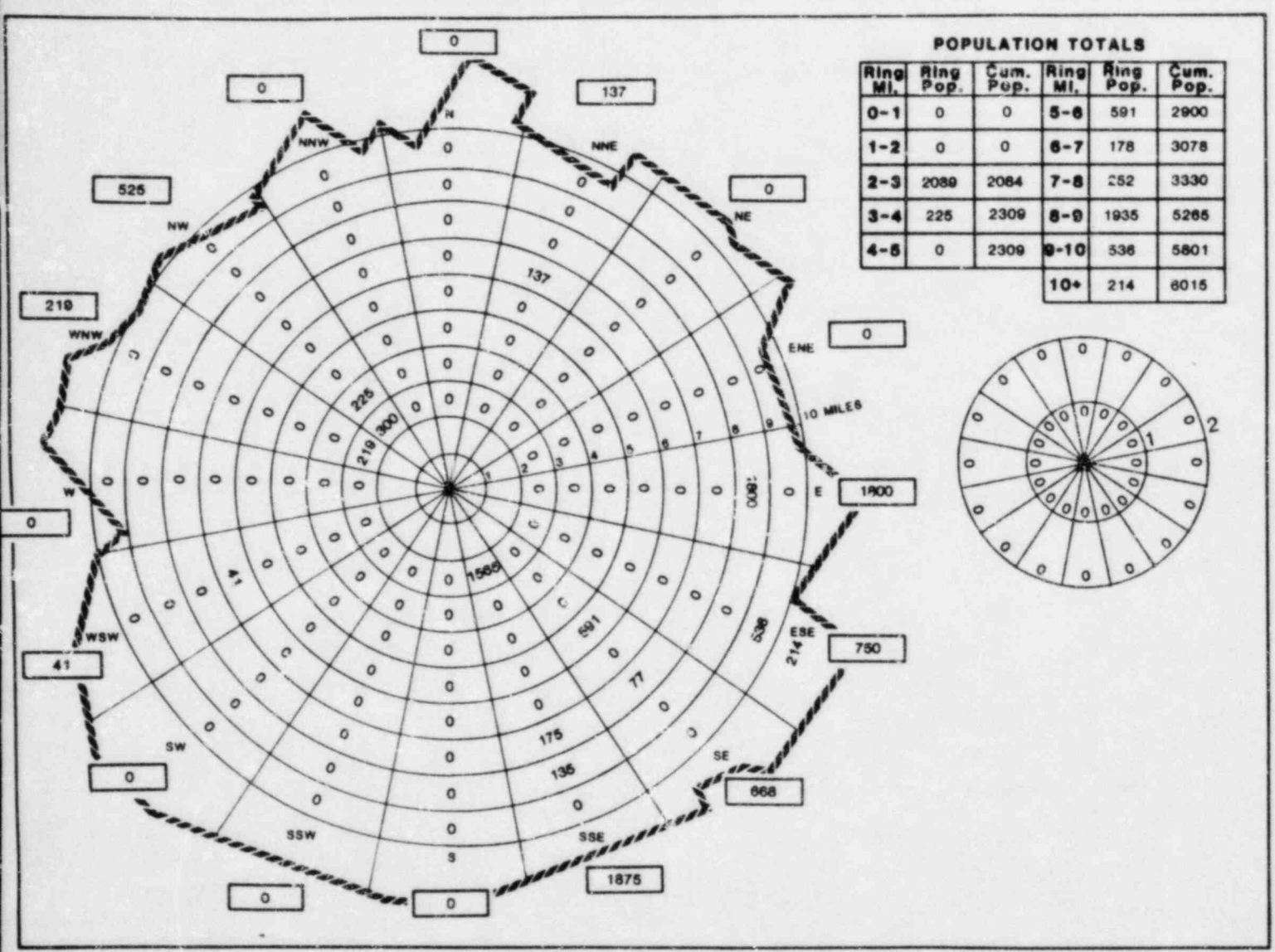


FIGURE 3.4 - SCHOOL POPULATION WITHIN THE LIMERICK GENERATING STATION EPZ



Ring Mi.	Ring Pop.	Cum. Pop.	Ring Mi.	Ring Pop.	Cum. Pop.
0-1	0	0	5-6	591	2900
1-2	0	0	6-7	178	3078
2-3	2089	2064	7-8	252	3330
3-4	225	2309	8-9	1935	5265
4-5	0	2309	9-10	536	5801
			10+	214	6015

FIGURE 3.5 - MEDICAL, NURSING HOME AND INCARCERATION FACILITY POPULATIONS WITHIN THE LIMERICK GENERATING STATION EPZ

TABLE 3.2
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 1
(Lower Pottsgrove and Limerick)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	12,597	12,597	12,597
Seasonal Resident	0	0	43
Medical and Nursing Care	0	0	0
Schools	6,048	0	0
Incarceration	0	0	0
Work Force	1,422	671	371
Recreational	145	120	1,900
Hotel/Motel	29	29	29
TOTAL POPULATION	20,241	13,417	14,940

ANALYSIS AREA 2
(East Coventry)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	4,085	4,085	4,085
Seasonal Resident	0	0	0
Medical and Nursing Care	0	0	0
Schools	187	0	0
Incarceration	0	0	0
Work Force	196	22	0
Recreational	0	0	0
Hotel/Motel	0	0	0
TOTAL POPULATION	4,468	4,107	4,085

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 3
(Lower Pottsgrove, New Hanover, Upper Pottsgrove, Pottstown)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	37,524	37,524	37,524
Seasonal Resident	0	0	194
Medical and Nursing Care	525	525	525
Schools	10,193	500	0
Incarceration	0	0	0
Work Force	3,952	1,402	347
Recreational	345	320	1,420
Hotel/Motel	248	248	248
TOTAL POPULATION	52,787	40,519	40,258

ANALYSIS AREA 4
(Limerick, Royersford)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	9,541	9,541	9,541
Seasonal Resident	0	0	11
Medical and Nursing Care	0	0	0
Schools	4,124	0	0
Incarceration	0	0	0
Work Force	1,996	987	371
Recreational	0	0	900
Hotel/Motel	29	29	29
TOTAL POPULATION	15,690	10,557	10,852

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 5
(East Coventry, North Coventry, South Coventry)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	12,805	12,805	12,805
Seasonal Resident	0	0	22
Medical and Nursing Care	260	260	260
Schools	3,439	0	0
Incarceration	0	0	0
Work Force	196	22	0
Recreational/Shopping Center	375	0	375
Hotel/Motel	30	30	30
TOTAL POPULATION	17,105	13,117	13,492

ANALYSIS AREA 6
(Spring City, East Vincent)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	8,128	8,128	8,128
Seasonal Resident	0	0	0
Medical and Nursing Care	1,565	1,565	1,565
Schools	1,030	0	0
Incarceration	0	0	0
Work Force	1,018	80	50
Recreational	175	87	350
Hotel/Motel	0	0	0
TOTAL POPULATION	11,916	9,860	10,093

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 7
(Analysis Area 3, West Pottsgrove Douglass-Berks, Douglass-Montgomery, Washington, Colebrookdale, Boyertown, Earl, Amity, Union)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	66,006	66,006	66,006
Seasonal Resident	0	0	382
Medical and Nursing Care	525	525	525
Schools	15,830	620	0
Incarceration	0	0	0
Work Force	8,289	2,437	387
Recreational	1,947	320	10,250
Hotel/Motel	335	335	335
TOTAL POPULATION	92,932	70,243	77,885

ANALYSIS AREA 8
(Analysis Area 4, Upper Providence, Lower Providence, Trappe, Collegeville, Skippack, Perkiomen, Schwenksville, Upper Frederick, Lower Frederick, Upper Salford, Green Lane, Marlborough, Lower Salford)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	62,725	62,725	62,725
Seasonal Resident	0	0	411
Medical and Nursing Care	1,019	1,019	1,019
Schools	12,993	2,128	80
Incarceration	2,336	2,336	2,336
Work Force	4,870	2,150	371
Recreational	3,849	3,000	15,015
Hotel/Motel	62	62	62
TOTAL POPULATION	87,854	73,420	82,019

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 9
(Analysis Area 5, East Nantmeal and Warkwick)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	16,142	16,142	16,142
Seasonal Resident	0	0	81
Medical and Nursing Care	260	260	260
Schools	3,594	0	0
Incarceration	0	0	0
Work Force	196	22	0
Recreational/Shopping Center	892	102	1,475
Hotel/Motel	30	30	30
TOTAL POPULATION	21,114	16,556	17,988

ANALYSIS AREA 10
(Analysis Area 6, West Vincent, Upper Uwchlan, Uwchlan, East Pikeland, West Pikeland, Phoenixville, Schuylkill, Charlestown)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	40,347	40,347	40,347
Seasonal Resident	0	0	64
Medical and Nursing Care	1,875	1,875	1,875
Schools	6,799	0	0
Incarceration	0	0	0
Work Force	3,278	478	165
Recreational	1,085	197	19,770
Hotel/Motel	0	0	0
TOTAL POPULATION	53,384	42,897	62,221

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 11
(Montgomery County)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	110,290	110,290	110,290
Seasonal Resident	0	0	637
Medical and Nursing Care	1,544	1,544	1,544
Schools	24,226	2,628	80
Incarceration	2,336	2,336	2,336
Work Force	10,279	4,063	718
Recreational	4,194	3,320	16,510
Hotel/Motel	315	315	315
TOTAL POPULATION	153,184	124,496	132,430

ANALYSIS AREA 12
(Chester County)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	56,489	56,489	56,489
Seasonal Resident	0	0	145
Medical and Nursing Care	2,135	2,135	2,135
Schools	10,393	0	0
Incarceration	0	0	0
Work Force	3,474	500	165
Recreational/Shopping Center	1,977	299	21,245
Hotel/Motel	30	30	30
TOTAL POPULATION	74,498	59,453	80,209

TABLE 3.2 (continued)
POPULATION TOTALS BY ANALYSIS AREA

ANALYSIS AREA 13
(Berks County)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	18,441	18,441	18,441
Seasonal Resident	0	0	156
Medical and Nursing Care	0	0	0
Schools	4,597	120	0
Incarceration	0	0	0
Work Force	2,880	524	40
Recreational	1,602	0	8,755
Hotel/Motel	82	82	82
TOTAL POPULATION	27,602	19,167	27,474

ANALYSIS AREA 14
(Full EPZ)

Population Category	Winter Weekday	Winter Weeknight	Summer Weekend
Permanent Resident	185,220	185,220	185,220
Seasonal Resident	0	0	938
Medical and Nursing Care	3,679	3,679	3,679
Schools	39,216	2,748	80
Incarceration	2,336	2,336	2,336
Work Force	16,633	5,087	923
Recreational/Shopping Center	7,773	3,619	46,510
Hotel/Motel	427	427	427
TOTAL POPULATION	255,284	203,116	240,113

school and three major employers were identified within Analysis Area 2.

Analysis Area 3

Analysis Area 3 includes the townships of Lower Pottsgrove, New Hanover, Upper Pottsgrove and Pottstown Borough. The majority of the population in this area is concentrated in Pottstown. The recreational population is located within New Hanover and Lower Pottsgrove. It should be noted that Pottstown is the largest borough within the EPZ with a high concentration of both permanent residents and industrial employees.

Analysis Area 4

Analysis Area 4 includes Limerick Township and Royersford Borough. The permanent and special facility population in Area 4 is lower than in Area 1 however the work force is slightly higher.

Analysis Area 5

Analysis Area 5 includes the townships of East Coventry, North Coventry and South Coventry. This area is primarily residential with almost all of the population either being permanent residents or school children. The work force, comprised only of three major employers, is completely within East Coventry Township. Five schools and two nursing care facilities are located in Analysis Area 5.

Analysis Area 6

Analysis Area 6 includes Spring City Borough and East Vincent Township. A major medical facility, the Pennhurst State Hospital with a population of 1,565, is located within

the area in East Vincent. Most of East Vincent is residential while the industrial employees in this are are concentrated in Spring City, which has several major employers.

Analysis Area 7

Analysis Area 7 consists of townships within the northwest portion of the study area including all of Analysis Area 3, West Pottsgrove and Douglass in Montgomery County, and Douglass, Washington, Colebrookdale, Boyertown, Earl, Amity and Union Townships in Berks County. Approximately 66,006 permanent residents reside within Analysis Area 7, one-third of which are located in Pottstown. Many of the peak summer recreational visitors are attracted to the Hopewell Village National Historic Park and French Creek State Park.

Analysis Area 8

Analysis Area 8 includes the east portion of the EPZ. Included within this area are all of Analysis Area 4 and the municipalities of Upper and Lower Providence, Trappe, Collegeville, Skippack, Perkiomen, Schwenksville, Upper and Lower Frederick, Upper and Lower Salford, Green Lane and Marlborough. Most of the permanent resident population and work force is concentrated in the four boroughs of Royersford, Trappe, Collegeville and Schwenksville. The populations associated with medical and nursing care facilities in the area are largely made up of patients from facilities in Upper Providence (Montgomery County Geriatric and Rehabilitation Center) and Lower Providence (Eagleville Hospital). Analysis Area 8 includes the prison population at Graterford Prison in Skippack and the Montgomery County Prison Farm in Lower Providence. The recreational population consists of visitors to town and regional parks with the largest winter weekday/night attraction being the Spring Mount Ski Area (estimated peak of 3,000 visitors per day).

Analysis Area 9

Analysis Area 9, the southwest portion of the study area, includes Analysis Area 5 and the townships of East Nantmeal and Warwick. The permanent resident population (16,142) in this area is dispersed within small communities and along the major transportation routes. There are few major work places or medical and nursing care facilities in the area. Analysis Area 9 includes the State Game Land No. 43, supporting a winter weekday population of approximately 500 visitors.

Analysis Area 10

Analysis Area 10 makes up the south portion of the EPZ and includes Analysis Area 6 and the municipalities of West Vincent, Upper Uwchlan, Uwchlan, East and West Pikeland, Phoenixville, Schuylkill and Charlestown. The largest center of permanent resident population in this area is concentrated in the borough of Phoenixville. The Pennhurst State Hospital in East Vincent (population 1,565) is the largest medical facility in the area. The school population is concentrated in Phoenixville and Schuylkill Townships. Aside from the permanent resident population, the largest population component in this study area is the summer weekend recreational population, which is comprised mostly of visitors to Marsh Creek State Park in Upper Uwchlan.

Analysis Area 11

Analysis Area 11 includes all of the Montgomery County portion of the EPZ. Of the portions of the three counties within the EPZ, the greatest concentration of permanent resident population lies within Montgomery County. The largest urbanized area within the EPZ portion of Montgomery County is Pottstown, with a population of 22,729. Located in Pottstown is a majority of the work force and hotel/motel population

within Analysis Area 11. The summer weekend recreational population is comprised of visitors to numerous recreational parks, the largest of which is the Upper Perkiomen Valley Park in Upper Frederick with an estimated peak daily attendance of 10,000 visitors during the summer.

Analysis Area 12

Analysis Area 12 includes all of the Chester County portion of the EPZ. This area includes the second greatest concentration of permanent resident population of the three counties within the EPZ. Over 73% of the medical and nursing care population in this area is located at Pennhurst State Hospital (population 1,565). Aside from the permanent resident population in the Chester County area, recreational and shopping center population represents the second largest population group. Approximately 80% of the total estimated summer weekend recreational population uses Marsh Creek State Park in Upper Uwchlan.

Analysis Area 13

Analysis Area 13 is comprised of the Berks County portion of the EPZ. Three entire municipalities and portions of four others are included in this analysis area which is located in the northwest section of the study area. The permanent resident population is dispersed throughout the area and concentrated in and around the areas of Boyertown and Birdsboro. There are no medical, nursing care or jail facilities in the Berks County portion of the EPZ and the work force is concentrated in the Boyertown area.

Analysis Area 14

Analysis Area 14 includes the entire EPZ and consists of portions of Montgomery, Chester and Berks Counties.

Approximately 60% of the permanent resident population resides in Montgomery County, about 30% in Chester County, and the remaining 10% in Berks County. The two major population centers within the EPZ are Pottstown (population 22,729) in Montgomery County and Phoenixville (population 14,165) in Chester County. Seasonal resident population is less than 1,000. Of the medical, nursing care and incarceration facilities within the EPZ, almost two-thirds of the total population of these facilities is located in Montgomery County. The majority of the winter weeknight and summer weekend work force is also concentrated in Montgomery County.

Another major component of the total EPZ population is the school facility population. A total of 39,216 students and staff are located at schools within the EPZ during a week day.

4. THE EVACUATION ROADWAY NETWORK

4.1 Network Definition

The evacuation roadway network for the Limerick EPZ was previously defined by the Pennsylvania Department of Transportation, and reviewed by PEMA and local emergency preparedness officials. This roadway network was defined based upon a general radial dispersion of trips, with consideration of vehicle demands and roadway and intersection capacities. The traffic network elements considered in the evacuation modeling consist of the major streets and intersections within the EPZ. The major streets include roadways of the following classifications:

- Expressways. As characterized by high design standards, limited access, grade separation, and primarily through traffic. Interstate Route 76 along the southern border of the EPZ is an example of an expressway.

- Arterial Streets. As characterized by continuity of travel and traffic controls and geometric designs which enhance traffic flow and safety. These roadways serve primarily as connectors of major business, population or recreation areas. Examples of main arterials are Routes 422 and 100.

- Collector Streets. Links between residential areas served by local roads and arterial streets. These are characterized by lower design standards and frequent stops at minor intersections. Examples of collector streets include Audubon Road and Walnut Street in Lower Providence and Royersford, respectively.

The smaller local residential roadways are not specifically evaluated as part of the model simulation, but are taken into account as part of the vehicle loading process. The primary evacuation routings are indicated on Figure 4.1.

4.2 Evacuation Route Descriptions

Thirteen sites in Montgomery, Chester, and Berks Counties have been designated as Reception Centers for the evacuees of the Limerick EPZ. These sites are distributed in areas outside of the EPZ. The primary evacuation routings were developed to permit a general radial travel pattern away from the plant, toward the designated Reception Centers. The locations of the thirteen Reception Centers are indicated on Figure 4.1.and listed in Table 4.1. Descriptions of the primary evacuation routes for each of the previously identified townships and boroughs are outlined below:

MONTGOMERY COUNTY

Collegeville Borough:

- Local routes to Rt. 422 East to the Pennsylvania Turnpike to Exit 27 to Willow Grove Industrial Park

Douglass Township:

- Local routes to Rt. 100 North to Rt. 29 North to Emmaus High School Complex

Green Lane Borough:

- Local routes to Rt. 63 East to Rt. 113 North to County Line Plaza

Limerick Township:

- Local routes to Rt. 422 East to the Pennsylvania Turnpike to Exit 27 to Willow Grove Industrial Park

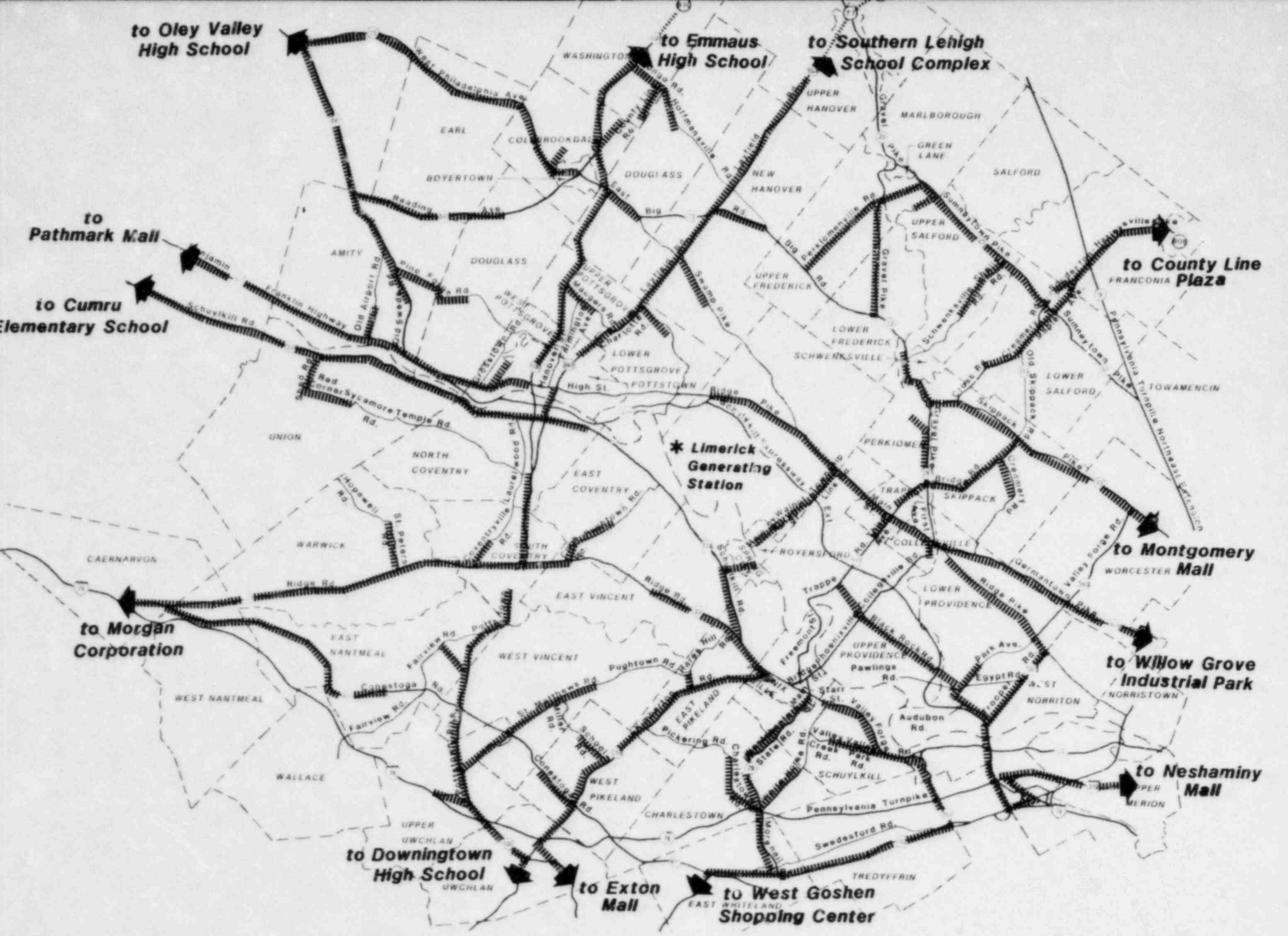


FIGURE 4.1 - PRIMARY EVACUATION ROUTES

TABLE 4.1

RECEPTION CENTERS*

Facility Name	Location
County Line Plaza	Route 309 Telford Bucks County
Cumru Elementary School	Philadelphia Avenue Shillington Berks County
Downingtown Area High School	445 Manor Avenue Downingtown Chester County
Emmaus Senior High School	Route 29 North Emmaus Lehigh County
Exton Mall	West Whiteland Chester County
Montgomery Mall	Route 202 North Wales Montgomery County
Morgan Corporation	Caernarvon Berks County
Neshaminy Mall	Route 1 Langhorne Bucks County
Oley Valley High School	Jefferson Street Oley Berks County
Pathmark Mall	Rt. 422 Reiffton Berks County
Southern Lehigh School Complex	Center Valley Lehigh County
West Goshen Shopping Center	West Goshen Chester County
Willow Grove Industrial Park	Turnpike Interchange #27 Willow Grove Montgomery County

*Source: County RERPs

Lower Frederick Township:

- Local routes to Rt. 29 North to Perkiomenville Rd. to Rt. 63 East to Rt. 113 North to County Line Plaza

Lower Pottsgrove Township:

- Local routes to Rt. 663 North to Rt. 309 North to Southern Lehigh School Complex

Lower Providence Township:

- Local routes to Rt. 363 South to the Pennsylvania Turnpike to Exit 28 to Route 1 North to Neshaminy Mall

Lower Salford Township:

- Local routes to Rt. 113 North to County Line Plaza

Marlborough Township:

- Local routes to Rt. 63 East to Rt. 113 North to County Line Plaza

New Hanover Township:

- Local routes to Rt. 663 North to Rt. 309 North to Southern Lehigh School Complex

Perkiomen Township:

- Local routes to Rt. 29 South to Rt. 113 North to Rt. 73 East to Rt. 202 North to Montgomery Mall

Pottstown Borough - NE:

- Local routes to Rt. 663 North to Rt. 309 North to Southern Lehigh School Complex

Pottstown Borough - NW:

- Local routes to Rt. 100 North to Rt. 29 North to Emmaus High School Complex

Pottstown Borough - SW:

- Local routes to Rt. 422 West to Pathmark Mall

Pottstown Borough - SE:

- Local routes to Rt. 724 West to Cumru Elementary School

Royersford Borough:

- Local routes to Main St. to Lewis Rd. to Walnut St. to Township Line Road to Rt. 422 East to the Pennsylvania Turnpike to Exit 27 to Willow Grove Industrial Park

Schwenksville Borough:

- Local routes to Rt. 73 East to Rt. 202 North to Montgomery Mall

Skippack Township:

- Local routes to Rt. 113 North to Rt. 73 East to Rt. 202 North to Montgomery Mall

Trappe Borough:

- Local routes to Rt. 113 North to Rt. 73 East to Rt. 202 North to Montgomery Mall; or
- Local routes to Rt. 422 East to the Pennsylvania Turnpike to Exit 27 to Willow Grove Industrial Park

Upper Frederick Township:

- Local routes to Rt. 63 South to Rt. 113 North to County Line Plaza

Upper Pottsgrove Township:

- Local routes to Rt. 100 North to Rt. 29 North to Emmaus High School Complex

Upper Providence Township:

- Local routes to Black Rock Rd. to Egypt Rd. to Pawlings Rd. to Audubon Rd. to Rt. 363 South to the Pennsylvania Turnpike to Exit 28 to Route 1 North to Neshaminy Mall

Upper Salford Township:

- Local routes to Rt. 63 East to Rt. 113 North to County Line Plaza

West Pottsgrove Township:

- Local routes to Rt. 422 West to Pathmark Mall

CHESTER COUNTY

Charlestown Township:

- Local routes to Rt. 29 South to Rt. 202 South to West Goshen Shopping Center

East Coventry Township:

- Local routes to Rt. 23 West to Morgan Corporation

East Nantmeal Township - West:

- Local routes to Rt. 401 West to Rt. 23 West to Morgan Corporation

East Nantmeal Township - East:

- Local routes to Rt. 100 South to Rt. 113 South to Downingtown High School

East Pikeland Township:

- Local routes to Rt. 113 South to Gordon Drive to Rt. 100 South to Exton Mall

East Vincent Township:

- Local routes to Rt. 23 East to Rt. 113 South to Gordon Drive to Rt. 100 South to Exton Mall

North Coventry Township - North:

- Local routes to Rt. 724 West to Cumru Elementary School

North Coventry Township - South:

- Local routes to Rt. 100 South to Rt. 23 West to Morgan Corporation

Phoenixville Borough - North:

- Local routes to Rt. 23 East to Rt. 252 South to Rt. 202 South to West Goshen Shopping Center

Phoenixville Borough - South:

- Local routes to Rt. 29 South to Rt. 202 South to West Goshen Shopping Center

Schuylkill Township - East:

- Local routes to Rt. 23 East to Rt. 252 South to Rt. 202 South to West Goshen Shopping Center

Schuylkill Township - West:

- Local routes to Rt. 29 South to Rt. 202 South to West Goshen Shopping Center

South Coventry Township - North:

- Local routes to Rt. 23 West to Morgan Corporation

South Coventry Township - South:

- Local routes to Rt. 100 South to Rt. 113 South to Downingtown High School

Spring City Borough:

- Local routes to Rt. 724 East to Rt. 113 South to Gordon Drive to Rt. 100 South to Exton Mall

Upper Uwchlan/Uwchlan Township:

- Local routes to Rt. 100 South to Rt. 113 South to Downingtown High School

Warwick Township:

- Local routes to Rt. 23 West to Morgan Corporation

West Pikeland Township:

- Local routes to Rt. 113 South to Gordon Drive to Rt. 100 South to Exton Mall

West Vincent Township:

- Local routes to Rt. 100 South to Rt. 113 South to Downingtown High School

BERKS COUNTY

Amity Township:

- Local routes to Rt. 662 North to Oley Valley High School; or
- Local routes to Rt. 662 South to Rt. 442 West to Pathmark Mall

Boyertown Borough:

- Local routes to Rt. 73 West to Oley Valley High School

Colebrookdale Township:

- Local routes to Rt. 73 West to Oley Valley High School; or
- Local routes to Rt. 100 North to Emmaus High School

Douglass Township:

- Local routes to Rt. 662 North to Oley Valley High School; or
- Local routes to Rt. 562 West to Rt. 662 North to Oley Valley High School

Earl Township:

- Local routes to Rt. 562 West to Rt. 662 North to Oley Valley High School

Union Township:

- Local routes to Rt. 724 West to Cumru Elementary School

Washington Township:

- Local routes to Rt. 100 North to Emmaus High School

4.3 Characterizing the Evacuation Network

After defining and mapping the links (roadway sections) and nodes (intersections) included in the evacuation roadway network, both physical and operational characteristics of the system were inventoried. Using field studies and available maps, the geometric descriptions for each component of the network were compiled. Field data included the number of lanes, lane widths, shoulder widths, distances to obstructions, grade, cruise speeds, traffic controls and other data necessary to calculate the traffic capacity of each link in the system. Traffic capacity information for each intersection in the network was also collected. Link lengths were measured from available maps.

These data were coded and keypunched for input to the NETVAC model. The model, in turn, provides a listing of the evacuation roadway network and its characteristics. The network listing, presented in Appendix 10, describes the geometric characteristics of each link in the network. The listing also describes the possible turning movements from each node and the traffic capacity of each link in the network (vehicles per hour that can be accommodated on each link during an evacuation).

For the purpose of identification, and for subsequently calculating evacuation times, the network has been coded into a system of 183 directional links and 180 nodes. For modeling purposes, certain intersections in the network are designated as nodes where automobiles enter the system. These "entry" nodes act as surrogates for actual access points (i.e., parking lots, driveways, minor collector roadways) from which the evacuating vehicles originate. In addition, "exit" nodes, are designated to reflect points at which vehicles leave the defined transportation network. All other nodes are used to indicate intersection locations.

5. EVACUATION TIME ESTIMATE METHODOLOGY

5.1 Evacuation Analysis Cases

Pursuant to NUREG-0654, Rev. 1 guidance, evacuation time estimates have been prepared for the areas approximating 180° sectors from 0-2 miles of the Limerick Generating Station; for areas approximating 90° sectors from 0-5 miles and 0-10 miles of the plant; for each County; and for the entire Limerick Plume Exposure EPZ. The sector areas have been defined to correspond to the previously identified Evacuation Analysis Areas, as indicated below:

Analysis Areas

1. 0-2 miles 180° North
2. 0-2 miles 180° South
3. 0-5 miles 90° Northwest
4. 0-5 miles 90° East
5. 0-5 miles 90° Southwest
6. 0-5 miles 90° South
7. 0-10 miles 90° Northwest
8. 0-10 miles 90° East
9. 0-10 miles 90° Southwest
10. 0-10 miles 90° South
11. Montgomery County
12. Chester County
13. Berks County
14. Entire EPZ

Time estimates have been prepared for a general evacuation scenario for each of these analysis cases for (1) Winter Day, Fair Weather Conditions, (2) Winter Night, Fair Weather Conditions, (3) Summer Weekend, Fair Weather Conditions, (4) Winter Day, Adverse Weather Conditions, and (5) Summer Weekend, Adverse Weather conditions. In addition, evacuation time estimates have been developed for two future conditions using (1) 1990 permanent population estimates, and (2) the completion of roadway improvement projects currently in progress.

5.2 Initial Notification

The EPZ surrounding the Limerick Nuclear Generating Station will have a notification system consistent with NUREG-0654, Rev. 1/FEMA-REP-1 Appendix 3 guidelines. This system will be used by County and local officials to alert the population to turn on their radios and television sets. Pursuant to NUREG 0654, Rev. 1 guidance, notification messages will commence on the designated television and EBS radio stations concurrent with sounding of the sirens. Within 15 minutes of alert notification, the population within ten miles of the plant will have received an informational or instructional message.

If evacuation is deemed necessary, the timing of the order to evacuate and notification measures will be controlled by the County and local emergency preparedness officials. They may choose to alert and mobilize an emergency response work force to control and expedite evacuation prior to the evacuation order.

5.3 Evacuation Preparation Times and Departure Distributions

It is assumed that no vehicles will begin to evacuate during the 15-minute initial notification period. It is also assumed that there would be a minimum preparation/ mobilization time of 15 minutes for all population sectors. Accordingly, no vehicles will begin to evacuate until 30 minutes following the initial notification. Network loading distribution assumptions for the permanent population, transient population, and special facilities are explained below, and summarized in Figure 5.1.

Permanent Population

Permanent residents with access to automobiles will take varying amounts of time to begin evacuating. Some persons will leave as quickly as possible; most will take some time to

FIGURE 5.1 - NOTIFICATION/PREPARATION/MOBILIZATION TIME DISTRIBUTIONS

prepare, pack valuables and clothes and then depart; and some will take added time to secure property before departing. In addition, actual departure and preparation times may vary according to the perceived severity of a particular evacuation order.

Based upon a review of the site-specific characteristics of the Limerick EPZ, as well as through discussions with State and County emergency preparedness officials, it was assumed that there would be a two-hour period over which the permanent residents would begin to evacuate. That is, permanent resident households would begin to evacuate between 30 and 150 minutes after the decision to notify the population to evacuate is made. It was further assumed that 15 percent of the permanent population would begin to evacuate between 30 and 60 minutes following the evacuation decision, 40 percent would begin to evacuate between 60 and 90 minutes, an additional 40 percent would begin to evacuate between 90 and 120 minutes, and the remaining 5 percent would begin to evacuate between 120 and 150 minutes of the notification to evacuate.

Transient Population

It was assumed that the work force would receive initial notification promptly. It was also assumed that the majority of the work force would be released expeditiously (i.e., within 30 minutes subsequent to notification). Discussions with County emergency preparedness officials indicate that up to 30 minutes may be needed for the work force to begin to evacuate. This preparation time would include the time required for securing businesses and/or shutting down active operations. Therefore, it was assumed that the work force preparation/mobilization times would be uniformly distributed over a 30-minute period. This distribution is also reasonable for the other transient population categories within the EPZ, including hotels/motels and campgrounds. Therefore, it was assumed that all of the transient population vehicles would

begin to evacuate between 30 and 60 minutes following the decision to evacuate.

Special Facilities

It was assumed that special facilities (i.e., schools, hospitals, nursing homes, jails) within the EPZ would also receive initial notification promptly. Based upon discussions with County emergency preparedness officials and with off-site planning personnel, vehicle departure times reflecting a notification/preparation/mobilization time distribution, were developed.

Consistent with the current offsite emergency response plans, it was assumed that schools will be evacuated via bus to designated Host schools. For school facilities, it was assumed that up to one hour may be required to assemble buses, transport vehicles to schools and to load students onto buses. Vehicles stationed at the facilities at the time of the ordered evacuation could be loaded onto the buses in as little as 15 minutes following notification. Accordingly, school buses were loaded onto the evacuation network from the period between 30 and 90 minutes following the decision to evacuate.

Evacuation of hospitals, nursing home facilities and incarceration facilities would require additional time associated with preparation and transport of vehicles to the respective facilities. Based upon discussions with County emergency preparedness officials, it was assumed that these facilities would begin to evacuate between 1 and 2 hours following the 15-minute notification period. Therefore, vehicles (i.e., ambulances, vans, etc.) serving these special facilities would begin to evacuate between 75 and 135 minutes following the evacuation decision.

5.4 Evacuation Simulation

Simulated evacuations were performed using the population and vehicle demand distribution data, evacuation network data,

and evacuation preparation and departure time distribution assumptions discussed in previous sections. The actual simulated evacuations were performed using the NETVAC computer program. As previously indicated, the evacuation time estimate methodology employed for this study, including the use of the NETVAC computer model, is identical to that previously used for the evacuation time estimate study prepared for the Susquehanna Steam Electric Station EPZ. The following describes the general structure of the NETVAC model and three of its major features: the dynamic route selection, the priority treatment of flow at intersections not having traffic signals, and the roadway and intersection capacity calculations.

General Structure

The NETVAC program is organized in four basic units (procedures): the main program, the data procedure, the preprocessor, and the simulator. The main program controls the simulation execution. It starts by calling on the data procedure, which reads in the data and the execution instructions, then calls in the preprocessor which performs some preliminary capacity calculations. Next, the main program controls the simulation itself and the reporting of the network conditions at specified intervals. This program also controls the rest of the reports and the length of the simulation by terminating the program once the network is empty.

The data procedure reads in the network, the parameters and the options to be used in the simulation. The data procedure performs a set of checks on the network to ensure connectivity and validity. It also performs a set of checks on the input data to identify coding errors. The data procedure also produces a set of warnings if unlikely (but possible) situations are encountered.

The preprocessor procedure converts the physical description of each link into measures of capacity, speed and

density. For each specified type of link, the preprocessor computes two types of capacity:

- Section capacity - the capacity along the link regardless of downstream intersection restrictions; and

- Approach capacity - the capacity of the link to handle vehicles approaching the downstream intersection.

Section capacities are associated with highway sections whereas the traffic flow through intersections is controlled by the approach capacity. The NETVAC program computes both capacities since they serve different purposes. The section capacity serves as an upper bound on the flow that can move along a link, restricting the number of vehicles that will reach the intersection during a simulation interval and the number of vehicles that can be loaded onto a link from the intersection. The approach capacity, on the other hand, limits the number of vehicles that can actually move through the intersection. Vehicles that reach the intersection but cannot move through it are assigned to a queue.

The NETVAC simulator includes two separate procedures, the link pass and the node pass. The link pass handles the flow on the links while the node pass handles the transfer of flow from link to link.

Dynamic Route Selection

The NETVAC program does not use a pre-specified set of turning movements at each intersection; instead, the turning movements are determined at each simulation interval as a function of the changing traffic conditions and directionality of the evacuation links. Drivers approaching an intersection are assumed to make a choice of outbound (away from the

intersection) links based on how fast this outbound link can get them to safety. This, in turn, is a function of the direction of the outbound links on the network (away from the nuclear plant or hazard area) and the traffic conditions on the outbound links.

The Priority Treatment

Even under evacuation conditions, it can be expected that traffic approaching an intersection without traffic signals from certain links would have the right of way over incoming traffic from lower priority approaches. Since it is not clear that such priority would correspond to the existing intersection controls, the input to the NETVAC program includes a user-specified link priority parameter. This is a binary parameter indicating primary or secondary priority of a link.

The volume of vehicles being processed (at every intersection and at each simulation interval) and transferred from inbound to outbound links is subject to several constraints which determine the effective capacity of the intersection. During the simulation, traffic entering primary priority links is assigned to the intersection first, subject only to the intersection capacity constraints. Lower priority traffic, on the other hand, is restricted by both the capacity of the intersection and the effect of the higher priority traffic.

The capacity of the secondary priority approaches is a function of the gap acceptance behavior of the minor approach drivers and the headway distribution in the primary approaches' flow. In order to model the capacity of secondary priority approaches, a capacity allocation problem procedure is utilized. The secondary priority approaches emit traffic only under one of the following conditions: first, if there is residual intersection capacity from the primary priority traffic, flow can be emitted into the intersection from the secondary priority road subject to the residual capacity constraint. Second, if the residual capacity is zero, the

NETVAC program provides some small capacity for the lower priority approaches.

Capacity Calculations

The capacity of a transportation facility is the maximum flow that can go through the facility. The NETVAC program determines capacity in two stages: first, the preprocessor assigns a section capacity and an approach capacity to each link in the network. Second, approach capacities are updated continuously, throughout the simulation as changing turning movements affect the maximum volume of traffic processed along each link into its downstream intersection.

The capacity calculations are based on the Highway Research Board's Highway Capacity Manual. Following this reference, the section capacity is calculated in the preprocessor for links with and without physical separation between opposing directions while the approach capacity is calculated as a function of the physical conditions (width, parking, turning pockets, etc.), environmental conditions (area type, peak hour and load factors), traffic characteristics (traffic mix and percentage of turning movements), and approach type.

The capacity of the i-th approach coming into an intersection at simulation interval t, $C_i(t)$ is given by:

$$C_i(t) = C_i \times AL(t) \times AR(t)$$

where C_i is the standard capacity of link i calculated by the preprocessor and AL(t) and AR(t) are the correction factors for left and right turning movements, respectively. These correction factors are a function of the percent of turning traffic, the approach width, and parking allowance, and do not apply when the turning traffic is using special turning lanes or turning pockets.

6. ANALYSIS OF EVACUATION TIMES

6.1 Evacuation Time Estimate Summary

Evacuation time estimates for each of the evacuation analysis areas are presented in Table 6.1 for winter weekday and summer weekend fair and adverse weather conditions, and for winter weeknight fair weather conditions. These estimates represent the total time for vehicles within the respective areas to clear the EPZ. The estimates include the time required for evacuation notification, preparation and mobilization activities.

It was reasoned that for those congested corridors where alternate routes out of the EPZ are available, a portion of the evacuating vehicles would make use of those alternate routes. Use of these alternate routings, identified below, would likely occur either by choice or as directed by traffic controllers.

- Vehicles evacuating from the southeast quadrant of Pottstown Borough, in addition to their established southbound evacuation route along Hanover Street, could use High Street westbound.

- Sumneytown Pike (Route 63) southbound, could be used as an alternate evacuation corridor for evacuees from Marlborough, Upper Frederick, Lower Frederick, Upper Salford, and Lower Salford travelling along the Souderton-Harleysville Pike or Creamery Road (Route 23) northbound.

- Ridge Pike (Main Street) through West Norriton could be used as an alternate to Route 363 south for vehicles from Lower Providence and for vehicles travelling south on Route 422.

TABLE 6.1

EVACUATION TIME ESTIMATE SUMMARY

Analysis Area			General Evacuation Time[1]									
			Winter Week Day Fair Weather		Winter Week Night Fair Weather		Summer Weekend Fair Weather		Winter[2] Week Day Adverse Weather		Summer[3] Weekend Adverse Weather	
			HRS	MINS	HRS	MINS	HRS	MINS	HRS	MINS	HRS	MINS
1	0-2 N	Lower Pottsgrove and Limerick	2	55	2	45	2	50	3	45	3	15
2	0-2 S	East Coventry	2	50	2	50	2	50	3	30	3	10
3	0-5 NW	Upper Pottsgrove, Lower Pottsgrove, Pottstown and New Hanover	4	30	4	15	4	25	6	10	5	25
4	0-5 E	Limerick, Royersford	3	30	3	10	2	55	4	45	3	25
5	0-5 SW	East Coventry, North Coventry, and South Coventry	2	50	2	50	2	50	3	55	3	10
6	0-5 S	Spring City, East Vincent	3	45	3	15	3	15	5	10	3	50
7	0-10 NW	Analysis Area 3, West Pottsgrove, Washington, Colebrookdale, Douglass-Berks, Douglass-Montgomery, Boyertown, Earl, Amity, Union	4	45	4	15	4	30	6	30	5	30
8	0-10 E	Analysis Area 4, Upper Providence, Skippack, Perkiomen, Schwenksville, Upper Salford, Green Lane, Lower Providence, Trappe, Collegeville, Upper Frederick, Lower Frederick, Marlborough, Lower Salford	4	50	4	00	4	45	6	45	5	50
9	0-10 SW	Analysis Area 5, East Nantmeal, Warwick	3	00	2	50	2	50	4	05	3	15
10	0-10 S	Analysis Area 6, West Vincent, Upper Uwchlan, West Pikeland, Phoenixville, Uwchlan, East Pikeland, Schuylkill, Charlestown	4	30	3	30	3	50	6	15	4	40
11		Montgomery County	4	50	4	15	4	45	6	45	5	50
12		Chester County	4	00	3	30	3	50	6	15	4	40
13		Berks County	4	05	2	50	2	45	5	35	3	15
14		Entire EPZ	4	50	4	15	4	45	6	45	5	50

1 All residents, transients and special facilities within the analysis area would be evacuated. Time estimates are rounded to the nearest 5-minute period.
2 Snowstorm adverse weather.
3 Rainstorm adverse weather.

- Routes 76 eastbound and 202 westbound could be used to handle excess vehicle demand using the Pennsylvania Turnpike (Route 276).

- Vehicles leaving Phoenixville Borough could travel along Route 23 north to Route 113 south, in addition to the established routes along either Route 29 or Route 23 south.

- Route 422 south to Ridge Pike south could be used as an alternate evacuation route for vehicles currently travelling south on Route 422 from the Collegeville, Trappe and Limerick areas.

A summary of the simulated evacuation times for each of the analysis areas are as follows:

Analysis Areas 1 and 2 -- 0-2 Miles N, S

The majority of the vehicles evacuating the 0-2 mile area are associated with the permanent population within the area. The estimated times to evacuate the population within the 0-2 mile area under fair weather conditions range from 2 hours, 45 minutes to 2 hours, 55 minutes. The lesser of these two times represents an evacuation under winter weeknight conditions, while the higher time represents winter weekday conditions. The only significant queueing under this scenario occurs along Route 422 eastbound (i.e., the major egress route for all vehicles from Limerick Township, including the power plant) during the first 60 minutes following the time vehicles begin to evacuate. However, preparation and mobilization times for the permanent population take up to 150 minutes following notification. Consequently, the most significant influence on the total evacuation time for the 0-2 mile area is the preparation and mobilization time for the permanent population.

For winter weekday, adverse weather (snow) conditions, the estimated evacuation times for the 0-2 mile areas are 3 hours, 45 minutes or less. It is estimated that evacuation of the 2-mile area during a summer weekend, adverse weather (rainstorm) period could be completed within 3 hours, 15 minutes. The reduced roadway capacities and travel speeds associated with the adverse weather result in the increased evacuation times (compared to fair weather conditions).

Analysis Areas 3, 4, 5 and 6 -- 0-5 Miles NW, E, SW, S

The population associated with Analysis Areas 3, 4, 5 and 6 also consists predominantly of permanent residents for all evacuation conditions. The estimated fair weather evacuation times are between 2 hours, 50 minutes and 4 hours, 30 minutes. Winter weeknight and summer weekend, fair weather evacuation time estimates are equal to or lower than for corresponding winter weekday conditions.

Queueing during evacuation of Analysis Area 3 (0-5 miles NW) is indicated along Route 663 northbound in New Hanover. Capacity restrictions along sections of Route 663 are the limiting factor in determining Case 3 evacuation times. Queueing during evacuation of Analysis Area 4 (0-5 miles E) is indicated along Route 422 eastbound in Limerick. This traffic congestion is less pronounced under the less populated weeknight and weekend conditions than it is during the winter weekday period. Queueing during evacuation of Analysis Area 6 (0-5 miles S) is indicated along portions of Route 113 southbound in West Pikeland and Uwchlan. The queueing is again more pronounced for the peak vehicle demand scenario associated with winter weekdays. Therefore, the Case 4 and Case 6 evacuation time estimates are influenced primarily by capacity limitations associated with key roadway sections.

The estimated evacuation time for Analysis Area 5 (0-5 miles SW) is 2 hours, 50 minutes for all fair weather conditions. This time is only 20 minutes longer than the

mobilization time for the permanent population. The evacuation times for this case are influenced primarily by the mobilization time for the permanent population.

Winter adverse weather evacuation time estimates for all sectors within the 0-5 mile area range between 3 hours, 55 minutes and 6 hours, 10 minutes. Summer adverse weather evacuation time estimates, meanwhile, range between 3 hours, 10 minutes and 5 hours, 25 minutes. These times are governed by capacity limitations imposed by reduced capacities and travel speeds associated with the adverse weather conditions.

Analysis Areas 7, 8, 9 and 10 -- 0-10 Miles NW, E, SW, S

The estimated evacuation times for the various 0-10 mile analysis areas under fair weather conditions range from 2 hours, 50 minutes to 4 hours, 50 minutes, as indicated on Table 6.1.

Analysis Area 8 (0-10 miles E) evacuation time estimates are the longest among estimates for all analysis cases in the 0-10 mile area. Analysis Area 8 evacuation times are governed by roadway and access ramp capacity limitations along portions of Route 363 between Audubon Road and the Pennsylvania Turnpike and along Route 422. The estimated Analysis Area 8 evacuation time under peak population, winter weekday, fair weather conditions is 4 hours, 50 minutes. The evacuation time estimates for Analysis Areas 7 and 10, meanwhile, are governed by the same roadway capacity limitations as those indicated for the corresponding 5-mile analysis sector. Therefore, for an evacuation of Analysis Area 7 (0-10 miles NW), queueing is evident along portions of Route 663 northbound in New Hanover. For an evacuation of Analysis Area 10 (0-10 miles S), congestion and queueing are evident along Route 113 southbound in West Pikeland and Uwchlan.

Analysis Area 9 evacuation time estimates are governed by the mobilization time for the permanent population, as well as

by roadway capacity limitations at key intersections along Route 23 westbound and Route 100 southbound in South Coventry.

Analysis Area 11 -- Montgomery County

Montgomery County has the largest total population of the three counties included within the EPZ. The longest fair weather evacuation time of 4 hours, 50 minutes occurs during the winter weekday. This time is governed by the large permanent resident population as well as by vehicle capacity limitations at access ramp locations along Route 363 between Audubon Road and the Pennsylvania Turnpike.

The estimated fair weather evacuation time for winter weeknight and summer weekend conditions are 4 hours, 45 minutes or less. Vehicle queueing for these cases is present at approaches to the previously identified ramp locations. During the summer, queueing is also indicated along portions of Route 113 in Souderton. Thus, capacity limitations of key roadway sections is also the determining factor of nighttime and weekend evacuation times.

Analysis Area 12 -- Chester County

The estimated winter weekday, fair weather evacuation time is 4 hours, 30 minutes. This time is governed by the large permanent population within Chester County, as well as by the capacity constraints present along sections of Route 113 southbound in West Pikeland.

The estimated evacuation time for winter night, fair weather conditions is 3 hours, 30 minutes. This reduction of one hour over the winter daytime scenario is largely due to a reduction in the combined work force and school populations. Vehicle queueing for this evacuation case is again indicated along portions of Route 113 in West Pikeland.

Vehicle queueing for the summer weekend case is indicated at the same location (i.e., Route 113 southbound) as for the

two winter cases. Capacity limitations at this location are once again the governing factor in determining the evacuation time.

The winter weekday and summer weekend, adverse weather evacuation time estimates are 6 hours, 15 minutes and 4 hours, 40 minutes, respectively. Both times are higher than their corresponding fair weather cases due to capacity restrictions caused by snow and rain.

Analysis Area 13 -- Berks County

Berks County has a lower population for each evacuation condition than either Chester or Montgomery Counties. Therefore, vehicle demand on evacuation routes from Berks County is also lower than for the evacuation of either Chester or Montgomery Counties.

The longest estimated fair weather evacuation time (4 hours, 5 minutes) occurs under winter weekday conditions. This time is governed by roadway capacity limitations along Routes 73 and 662 northbound in Oley Township.

The estimated evacuation time under winter weekday, adverse weather conditions is 5 hours, 35 minutes. The estimated summer weekend, adverse weather evacuation time is 3 hours, 15 minutes. These times are up to 90 minutes longer than for the corresponding fair weather cases. These adverse weather estimates are influenced by the capacity and speed reductions associated with snow and rain.

Analysis Area 14 -- Full EPZ

Analysis Area 14 includes the evacuation of the entire Limerick EPZ. For winter weekday, fair weather conditions, the estimated evacuation time is 4 hours, 50 minutes. This time is the same as that for the corresponding Montgomery County Analysis Area. This evacuation time is influenced primarily by

the capacity limitations of access ramps to Route 363 and to the Pennsylvania Turnpike in the extreme southeast corner of the EPZ (i.e., just east of Valley Forge National Park). Another location where queueing is indicated is along a section of Route 422 eastbound in Collegeville Borough. A summary of the locations where vehicle queueing occurs during the course of an evacuation for winter weekday, fair weather conditions is presented in Appendix 11. Also, Figure 6.1 presents a summary of cumulative vehicle departures from the Limerick EPZ, as a function of time, for the winter weekday condition. A review of this figure indicates a steady rate of increase of vehicles leaving the EPZ during the time period between 1 and 3 hours following the evacuation order.

The estimated evacuation time for winter weeknight, fair weather conditions is 4 hours, 15 minutes. Vehicle queueing that occurs during the course of this evacuation is present, although in a less pronounced form, at the same locations as for daytime conditions. Figure 6.2 summarizes the total departures from the EPZ, as a function of time, for winter weeknight, fair weather conditions.

The estimated evacuation time for summer weekend, fair weather condition is 4 hours, 45 minutes. This time is the same as the estimated time for the corresponding Analysis Areas 8 (0-10 miles E) and 11 (Montgomery County).

A summary of locations where vehicle queueing occurs during the course of an evacuation for the summer weekend, fair weather scenario is presented in Appendix 11. Also, Figure 6.3 presents a summary of cumulative vehicle departures from the Limerick EPZ, as a function of time, for the summer weekend, fair weather condition. A comparison of Figure 6.3 with Figure 6.1 shows that in accordance with the similar evacuation times for the two conditions (i.e., winter weekday versus summer weekend), the departure rates from the EPZ are also comparable. The basic difference between these two scenarios is that the winter weekday school and work force population is replaced by a summer weekend recreational population having similar preparation and mobilization time.

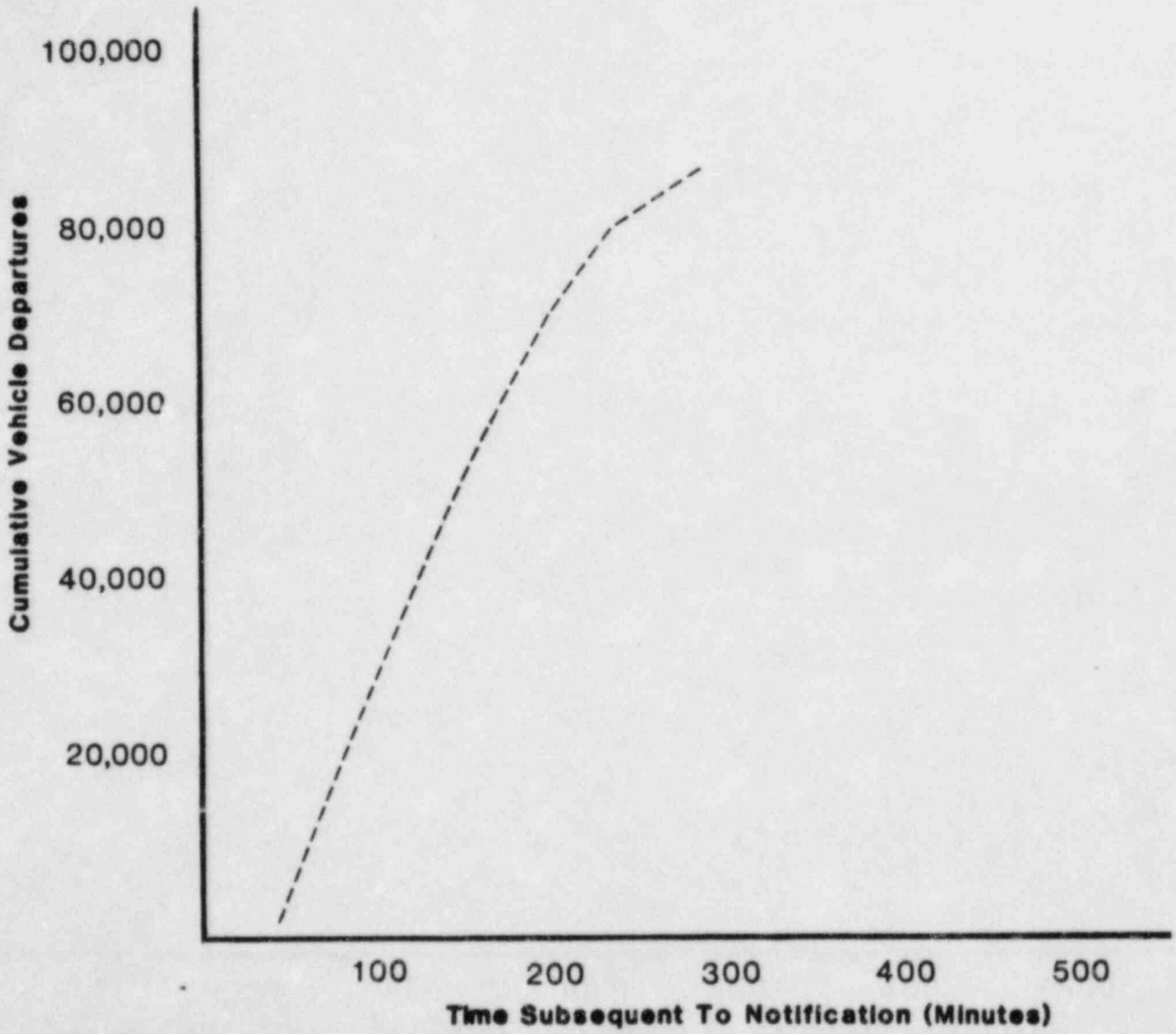


FIGURE 6.1 CUMULATIVE VEHICLE DEPARTURES FROM THE LIMERICK GENERATING STATION EPZ, WINTER WEEKDAY FAIR WEATHER CONDITION

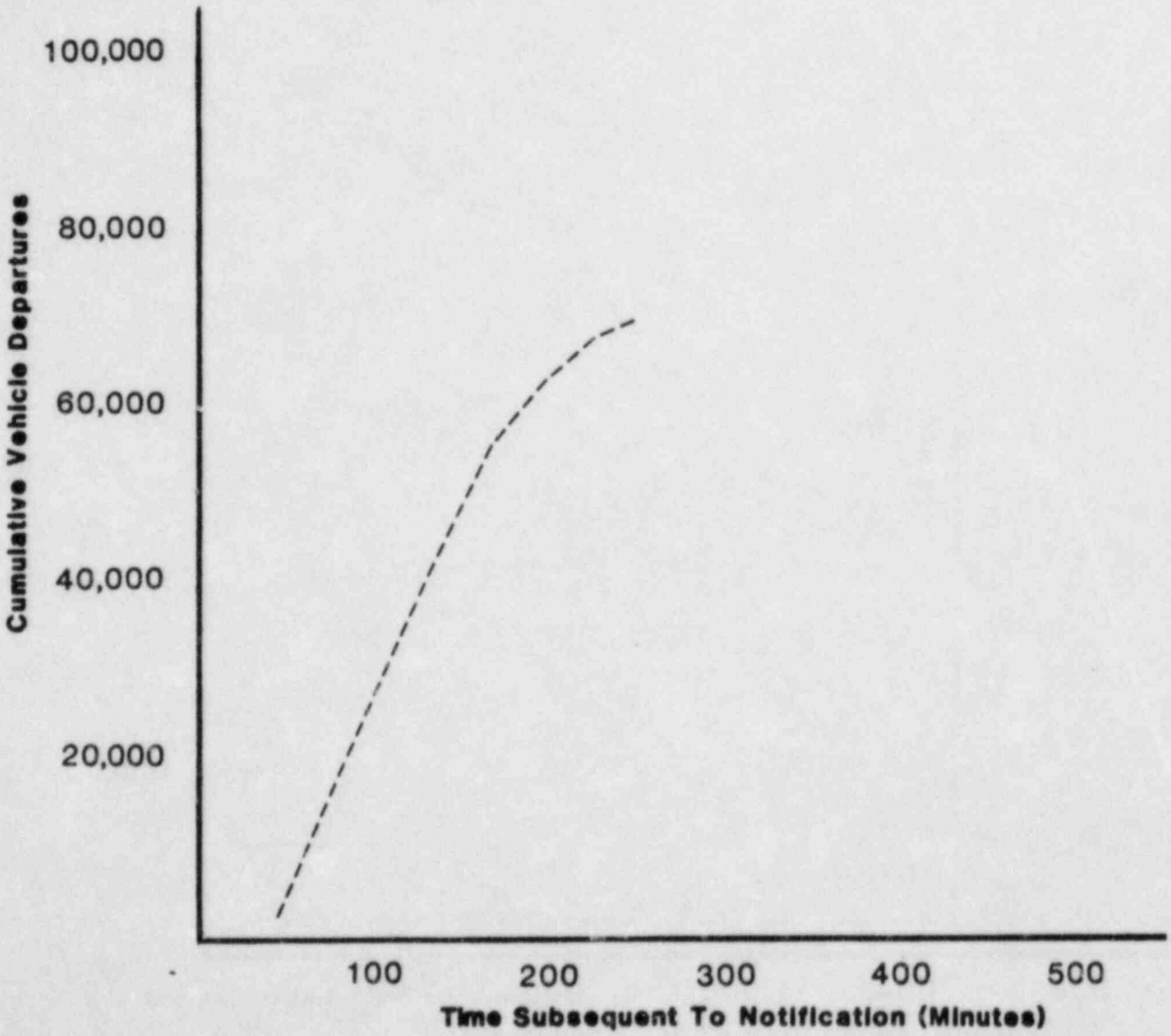


FIGURE 6.2 CUMULATIVE VEHICLE DEPARTURES FROM THE LIMERICK GENERATING STATION EPZ, WINTER WEEKNIGHT FAIR WEATHER CONDITION

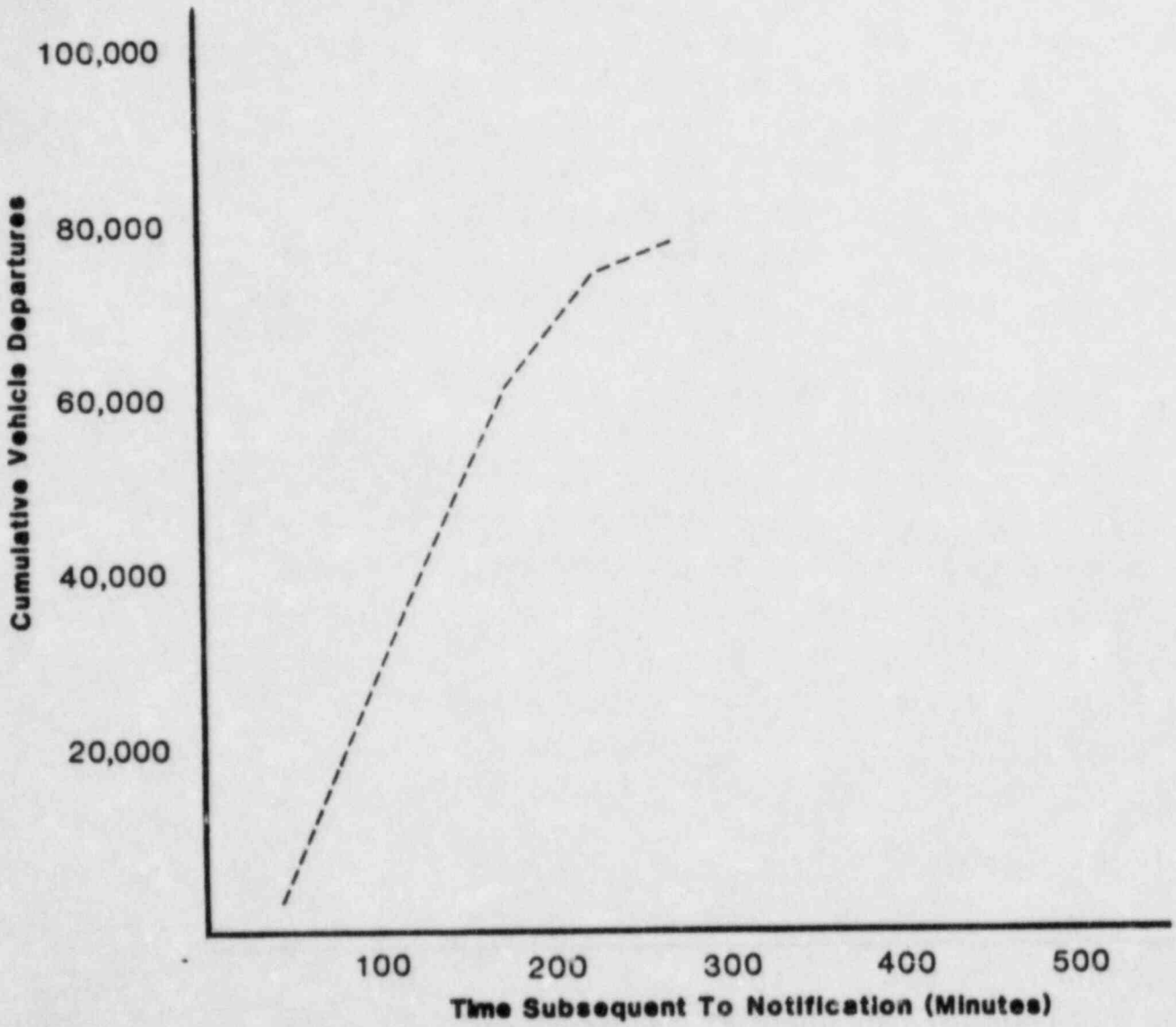


FIGURE 6.3 CUMULATIVE VEHICLE DEPARTURES FROM THE LIMERICK GENERATING STATION EPZ, SUMMER WEEKEND FAIR WEATHER CONDITION

The estimated adverse weather evacuation times are also the same as those for Montgomery County. The winter weekday, adverse weather evacuation time is 6 hours, 45 minutes. The time increase (compared to the fair weather estimate) is due primarily to a decrease in roadway capacity due to speed reductions on icy roads, as well as lowered visibility and narrower travel lanes due to snow. Vehicle congestion and queueing patterns for the winter weekday, adverse weather scenario are similar to those indicated for the corresponding fair weather case.

The summer weekend, adverse weather evacuation time estimate is 5 hours, 50 minutes. The location of vehicle congestion and queueing problems for this condition are the same as those described for the summer weekend, fair weather scenario.

Figures 6.4 and 6.5 present the total vehicle departures from the EPZ, as a function of time, for the winter weekday and summer weekend, adverse weather conditions. The general vehicle departure characteristics for both adverse weather conditions are similar to corresponding fair weather departures. However, the rate of departure for each adverse weather case is slower than the rate for the corresponding fair weather scenario. The decreased roadway capacity during adverse weather results in slower departure rates, reduced vehicle speeds and longer evacuation times.

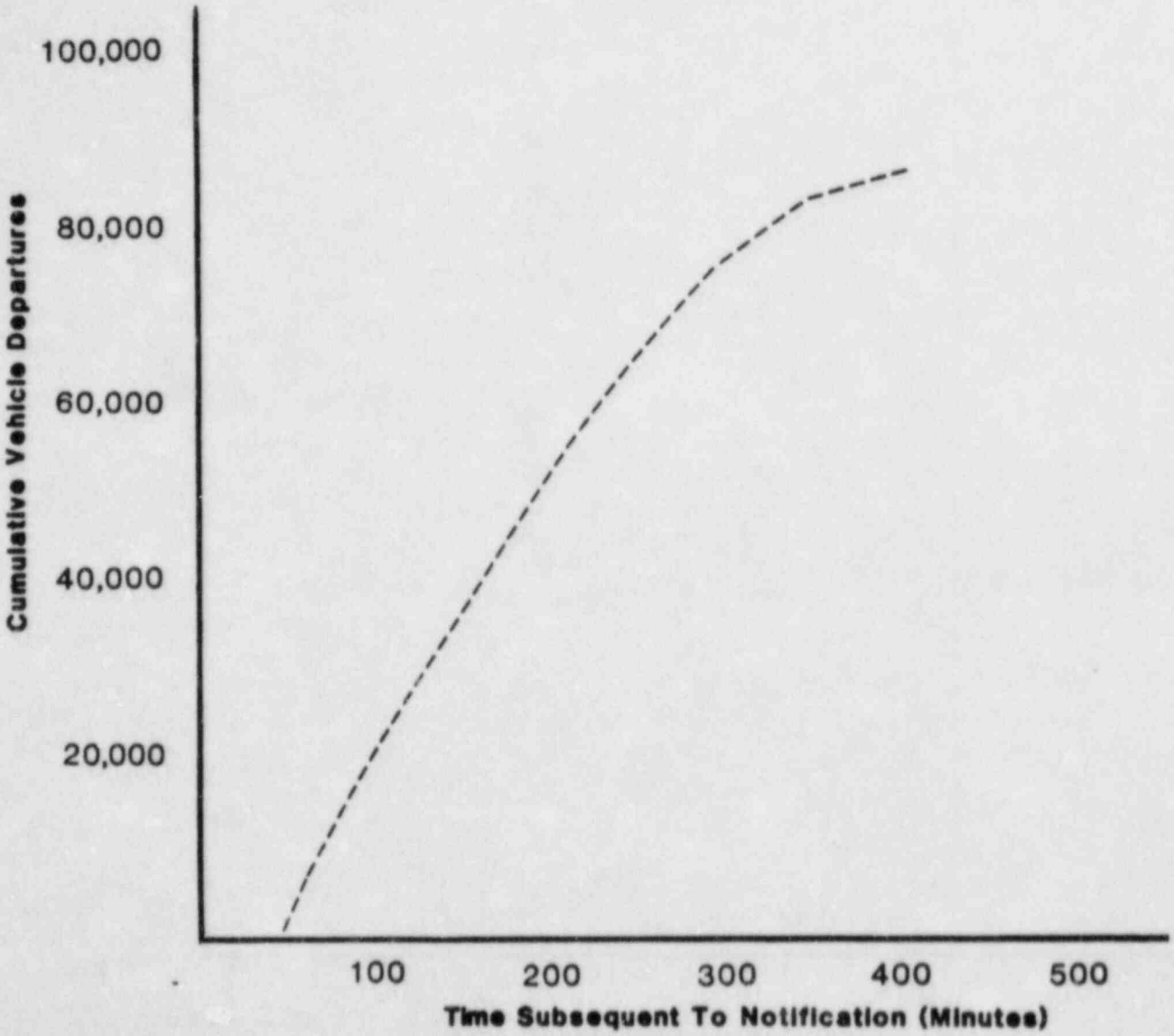


FIGURE 6.4 CUMULATIVE VEHICLE DEPARTURES FROM THE LIMERICK GENERATING STATION EPZ, WINTER WEEKDAY ADVERSE WEATHER CONDITION

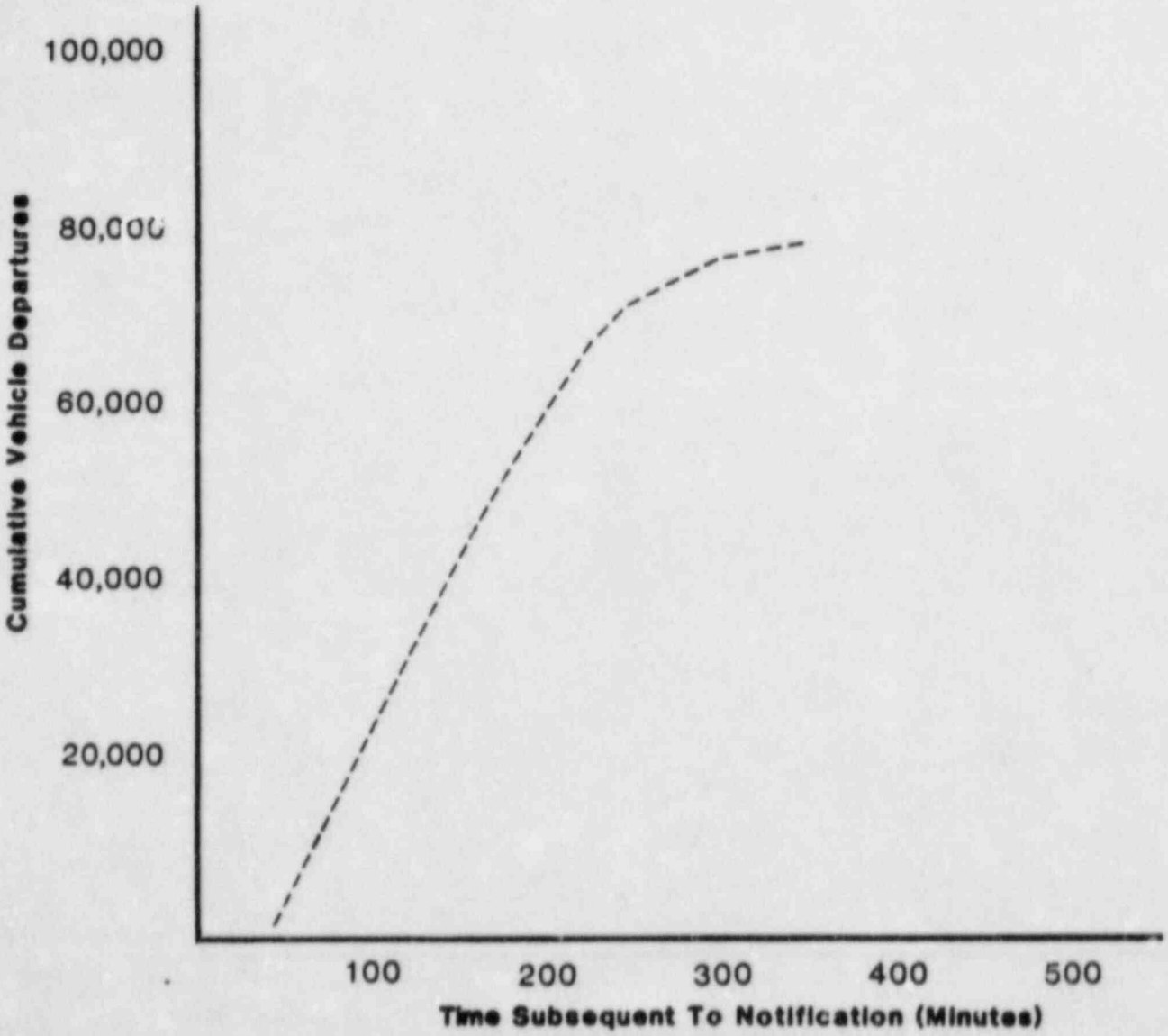


FIGURE 6.5 CUMULATIVE VEHICLE DEPARTURES FROM THE LIMERICK GENERATING STATION EPZ, SUMMER WEEKEND ADVERSE WEATHER CONDITION

7. SUPPLEMENTAL ANALYSES

7.1 General

Supplemental analyses related to emergency evacuation of the Limerick EPZ have been conducted. These include: (1) evacuation confirmation procedures; (2) identification of Access Control locations and Traffic Control Points: (3) an evaluation of potential mitigating measures to more effectively manage the traffic flow anticipated from an emergency evacuation of the EPZ; (4) an evaluation of evacuation of the EPZ using year 1990 permanent resident population estimates; and (5) an evaluation of evacuation times assuming completion of the Schuylkill Expressway Extension.

7.2 Evacuation Confirmation

Time estimates associated with evacuation confirmation have not been included for each sector, but should not exceed approximately four hours for the EPZ.

7.3 Evacuation Access Control Locations

Table 7.1 lists the currently designated Access Control locations for the Limerick Plume Exposure EPZ. These locations have been developed by Pennsylvania State Police and local emergency preparedness officials and are preliminary at this time. These locations are identified on the township reference maps presented in Appendix 3. These access control points will be staffed by Pennsylvania State Police and county and local law enforcement personnel for the purpose of restricting unauthorized access into the potential hazard area.

TABLE 7.1

ACCESS CONTROL LOCATIONS

BERKS COUNTY (10-MILE ACCESS CONTROL)*

Location No.	Location	Instructions	PSP Staff Assigned
	Amity Township		
0151	PA Rt. 422 & Limekiln Rd.	No Traffic East on Rt. 422	2
0152	Hill Rd. & Geiger Rd.	No Traffic East on Geiger Rd.	1
0153	Old Airport Rd. & Weavertown Rd.	No Traffic South on Old Airport Rd.	1
J154	PA Rt. 562 & Old Airport Rd.	No Traffic East on Rt. 562	2
	Bechtelsville Borough		
0251	North Reading Ave. & Mill St.	No Traffic West on Mill St.	--
	Earl Township		
0751	Powder Mill Rd. & Fancy Hill Rd.	No Traffic South on Fancy Hill Rd.	1
0752	Powder Mill Rd. & Sandy Hill Rd.	No Traffic South on Sandy Hill Rd.	1
0753	Pine Rd. & Mt. Rd.	No Traffic South on Pine Rd. & East on Mt. Rd.	--
0754	Pine Rd. & Hauseman Rd.	No Traffic East on Hauseman Rd.	--
0755	Old State Rd. & Ironstone Dr.	No Traffic South on Old State Rd.	--
0756	Mountain Rd. & Willow Rd.	No Traffic North on Willow Rd.	--
0757	Pine Lane & Pond Rd.+	No Traffic East on Pond Rd.	--
	Pike Township		
1051	Orchard Rd. Valley Rd.+	No Traffic East on Orchard Rd. & South on Valley Rd.	1
	Union Township		
1151	PA Rt. 724 & Shed Rd.	No Traffic East on Rt. 724	2
1152	Shed Rd. & Red Corner Rd.	No Traffic East on Red Corner Rd.	1
1153	Shed Rd. & Park Rd.	No Traffic East on Park Rd.	1
	Washington Township		
1251	Hill Church Rd. & Locust Rd.	No Traffic South on Locust Rd.	1
1252	Hill Church Rd. & Wissinger Rd.	No Traffic West on Wissinger Rd.	--
1253	Hill Church Rd. & Moyer Rd.+	No Traffic West on Moyer Rd.	--
1254	PA Rt. 100 & Miller Rd.	No Traffic West & East on Miller Rd.	1
1255	PA Rt. 100 & Oberholtzer Rd.	No Traffic East on Passmore Rd.	1
1256	Oberholtzer Rd. & Congo Rd.	No Traffic South on Oberholtzer Rd.	1
1257	County Line Rd. & Congo Rd.	No Traffic South on County Line Rd. or East on Congo Rd.	1
1258	County Line Rd. & Pine St.+	No Traffic East on Pine St.	--
1259	Pine St. & Himmelwright Rd.+	No Traffic Southeast on Himmelwright Rd.	--
1260	Pine St. & German Rd.+	No Traffic East on Pine St.	--

Note: No men assigned indicates barricades will be used.
*Source: Berks County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.1 (Continued)
ACCESS CONTROL LOCATIONS
CHESTER COUNTY (10-MILE ACCESS CONTROL)*

Location No.	Location	Instructions	Number of Personnel	Responsible Organization
	CHARLESTOWN TOWNSHIP			
1351	Rees Rd. & Howell Rd.	No traffic on either road	1	Pennsylvania State Police (PSP)
1352	Rt. 29 & Whitehorse Rd.	No traffic North on White Horse Rd.	1	PSP
1353	Rt. 29 & Charlestown Rd.	No traffic North on Rt. 29 or Charlestown Rd.	1	PSP
1354	Sidley Hill Rd.& Yellow Springs Rd.	No traffic North on Sidley Hill or Yellow Springs	1	PSP
1355	Bodine Rd. & Valley Hill Rd.	No traffic North on either road	1	PSP
	EAST NANTMEAL TWP.			
1751	Hedge Rd. & Creamy Rd.	No traffic on Hedge Rd.	1	PSP
1752	Marsh Rd. & Adams Dr.	No traffic on Marsh Rd.	1	PSP
1753	Rt. 401 & Rt. 345	No traffic East on Rt. 401	To Be Determined (TBD)	TBD
	TREDYFFRIN/ SCHUYLKILL TWPS.			
2751	Diamond Rock Hill Rd. & Ashenfelter Rd.+	No traffic North on Diamond Rock or East on Ashenfelter	1	Tredyffrin Twp. P.D.
2752	Welsh Valley Rd. & Mountain Drive+	No traffic on Mountain Drive	1	Tredyffrin Twp. P.D.
	UPPER UWCHLAN TOWNSHIP			
2851	Rt. 100 & Township Line Rd.	No traffic North on Rt. 100 or East on Township Line Rd.	1	PSP
2852	Park Rd. & Moore Rd.	No traffic East on Park Rd.	1	PSP
2853	Little Conestoga Rd. & Milford Rd.	No traffic North on Milford or East on Little Conestoga Rd.	1	PSP
	UWCHLAN TOWNSHIP			
2951	Rt. 113 & Lionville Station Rd.	No traffic North on Rt. 113 or or West on Lionville Station	1	PSP

*Source: Chester County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.1 (Continued)
ACCESS CONTROL LOCATIONS
CHESTER COUNTY (10-MILE ACCESS CONTROL)*

Location No.	Location	Instructions	Number of Personnel	Responsible Organization
	WALLACE TOWNSHIP			
3051	Little Conestoga Rd. & Styer Dr.+	No traffic North on Styer Rd.	1	PSP
3052	Little Conestoga Rd. & Fairview Rd.+	No traffic West on Fairview Rd.	1	PSP
	WARWICK TOWNSHIP			
3151	Rt. 345 & Redding Furnance Rd.	No traffic East on Redding Furnance Rd.	1	PSP
3152	Rt. 23 & Rt. 345	No traffic East on Rt. 23	1	PSP
5153	Rt. 345 & Warwick Rd.	No traffic East on Warwick Rd.	1	PSP
3154	Rt. 345 & Northside Rd.	No traffic East on Northside Rd.	1	PSP
3155	Rt. 345 & Harmonyville Rd.	No traffic East on Harmonyville Rd.	1	PSP
3156	Rt. 345 & Laurel Rd.	No traffic South on Laurel Rd.	1	PSP
	WEST PIKELAND TOWNSHIP			
3351	Rt. 401 & Seven Oaks Rd.	No traffic West on Rt. 401 or North on Seven Oaks Rd.	1	PSP
3352	Davis Rd. & Upper Pine Creek Rd.	No traffic North on Pine Creek or West on Davis Rd.	1	PSP

*Source: Chester County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.1 (Continued)
ACCESS CONTROL LOCATIONS
MONTGOMERY COUNTY (10-MILE ACCESS CONTROL)*

Location No.	Location	Instructions	PSP Staff Assigned
	LOWER SALFORD TOWNSHIP		
4751	PA 63 & Morwood Rd.	No Traffic West on PA 63	1
	Freeman School Rd. & Salfordville Rd.	No Traffic West on Salfordville Rd.	TBD
4752	Salfordville Rd. & Groff's Rd.	No Traffic East or West on Salfordville Rd.	TBD
4753	PA 113 & Salfordville Rd.	No Traffic East, West, or South of intersection	1
4754	PA 113 & Schlosser Rd.	No Traffic North or South on PA 113	1
4755	PA 113 and Lucon Rd.	No Traffic North or South of intersection	TBD
4756	PA 113 & Cressman Rd.	No Traffic South on PA 113 or Cressman Rd.	TBD
4757	Kinsey Rd. & Church Rd.	No Traffic South on Church Rd.	TBD
4758	Kooer Rd. & Store Rd.	No Traffic South on Store Rd.	TBD
4759	Old Skippack Rd. & Freeman School Rd.	TBD	TBD
4760	Old Skippack Rd. & Groff's Mill Rd.	TBD	TBD
4761	Old Skippack Rd. & Landis Rd.	TBD	TBD
4762	Rt. 113 & Cross Rd.	TBD	TBD
4763	Rt. 113 & Sharon Lane	TBD	TBD
4764	Rt. 113 & Hoffman Rd.	TBD	TBD
	MARLBOROUGH TOWNSHIP		
4851	PA 29 & Hill Rd.	No Traffic West on Hill Rd.	TBD
4852	PA 29 & PA 63	No Traffic South on PA 29	1
4853	PA 63 & Upper Ridge Rd.	No Traffic South on Upper Ridge Rd.	TBD
4854	PA 63 & Perkiomenville Rd.	No Traffic South on Perkiomenville Rd.	1
4855	PA 63 & Geryville Pike	No Traffic West on PA 63	1
4856	Rt. 63 & Church Rd.	TBD	TBD
4857	Reiman Rd. & Happenville Rd.	TBD	TBD
4858	Route 29 & Wasnington Lane	TBD	TBD
	SALFORD TOWNSHIP		
5651	Hill Rd. & Hauseman Rd.+	No Traffic South on Hill Rd.	TBD
5652	Camp Green Lane Rd. & Hauseman Rd.+	No Traffic South on Camp Green Lane Rd.	TBD
5653	PA 563 & Moyer Rd.+	No Traffic South, East, or West of intersection	1
5654	Hunsberger Rd. & Moyer Rd.+	No Traffic East or West on Moyer Rd.	TBD
5655	Moyer Rd. & Mill Rd.+	No Traffic South on Mill Rd.	TBD

*Source: Montgomery County RERP.
+ Not included in townsnip reference maps in Appendix 3.

TABLE 7.1 (Continued)
ACCESS CONTROL LOCATIONS
MONTGOMERY COUNTY (10-MILE ACCESS CONTROL)*

Location No.	Location	Instructions	PSP Staff Assigned
	UPPER HANOVER TOWNSHIP		
6551	Schoolhouse Rd. & Township Woods Rd.+	No Traffic South on Schoolhouse Rd.	TBD
6552	Schwoyer Rd. & Congo Rd.+	No Traffic South on Congo Rd.	TBD
6553	Papermill Rd. & Bowers Mill Rd.+	No Traffic West on Papermill Rd.	TBD
6554	Bowers Mill Rd. & Wild Run Rd.+	No Traffic West on Wild Run Rd.	TBD
6555	PA 663 & Kings Rd.+	No Traffic South on PA 663	1
6556	Kings Rd. & Ward Rd.+	No Traffic South on Ward Rd.	TBD
	WORCESTER TOWNSHIP		
7451	PA 73 & Bustart Rd.+	No Traffic West on PA 73	TBD
7452	Green Hill Rd. & Kriebel Mill Rd.+	No Traffic South on Green Hill Rd.	TBD
7453	Stump Hall Rd. & Kriebel Mill Rd.+	No Traffic West on Stump Hall Rd.	TBD
7454	Water Street Rd. & Kriebel Mill Rd.+	No Traffic West on Water St. Rd.	TBD
7455	Kriebel Mill Rd. & Mill Rd.+	No Traffic West on Mill Rd.	TBD
7456	US 422 & Kriebel Mill Rd.+	No Traffic West on US 422	1
7457	US 422 and Mt. Kirk Ave.+	No Traffic South on Mt. Kirk Ave.	1
7458	US 422 and Church/Quarry Hall Rd.+	No Traffic South on Church/ Quarry Hall Rd.	1
7459	US 422 & PA 363+	No Traffic West on US 422 No Traffic South on PA 363	2
7460	US 422 & Trooper Rd.+	No Traffic South on Trooper Rd.	2

*Source: Montgomery County RERP.
+ Not included in township reference maps in Appendix 3.

7.4 Evacuation Traffic Control and Traffic Management

Evacuation traffic control points have also been designated by the Pennsylvania State Police and are listed in Table 7.2. These control points are also identified on the township maps presented in Appendix 3. Additional traffic control points for risk municipalities are currently being reviewed as part of the municipal RERP development process.

The stationing of traffic controllers at these Traffic Control Points, especially at signalized intersections could significantly reduce the time required to evacuate the EPZ. A traffic controller could help direct traffic through an intersection based primarily on vehicle demand. It is expected that vehicles would move more efficiently with the presence of a controller and that the evacuation would be expedited. Controllers at key locations would reduce the number of vehicle conflicts and promote safer travel out of the EPZ. The traffic controllers would also act to instill confidence in the evacuees by directing evacuating traffic in the most efficient manner possible and by being available to respond to unpredictable or changing events.

7.5 Evacuation Time Estimate for the Year 1990

An estimated evacuation time has also been developed, using the transient and special facility population previously identified, with projected 1990 permanent resident population data. This analysis was conducted to test the sensitivity of potential future population increases within the EPZ on evacuation times. Similar to the evacuation time estimates developed for the existing population data, the 1990 estimate also represents the notification/preparation/mobilization time for the various population sub-groups as well as the time required for the entire population to complete actual vehicle movement out of the EPZ. The winter weekday scenario has been selected as the analysis case since it incorporates a condition

TABLE 7.2

TRAFFIC CONTROL POINT LOCATIONS*

BERKS COUNTY

Location No.	Location	Municipality	Staffing
0101	PA Rt. 422 & Airport Road+	Amity Twp.	TBD
0102	PA Rt. 422 & Park Lane	Amity Twp.	TBD
0103	PA Rt. 662 & Old Airport Road	Amity Twp.	TBD
0104	PA Rt. 662 & PA Rt. 562	Amity Twp.	2/PSP
0105	PA Rt. 662 & Weavertown Road	Amity Twp.	TBD
0106	PA Rt. 662 & Nicholson Avenue	Amity Twp.	TBD
0107	PA Rt. 662 & Richardson Avenue	Amity Twp.	TBD
0108	PA Rt. 422 & Limekiln Road	Amity Twp.	PSP/2
0109	PA Rt. 562 & Airport Road+	Amity Twp.	PSP/2
0110	PA Rt. 422 & PA Rt. 662	Amity Twp.	PSP/2
0111	PA Rt. 562 & Powder Mill Hollow Rd.	Amity Twp.	TBD
0401	PA Rt. 23 & PA Rt. 401+	Caernarvon Twp.	2/PSP
0402	PA Rt. 23 & T274 Entrance to Morgan Trailer Company+	Caernarvon Twp.	4/PSP
0501	PA Rt. 73 & Funk Road	Colebrookdale Twp.	TBD
0502	Swamp Creek Rd. & Ramp to Rt. 100	Colebrookdale Twp.	TBD
0301	South Reading Ave. & 2nd Street	Boyertown Borough	TBD
0503	PA Rt. 562 and Henry Avenue+	Colebrookdale Twp.	TBD
0302	South Reading Ave. & 3rd Street	Boyertown Borough	TBD
0303	South Reading Ave. & Rt. 73	Boyertown Borough	TBD
0304	PA Rt. 73 & 2nd Street	Boyertown Borough	TBD
0305	PA Rt. 73 & Washington Street	Boyertown Borough	TBD
0306	Washington Street & 3rd Street	Boyertown Borough	TBD
0601	PA Rt. 562 & Douglass Drive	Douglass Twp.	TBD
0602	PA Rt. 562 & Greshville Road	Douglass Twp.	TBD
0603	PA Rt. 422 & Douglass Drive	Douglass Twp.	TBD
0604	Hill School Road & Douglass Drive	Douglass Twp.	TBD
0605	Glendale Road & Douglass Drive	Douglass Twp.	TBD
0801	PA Rt. 100 & PA Rt. 29+	Hereford Twp.	2/PSP
0901	PA Rt. 738 & T671 Main Street - Village of Oley - Entrance to Oley High School)+	Oley Twp.	4/PSP
1101	PA Rt. 724 & Shed Road	Union Twp.	2/PSP
1102	PA Rt. 724 & River Bridge Road+	Union Twp.	2/PSP
1103	Shed Road & Red Corner Road	Union Twp.	TBD
1201	PA Rt. 100 & Congo Road	Washington Twp.	2/PSP
1202	Passmore Road & Congo Road+	Washington Twp.	TBD
1203	County Line Road & Congo Road	Washington Twp.	TBD

*Source: Berks County RERP.

+ Not included in townsnip reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS*
CHESTER COUNTY

Location No.	Location	Municipality	Number of Personnel	Responsible Organization
1301	Rt. 29 & Charlestown Rd.	Charlestown Twp.	2	PSP
1302	Rt. 29 & South White Horse Rd.	Charlestown Twp.	2	PSP
1303	Rt. 401/Valley Hill Rd.	Charlestown	TBD	TBD
1401	Rt. 322 & Downingtown High School Entrance+	Downington Borough	TBD	Downington P.D.
1501	Rt. 113 & Rt. 30 By-Pass+	East Caln	2	PSP
1601	Bethel Rd. & Rt. 23	East Coventry Twp.	TBD	E. Coventry P.D.
1701	Rt. 401 & Rt. 345	East Nantmeal Twp.	2	PSP
1801	Rt. 724 & Rt. 23	East Pikeland Twp.	TBD	TBD
1802	Pikeland Ave./Rt. 724	East Pikeland Twp.	TBD	E. Pikeland P.D.
1803	Township Line Rd./Rt. 113	East Pikeland Twp.	TBD	E. Pikeland P.D.
1804	Rt. 113/Rapps Dam Rd.	East Pikeland Twp.	TBD	E. Pikeland P.D.
1805	Rt. 113/Hares Hill Rd.	East Pikeland Twp.	TBD	E. Pikeland P.D.
1806	Rt. 113/Cold Stream Rd.	East Pikeland Twp.	TBD	E. Pikeland P.D.
1901	New St. & Rt. 724	East Vincent Twp.	2	PSP
1902	Rt. 724 & Bridge St.	East Vincent Twp.	TBD	E. Vincent P.D.
1903	Pennhurst Rd. & Bridge St.	East Vincent Twp.	TBD	E. Vincent P.D.
1904	Rt. 724 & Stoney Run Rd.	East Vincent Twp.	TBD	E. Vincent P.D.
1905	Rt. 724 & Hill Church Rd.	East Vincent Twp.	TBD	E. Vincent P.D.
2001	Rt. 202 & Rt. 29+	East Whiteland Twp.	2	PSP
2002	Sidley Rd./Phoenixville Pike+	East Whiteland Twp.	TBD	E. Whiteland P.D.
2101	Rt. 401 & Rt. 82+	Elverson Borough	2	PSP
2102	Rt. 82 & Rt. 23+	Elverson Borough	2	PSP
2201	Rt. 724 & Keim St.	North Coventry Twp.	TBD	N. Coventry P.D.
2202	Rt. 724 & Hanover St.	North Coventry Twp.	TBD	N. Coventry P.D.
2203	Rt. 100 & Rt. 724	North Coventry Twp.	Unmanned	N. Coventry P.D.
2204	Rt. 100 & Rt. 422	North Coventry Twp.	Unmanned	N. Coventry P.D.
2205	Rt. 100 & South Hanover St.	North Coventry Twp.	TBD	N. Coventry P.D.
2206	Rt. 100 & Harner St.+	North Coventry Twp.	TBD	N. Coventry P.D.
2207	Rt. 100 & Cedarville Rd.	North Coventry Twp.	TBD	N. Coventry P.D.
2208	South Hanover St. & Cedarville Rd.	North Coventry Twp.	TBD	N. Coventry P.D.
2209	Laurelwood Dr. & Rt. 724	North Coventry Twp.	TBD	N. Coventry P.D.
2401	Rt. 23 & White Horse Rd.	Schuylkill Twp.	TBD	Schuylkill P.D.
2402	Pot House Rd. & Charlestown Rd.	Schuylkill Twp.	TBD	Schuylkill P.D.
2403	Pot House Rd. & White Horse Rd.	Schuylkill Twp.	TBD	Schuylkill P.D.
2404	Pot House Rd. & Rt. 29	Schuylkill Twp.	TBD	Schuylkill P.D.
2405	White Horse Rd. & Valley Park Rd.	Schuylkill Twp.	TBD	Schuylkill P.D.
2406	White Horse Rd. & Schuylkill Elementary Entrance	Schuylkill Twp.	TBD	Schuylkill P.D.

*Source: Chester County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS*
CHESTER COUNTY

Location No.	Location	Municipality	Number of Personnel	Responsible Organization
2407	Charlestown Rd. & Vo-Tech Entrance	Schuylkill Twp.	TBD	Schuylkill P.D.
2501	Rt. 23 & Coventryville Rd.	South Coventry Twp.	2	PSP
2502	Rt. 23 & Rt. 100	South Coventry Twp.	2	PSP
2503	Rt. 23 & Daisy Point Rd.	South Coventry Twp.	2 or TBD	PSP or TBD
2504	Rt. 23 & Pughtown Rd.+	South Coventry Twp.	2 or TBD	PSP or TBD
2505	Rt. 100 & Daisy Point Rd.	South Coventry Twp.	TBD	TBD
2506	Rt. 100 & Cadmus St.	South Coventry Twp.	TBD	TBD
2601	Bridge St. & Main St.	Spring City Borough	TBD	Spring City P.D.
2602	Wall St. & New St.	Spring City Borough	TBD	Spring City P.D.
2603	Hall St. & Main St.	Spring City Borough	TBD	Spring City P.D.
2604	Pikeland St. & Wall St.	Spring City Borough	TBD	Spring City P.D.
2801	Rt. 100 & Fellowship Rd.	Upper Uwchlan Twp.	2	PSP
2802	Rt. 100 & Little Conestoga Rd.	Upper Uwchlan Twp.	2	PSP
2803	Byers Rd. & Rt. 100	Upper Uwchlan Twp.	TBD	Uwchlan/Upper Uwchlan Twp. P.D.
2804	Township Line Rd. & Rt. 100	Upper Uwchlan Twp.	TBD	Uwchlan/Upper Uwchlan Twp. P.D.
2805	Font Rd. & Rt. 100	Upper Uwchlan Twp.	TBD	Uwchlan/Upper Uwchlan Twp. P.D.
2901	Rt. 100 & Rt. 113	Uwchlan Twp.	2	PSP
2902	Gordon Dr. & Rt. 100	Uwchlan Twp.	TBD	Uwchlan & Upper Uwchlan Twp. P.D.
2903	Gordon Dr. & Rt. 113	Uwchlan Twp.	TBD	Uwchlan/Upper Uwchlan Twp. P.D.
3101	Rt. 345 & Rt. 23	Warwick Twp.	2	PSP
3102	Rt. 23 & St. Peters Rd.	Warwick Twp.	2	PSP
3103	Rt. 23 & Trythall Rd.	Warwick Twp.	TBD	PSP
3104	Rt. 23 & County Park Rd.	Warwick Twp.	TBD	PSP
3201	Rt. 202 & Rt. 3 (West Goshen Shopping Center)+	West Goshen Twp.	TBD	W. Goshen P.D.
3301	Rt. 401 & Rt. 113	West Pikeland Twp.	2	PSP
3302	Rt. 113 & Yellow Springs Rd.	West Pikeland Twp.	TBD	W. Pikeland P.D.
3401	Rt. 100 & Horseshoe Trail	West Vincent Twp.	2	PSP
3402	Rt. 100 & Rt. 401	West Vincent Twp.	2	PSP
3403	Rt. 401 & St. Matthews Rd.	West Vincent Twp.	2	PSP
3404	Birchrun Rd. & Rt. 100+	West Vincent Twp.	TBD	W. Vincent P.D.
3501	Rt. 100 & Rt. 30+	West Whiteland Twp.	TBD	W. Whiteland P.D.
3502	Swedesford Rd. & Rt. 100+	West Whiteland Twp.	TBD	W. Whiteland P.D.
3503	Rt. 30 & Exton Mall Exit+	West Whiteland Twp.	TBD	W. Whiteland P.D.
7501	Rt. 322 & Rt. 30 By-Pass+	Caln Twp.	TBD	Caln P.D.

*Source: Chester County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS
MONTGOMERY COUNTY (INSIDE THE EPZ)*

Location No.	Location	Municipality	Manned by
3601	Main St. & 5th Ave.	Collegeville Borough	TBD
3602	Main St. & 1st Ave.	Collegeville Borough	PSP
3603	Main St. & 2nd Ave.	Collegeville Borough	PSP
3604	Main St. & 8th Ave.	Collegeville Borough	TBD
3605	Main St. & 9th Ave.	Collegeville Borough	TBD
3606	Park & Clahor & 2nd Ave.	Collegeville Borough	TBD
3701	Rt. 73 & Rt. 100	Douglass Twp.	TBD
3702	Rt. 73 & Swamp Pike	Douglass Twp.	TBD
3703	Rt. 73 & Congo Rd.	Douglass Twp.	TBD
3704	Gilbertsville Rd. & Swamp Pike	Douglass Twp.	TBD
3705	County Line Rd. & Rt. 100	Douglass Twp.	TBD
4001	Rt. 29 & Rt. 63	Green Lane Borough	TBD
4002	Rt. 63 & 3rd St.	Green Lane Borough	TBD
4201	Rt. 422 & Swamp Pike	Limerick Twp.	PSP
4301	Rt. 29 & Spring Mount Rd.	Lower Frederick Twp.	TBD
4302	Rt. 29 & Zieglersville Rd.	Lower Frederick Twp.	TBD
4303	Rt. 29 & Salford Station Rd.	Lower Frederick Twp.	TBD
4304	Rt. 29 & Delphi Rd.	Lower Frederick Twp.	TBD
4305	Old Rt. 29 & Gravel Pike+	Lower Frederick Twp.	TBD
4501	Rt. 663 & Mervine St.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4502	High St. & Green Lane Rd.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4503	Green Lane Rd. & Sanatoga	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4504	Rt. 663 & Keim St.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4505	Keim Rd. & Buchert Rd.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4506	Pottsgrove School Rd. & Rt. 663+	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4507	Rt. 663 & Bleim St.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4508	High St. & Pleasantview Rd.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4509	High St., & Sanatoga Rd.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4510	High St. & Rupert Rd.	Lower Pottsgrove Twp.	Lower Pottsgrove P.D.
4601	Rt. 422 & Ridge Pike	Lower Providence Twp.	TBD
4602	Rt. 422 & Cross Keys	Lower Providence Twp.	TBD
4603	Rt. 422 & Evansburg Rd.	Lower Providence Twp.	TBD
4604	Ridge Pike & Evansburg Rd.	Lower Providence Twp.	TBD
4605	Ridge Pike & Eagleville Rd.	Lower Providence Twp.	TBD
4606	Ridge Pike & Park Ave.	Lower Providence Twp.	TBD
4607	Ridge Pike & Trooper Rd.	Lower Providence Twp.	TBD
4608	Egypt Rd. & Trooper Rd.	Lower Providence Twp.	TBD
4609	Audubon & Trooper Rd.	Lower Providence Twp.	TBD
4610	Egypt Rd. & Pawlings Rd.	Lower Providence Twp.	TBD
4611	Egypt Rd. & Pinetown Rd.+	Lower Providence Twp.	TBD
4701	Rt. 113 & Morris Rd.	Lower Salford Twp.	TBD
4702	Rt. 113 & Hoffman Rd.	Lower Salford Twp.	TBD
4703	Rt. 113 & Rt. 63	Lower Salford Twp.	TBD
4801	Upper Ridge Rd. & Sumneytown Pike	Marlborough Twp.	TBD

*Source: Montgomery County RERP.
+ Not included in townsnip reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS
MONTGOMERY COUNTY (INSIDE THE EPZ)*

Location No.	Location	Municipality	Manned by
4802	Perkiomenville Rd. & Sumneytown Ave.	Marlborough Twp.	PSP
5001	Rt. 663 & Swamp Pike	New Hanover Tw.p	New Hanover Police
5002	Rt. 663 & Rt. 73S	New Hanover Twp.	PSP
5003	Rt. 663 & Rt. 73N	New Hanover Twp.	PSP
5004	Rt. 663 & Hoffmansville Rd.	New Hanover Twp.	PSP
5005	Rt. 663 & Hill Rd.	New Hanover Twp.	PSP
5201	Rt. 29 & Rt. 113	Perkiomen Twp.	PSP
5202	Rt. 29 & Rt. 73	Perkiomen Twp.	PSP
5203	Rt. 29 & Graterford Rd.	Perkiomen Twp.	TBD
5301	Yost & Moser Streets	Pottstown Borough	TBD
5302	Keim & Industrial Highway+	Pottstown Borough	TBD
5303	High & Armand Hammer Bvd.+	Pottstown Borough	TBD
5304	Industrial Highway & Hanover+	Pottstown Borough	TBD
5305	High & Hanover	Pottstown Borough	TBD
5306	King & Hanover	Pottstown Borough	TBD
5307	King & Rt. 100	Pottstown Borough	TBD
5308	Berks & High St.	Pottstown Borough	TBD
5309	Reynolds & State	Pottstown Borough	TBD
5310	Wilson & Farmington	Pottstown Borough	TBD
5311	Beech & Hanover	Pottstown Borough	TBD
5312	Beech & Charlotte	Pottstown Borough	TBD
5313	Beech & High	Pottstown Borough	TBD
5314	Jackson & Adams	Pottstown Borough	TBD
5315	Keim & Jackson	Pottstown Borough	TBD
5501	Main St. & Lewis Rd.	Royersford Borough	TBD
5502	Walnut St. & Lewis Rd.	Royersford Borough	TBD
5503	Main St. & Second Ave.	Royersford Borough	TBD
5504	Main St. & 4th Ave.	Royersford Borough	TBD
5505	Main St. & 5th Ave.	Royersford Borough	TBD
5701	Main St. & Park Ave.	Schwenksville Borough	TBD
5702	Main St. & Perkiomen Ave.	Schwenksville Borough	TBD
5703	Third St. & Perkiomen Ave.	Schwenksville Borough	TBD
5801	Rt. 73 & Rt. 113	Skippack Twp.	PSP
5802	Rt. 73 & Church Rd.	Skippack Twp.	TBD
5803	Rt. 73 & Collegeville Rd.	Skippack Twp.	TBD
5804	Rt. 73 & Evansburg Rd.	Skippack Twp.	TBD
5805	Rt. 73 & Cross Rd.	Skippack Twp.	TBD
5806	Rt. 73 & Lucon Rd.	Skippack Twp.	TBD
5807	Rt. 73 & Cressman Rd.	Skippack Twp.	TBD
5808	Rt. 113 & Landis Rd.	Skippack Twp.	TBD
5809	Rt. 113 & Mill Rd.	Skippack Twp.	TBD
6101	Rt. 422 & 5th Ave.	Trappe Borough	TBD
6102	Rt. 422 & 7th Ave.	Trappe Borough	TBD
6103	Rt. 422 & Rt. 113	Trappe Borough	PSP

*Source: Montgomery County RERP.
+ Not included in townsnip reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS
MONTGOMERY COUNTY (INSIDE THE EPZ)*

Location No.	Location	Municipality	Manned by
6301	Perkiomenville Rd. & Rt. 73	Upper Frederick Twp.	TBD
6302	Perkiomenville Rd. & Deep Creek Rd.	Upper Frederick Twp.	PSP
6303	Perkiomenville Rd. & Rt. 29 South	Upper Frederick Twp.	PSP
6304	Perkiomenville Rd. & Rt. 29 North+	Upper Frederick Twp.	PSP
6801	Rt. 100 & State Rd. South	Upper Pottsgrove Twp.	PSP
6802	Rt. 100 & State Rd. North	Upper Pottsgrove Twp.	PSP
6803	Rt. 100 & Farmington Ave.	Upper Pottsgrove Twp.	PSP
6901	Black Rock Rd. & Rt. 29	Upper Providence Twp.	TBD
6902	Black Rock Rd. & Rt. 113	Upper Providence Twp.	TBD
6903	Black Rock Rd. & Egypt Rd.	Upper Providence Twp.	TBD
6904	Route 29 & Egypt Rd.	Upper Providence Twp.	TBD
6905	Township Line & Rt. 422	Upper Providence Twp.	TBD
6906	Lewis Rd. & Vaughn Rd.	Upper Providence Twp.	TBD
6907	2nd Ave. & Vaughn Rd.	Upper Providence Twp.	TBD
6908	2nd Ave. & Rt. 113	Upper Providence Twp.	TBD
6909	Mennonite Rd. & Rt. 113	Upper Providence Twp.	TBD
6910	Mennonite Rd. & Rt. 29	Upper Providence Twp.	TBD
7001	Rt. 63 & Rt. 563	Upper Salford Twp.	PSP
7002	Rt. 63 & Shelly Rd.	Upper Salford Twp.	PSP
7101	West High & Glasgow St.	West Pottsgrove Twp.	TBD
7102	West High & Center St.	West Pottsgrove Twp.	TBD
7103	West High & Old Reading Pike	West Pottsgrove Twp.	TBD
7104	West High & Howard St.	West Pottsgrove Twp.	TBD
7105	West High & Grosstown Rd.	West Pottsgrove Twp.	TBD
7106	West High & Jay Sts.	West Pottsgrove Twp.	TBD
7107	Manatawny & Grosstown Sts.	West Pottsgrove Twp.	TBD
7108	Manatawny & Sells Sts.	West Pottsgrove Twp.	TBD
7109	Levengood & State St.	West Pottsgrove Twp.	TBD

* Source: Montgomery County RERP.
+ Not included in townsnip refer. ce maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS
MONTGOMERY COUNTY (OUTSIDE THE EPZ)*

Location No.	Location	Municipality	Manned by
3801	Rt. 633 & Main St. (Rt. 29)+	East Greenville/Pennsburg Borough	TBD
3901	Rt. 422 & Whitehall Rd.+	East Norriton Borough	TBD
3902	Rt. 422 & North Wales Rd.+	East Norriton Borough	TBD
3903	Rt. 422 & Swede Rd.+	East Norriton Borough	TBD
3904	Rt. 422 & Rt. 202+	East Norriton Twp.	TBD
3905	Rt. 422 & Rt. 202+	East Norriton Twp.	TBD
3906	Rt. 422 & PA Turnpike #25+	East Norriton Twp.	TBD
4101	Rt. 363 & Rt. 63+	Lansdale Borough	TBD
4102	Main St. & North Wales Rd.+	Lansdale Borough	TBD
4401	Rt. 202 & Sumneytown Pike	Lower Gwyned Twp.	TBD
	Rt. 113 & Allentown Rd.+	Lower Salford Twp.	TBD
4901	Rt. 202 & Rt. 63+	Montgomery Twp.	TBD
4902	Rt. 202 & Knapp Rd.+	Montgomery Twp.	TBD
4903	Rt. 202 & Montgomery Mall Entrance-a+	Montgomery Twp.	TBD
4904	Rt. 202 & Montgomery Mall Entrance-b+	Montgomery Twp.	TBD
4905	Rt. 202 & Rt. 309+	Montgomery Twp.	TBD
4906	North Wales Rd. & Knapp Rd.+	Montgomery Twp.	TBD
4907	North Wales Rd. & Montgomery Mall Entrance-a+	Montgomery Twp.	TBD
4908	North Wales Rd. & Montgomery Mall Entrance-b+	Montgomery Twp.	TBD
4909	North Wales Rd. & Rt. 309+	Montgomery Twp.	TBD
4910	Rt. 309 & Rt. 202+	Montgomery Twp.	TBD
5401	Sixth St. & Main St. (Rt. 29)+	Red Hill Borough	TBD
5901	Rt. 113 & Reliance Rd.+	Souderton Borough	TBD
5902	Rt. 113 & Broad St.+	Souderton Borough	TBD
5903	Rt. 113 & Main St.+	Souderton Borough	TBD
6001	Rt. 63 & PA Turnpike #31+	Towamencin Twp.	TBD
6002	Rt. 363 & North Penn Senior High+	Towlmencin Twp.	TBD
6201	Fort Washington Ind. Park-a+	Upper Dublin Twp.	TBD
6202	Fort Washington Ind. Park-b+	Upper Dublin Twp.	TBD
6203	Fort Washington Ind. Park-c+	Upper Dublin Twp.	TBD
6401	Rt. 363 & Sumneytown Pike+	Upper Gwyned Borough	TBD
6501	Rt. 633 & School House Rd.+	Upper Hanover Twp.	TBD
6601	King of Prussia Plaza-a+	Upper Merion Twp.	TBD
6602	King of Prussia Plaza-b+	Upper Merion Twp.	TBD
6603	Rt. 202 & Goddard Blvd.+	Upper Merion Twp.	TBD
6701	Willow Grove Ind. Park-Commerce & Maryland+	Upper Moreland Twp.	TBD
6702	Willow Grove Ind. Park-Commerce & Maryland+	Upper Moreland Twp.	TBD

*Source: Montgomery County RERP.
+ Not included in township reference maps in Appendix 3.

TABLE 7.2 (Continued)
TRAFFIC CONTROL POINT LOCATIONS
MONTGOMERY COUNTY (OUTSIDE THE EPZ)*

Location No.	Location	Municipality	Manned by
6703	Willow Grove Ind.Park-Commerce & Maryland+	Upper Moreland Twp.	TBD
6704	Willow Grove Ind. Park-a Commerce & Rt. 611+	Upper Moreland Twp.	TBD
6705	Willow Grove Ind. Park-b Commerce & Rt. 611+	Upper Moreland Twp.	TBD
7201	Rt. 422 & Schoolhouse Rd.+	Whitemarsh Twp.	TBD
7301	Rt. 73 & North Wales Rd.+	Whitpain Twp.	TBD
7302	Rt. 73 & Rt. 202+	Whitpain Twp.	TBD
7303	Rt. 73 & Rt. 202+	Whitpain Twp.	TBD
7304	Rt. 202 & Morris Rd.+	Whitpain Twp.	TBD
7401	Rt. 73 & Bethel/Whitehall Rd.+	Worcester Twp.	TBD

*Source: Montgomery County RERP.
+ Not included in township reference maps in Appendix 3.

with both the permanent and transient population sub-groups (including school children and work force), as well as all special facilities occupants.

In order to estimate the evacuation time for the year 1990, population projections were based on growth projections from the Limerick Environmental Report for Operating License. Important assumptions used in developing the 1990 evacuation time estimate for the Limerick EPZ included the following:

- Population projections for the year 1990 are only for the permanent population sub-group. All other population sub-groups (i.e., school, work force, and special facilities) are assumed to remain at their existing levels.

- The evacuation roadway network will be unchanged from present routing, design, and operating conditions.

- Existing notification/preparation/mobilization time distributions will still be in effect in the year 1990.

- Vehicle occupancy rates will be the same for the 1990 evacuation as they are for the existing case.

For the purpose of this analysis, the full EPZ winter weekday fair weather scenario was used. The estimated evacuation time for this condition in the year 1990 is 5 hours, 35 minutes.

7.6 Evacuation Time Estimate With the Completion of the Schuylkill Expressway Extension

The Schuylkill Expressway Extension is a new 4-lane roadway facility, part of which is currently under construction. The completed roadway will extend from Route 422 (Pottstown By-Pass), southerly to Route 363 near West Norriton. The current construction schedule* for this roadway is outlined below:

- Route 363 to Egypt Road	Complete, open to traffic
- Egypt Road to Route 29	Currently under construction; contractor has until July of 1985 to complete. However, work is ahead of schedule and it looks as if this section will be completed by fall/winter of 1984.
- Route 29 to Lewis Street	Complete, open to traffic.
- Lewis Street to Route 422 (Pottstown By-Pass).	Under construction, contractor has until Nov. 1984 to complete. No problems are anticipated with this schedule.

*Source: Personal communication with Mr. Dennis Tiley, Assistant District Traffic Engineer, Pennsylvania Department of Transportation, April 20, 1984.

Evacuation simulations were performed assuming completion of the Schuylkill Expressway Extension for evacuation of the entire EPZ under winter weekday fair weather conditions. The previously presented 1980 population and vehicle demand data for the winter weekday condition was used for the analysis. Vehicle occupancy rates and notification/preparation/mobilization time distributions were also the same as the 1980 winter weekday case.

The evacuation simulation, with the completion of the Schuylkill Expressway Extension, resulted in the same estimates which were developed for the existing winter weekday condition (i.e., 4 hours, 50 minutes). Although use of the new expressway would result in more efficient evacuation for areas close to the plant, it has little effect on the total EPZ evacuation due to capacity deficiencies along Route 363 south, which would serve as a major exiting corridor, with or without the new expressway extension.

REFERENCES

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3. "Berks County Radiological Emergency Response Plan," November 1983.
4. "Chester County Radiological Emergency Response Plan," December 1983.
5. "Montgomery County Radiological Emergency Response Plan," August 1983.
6. "Amity Township Radiological Emergency Response Plan," October 1983.
7. "Boyertown Borough Radiological Emergency Response Plan," October 1983.
8. "Colebrookdale Townsnip Radiological Emergency Response Plan," October 1983.
9. "Douglass Township Radiological Emergency Response Plan," October 1983.
10. "Earl Township Radiological Emergency Response Plan," October 1983.
11. "Union Township Radiological Emergency Response Plan," October 1983.
12. "Washington Township Radiological Emergency Response Plan," October 1983.
13. "Charlestown Township Radiological Emergency Response Plan," October 1983.
14. "East Coventry Townsnip Radiological Emergency Response Plan," October 1983.
15. "East Nantmeal Townsnip Radiological Emergency Response Plan," October 1983.
16. "East Pikeland Townsnip Radiological Emergency Response Plan," October 1983.
17. "East Vincent Townsnip Radiological Emergency Response Plan," October 1983.
18. "North Coventry Townsnip Radiological Emergency Response Plan," October 1983.
19. "Phoenixville Borough Radiological Emergency Response Plan," October 1983.
20. "Schuylkill Townsnip Radiological Emergency Response Plan," October 1983.
21. "South Coventry Township Radiological Emergency Response Plan," October 1983.
22. "Spring City Borough Radiological Emergency Response Plan," October 1983.
23. "Upper Uwchlan Township Radiological Emergency Response Plan," October 1983.
24. "Warwick Township Radiological Emergency Response Plan," October 1983.
25. "West Pikeland Township Radiological Emergency Response Plan," October 1983.
26. "West Vincent Townsnip Radiological Emergency Response Plan," October 1983.
27. "Collegeville Borough Radiological Emergency Response Plan," October 1983.
28. "Douglass Township Radiological Emergency Response Plan," October 1983.
29. "Green Lane Borough Radiological Emergency Response Plan," October 1983.
30. "Limerick Townsnip Radiological Emergency Response Plan," October 1983.
31. "Lower Frederick Township Radiological Emergency Response Plan," October 1983.
32. "Lower Pottsgrove Townsnip Radiological Emergency Response Plan," October 1983.

33. "Lower Providence Township Radiological Emergency Response Plan," October 1983.
34. "Lower Salford Townsnip Radiological Emergency Response Plan," October 1983.
35. "Marlborough Townsnip Radiological Emergency Response Plan," October 1983.
36. "New Hanover Townsnip Radiological Emergency Response Plan," October 1983.
37. "Perkiomen Townsnip Radiological Emergency Response Plan," October 1983.
38. "Pottstown Borough Radiological Emergency Response Plan," October 1983.
39. "Royersford Borough Radiological Emergency Response Plan," October 1983.
40. "Schwenksville Borough Radiological Emergency Response Plan," October 1983.
41. "Skippack Townsnip Radiological Emergency Response Plan," October 1983.
42. "Trappe Borough Radiological Emergency Response Plan," October 1983.
43. "Upper Frederick Townsnip Radiological Emergency Response Plan," October 1983.
44. "Upper Pottsgrove Townsnip Radiological Emergency Response Plan," October 1983.
45. "Upper Providence Townsnip Radiological Emergency Response Plan," October 1983.
46. "Upper Salford Townsnip Radiological Emergency Response Plan," October 1983.
47. "West Pottsgrove Townsnip Radiological Emergency Response Plan," October 1983.
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50. "Phoenixville Hospital Radiological Emergency Response Plan," May 1983.
51. "Montgomery County Geriatric and Renabilitation Center Emergency Response Plan," June 1983.
52. "Eagleville Hospital Radiological Emergency Response Plan," August 1983.
53. "Phoenixville Manor, Inc. Radiological Emergency Response Plan," July 1983.
54. "Leader Nursing Home and Rehabilitation Center Radiological Emergency Response Plan," May 1983.
55. "Pottstown Memorial Medical Center Radiological Emergency Response Plan," July 1983.
56. "Frederick Mennonite Home Radiological Emergency Response Plan," June 1983.
57. "Manatawny Manor Radiological Emergency Response Plan," June 1983.
58. "River Crest Center Radiological Emergency Response Plan," June 1983.
59. "Coventry Manor Radiological Emergency Response Plan," June 1983.
60. "West-Mont Christian Academy Radiological Emergency Response Plan," June 1983.
61. "Chapel Christian Academy Radiological Emergency Response Plan," June 1983.
62. "New Life Youth and Family Services, Inc. Radiological Emergency Response Plan," July 1983.
63. "St. Gabriel's Hall Radiological Emergency Response Plan," June 1983.
64. "Valley Forge Christian Academy Radiological Emergency Response Plan," June 1983.

65. "Uppattinas Open Community School Radiological Emergency Response Plan," June 1983.
66. "Greater Pottstown Christian Academy Radiological Emergency Response Plan," June 1983.
67. "Wayside Christian School, Inc. Radiological Emergency Response Plan," June 1983.
68. "Saint Ann School Radiological Emergency Response Plan," June 1983.
69. "Valley Forge Christian College Radiological Emergency Response Plan," June 1983.
70. "Kimberton Farm School Radiological Emergency Response Plan," February 1983.
71. "Pine Forge Academy Radiological Emergency Response Plan," June 1983.
72. "Pine Forge S.D.A. Elementary School Radiological Emergency Response Plan," June 1983.
73. "Sacred Heart Elementary School Radiological Emergency Response Plan," July 1983.
74. "Bright Spot Kindergarten Radiological Emergency Response Plan," July 1983.
75. "The Hill School Radiological Emergency Response Plan," June 1983.
76. "Saint Aloysius School Radiological Emergency Response Plan," July 1983.
77. "Saint Peter's School Radiological Emergency Response Plan," June 1983.
78. "Wyndcroft School Radiological Emergency Response Plan," June 1983.
79. "Ursinus College Radiological Emergency Response Plan," August 1983.
80. "Saint Pius X High School Radiological Emergency Response Plan," June 1983.
81. "Saint Eleanor School Radiological Emergency Response Plan," June 1983.
82. "Holy Trinity School Radiological Emergency Response Plan," January 1983.
83. "Saint Joseph Kindergarten Radiological Emergency Response Plan," June 1983.
84. "Saint Gabriel School Radiological Emergency Response Plan," June 1983.
85. "Twin Acres Country Day School Radiological Emergency Response Plan," July 1983.
86. "Western Montgomery County Area Vocational-Technical School Radiological Emergency Response Plan," June 1983.
87. "Saint Basil the Great School Radiological Emergency Response Plan," June 1983.
88. "Lincoln School Radiological Emergency Response Plan," June 1983.
89. "Northern Chester County Technical School Radiological Emergency Response Plan," June 1983.
90. "Saint Mary of the Assumption Radiological Emergency Response Plan," June 1983.
91. "Saint Mary's School Radiological Emergency Response Plan," June 1983.
92. "Liberty Forge School Radiological Emergency Response Plan," June 1983.
93. "Montessori Academy of Pennsylvania Radiological Emergency Response Plan," June 1983.
94. "Collegeville Montessori Academy Radiological Emergency Response Plan," June 1983.
95. "Daniel Boone Area School District Radiological Emergency Response Plan," November 1983.
96. "Boyertown Area School District Radiological Emergency Response Plan," November 1983.
97. "Owen J. Roberts School District Radiological Emergency Response Plan," Draft 7.

98. "Downingtown Area School District Radiological Emergency Response Plan," November 1983.
99. "Phoenixville Area School District Radiological Emergency Response Plan," November 1983.
100. "Great Valley School District Radiological Emergency Response Plan," November 1983.
101. "Pottsgrove School District Radiological Emergency Response Plan," November 1983.
102. "Spring-Ford Area School District Radiological Emergency Response Plan," November 1983.
103. "Upper Perkiomen School District Radiological Emergency Response Plan," November 1983.
104. "Souderton Area School District Radiological Emergency Response Plan," November 1983.
105. "Pottstown School District Radiological Emergency Response Plan," November 1983.
106. "Methacton School District Radiological Emergency Response Plan," November 1983.
107. "Perkiomen Valley School District Radiological Emergency Response Plan," November 1983.
108. "Limerick Generating Station Environmental Report for Operating License," Energy Consultants Inc., September 1981.
109. "Berks County Data Book 1983," Berks County Planning Commission, 1983.
110. "Chester County Industrial Directory," Citation Sites for Industry, 1983.
111. "1983-84 Industrial Directory," Montgomery County Industrial Development Corporation, December 1982.
112. L.E.A. List of Day Care Centers, Day and Summer Camps, and Other Educational Facilities.

Personal communication with:

113. Ms. Paula Wagner, Lincoln Underwear Co. on March 20, 1984.
114. Personnel Department, Sunset Manufacturing, Inc. on March 19, 1984.
115. Personnel Department, Peerless Publications, Inc. on March 19, 1984.
116. Personnel Department, Sanders and Thomas Engineers on March 21, 1984.
117. Personnel Department, Neapco Products, Inc. on March 19, 1984.
118. Personnel Department, Pottstown Machine Co. on March 19, 1984.
119. Personnel Department, Occidental Chemical Corp. on March 21, 1984.
120. Receptionist, Pollock Research and Design, Inc. on March 20, 1984.
121. Personnel Department, Snow King Frozen Foods, Inc. on March 19, 1984.
122. Personnel Department, Videotek, Inc. on March 19, 1984.
123. Personnel Department, Mayer-Pollack Steel Corp. on March 19, 1984.
124. Ms. Mary Beaver, The Mercury on March 20, 1984.
125. Personnel Department, Doehler-Jarvis Casting Div., N.L. Industries, Inc. on March 20, 1984.
126. Ms. Mary Walton, Meadowbrook Farms, Inc. on March 20, 1984.
127. Personnel Department, Stanley Tools, Inc. on March 19, 1984.
128. Personnel Department, Diamond Glass Co. on March 19, 1984.
129. Personnel Department, Morris Wheeler and Co. on March 19, 1984.
130. Personnel Department, Cann and Saul Steel Co. on March 19, 1984.
131. Personnel Department, Clover Lamp Co., Inc. on March 19, 1984.
132. Ms. Shirley Drumheller, Crouse Co., Inc. on March 19, 1984.
133. Personnel Department, Gudebrod Inc. on March 19, 1984.
134. Personnel Department, Stanley G. Flagg and Co. on March 19, 1984.

Personal communication with (continued):

135. Personnel Department, Universal Machine Co. on March 19, 1984.
136. Personnel Department, Yocum Knitting Co. on March 19, 1984.
137. Personnel Department, Synthane Taylor Corp. on March 19, 1984.
138. Personnel Department, Allied Tank Truck Equipment Co. on March 19, 1984.
139. Personnel Department, Collegeville Flag and Manufacturing Co. on March 19, 1984.
140. Mrs. Armbruster, T. J. Cope, Inc. on March 19, 1984.
141. Personnel Manager, Superior Tube Co. on March 19, 1984.
142. Personnel Department, Uniform Tubes, Inc. on March 19, 1984.
143. Ms. Joanne Repert, JEM Manufacturing on March 19, 1984.
144. Personnel Department, Cook Specialty Co. on March 19, 1984.
145. Personnel Department, Container Corporation of America on March 19, 1984.
146. Receptionist, Dettra Flag Co. on March 19, 1984.
147. Mr. Pete Spink, B. F. Goodrich Tire Co. on March 19, 1984.
128. Personnel Department, De-Pen Line Inc. on March 20, 1984.
149. Personnel Department, Thriftway Foods Inc. on March 20, 1984.
150. Personnel Department, Techalloy Co., Inc. on March 19, 1984.
151. Personnel Department, Static, Inc. on March 19, 1984.
152. Personnel Department, West and Sunny Slope Dairies, Inc. on March 20, 1984.
153. Personnel Department, Valley Forge Flag Co., Inc. on March 20, 1984.
154. Personnel Department, Spring City Electric Manufacturing Co. on March 20, 1984.
155. Mr. Dennis Owens, LaSalle Steel Co. on March 20, 1984.
156. Personnel Department, Springford Knit Co. on March 20, 1984.
157. Ms. Cindi King, Spring City Knitting Co. on March 19, 1984.
158. Ms. Doris McCann, Little Lake Industries on March 20, 1984.
159. Personnel Department, Amerind-Mackessic, Inc. on March 19, 1984.
160. Personnel Department, Devault Packing Co., Inc. on March 19, 1984.
161. Personnel Department, A.C. Miller Concrete Products, Inc. on March 19, 1984.
162. Personnel Department, Allan A. Myers, Inc. on March 19, 1984.
163. Personnel Department, Monsey Products Co. on March 19, 1984.
164. Personnel Department, Roberts Meat Packing Corp. on March 19, 1984.
165. Personnel Department, Bachman Co. on March 19, 1984.
166. Personnel Department, The Budd Co. on March 19, 1984.
167. Personnel Department, Danco Tool and Mold Co., Inc. on March 19, 1984.
168. Personnel Department, Kimberton Co. on March 19, 1984.
169. Personnel Department, Leighton Industries, Inc. on March 19, 1984.
170. Personnel Department, Phoenix Steel Corp. on March 20, 1984.
171. Personnel Department, SCM Allied Coated Products on March 20, 1984.
172. Mr. Mueller, The West Co. on March 20, 1984.
173. Mr. Birnbaum, KEI Division of Cabot Corp. on March 19, 1984.
174. Ms. Shirley Weller, Boyertown Apparel, Inc. on March 20, 1984.
175. Ms. Joan Byers, Boyertown Auto Body Works on March 20, 1984.
176. Ms. Cathy Fisher, Boyertown Burial Casket Co. on March 20, 1984.
177. Personnel Department, The Eastern and Peerless Foundry Co. on March 20, 1984.
178. Ms. Judy Miller, H and R Manufacturing Co., Inc. on March 20, 1984.
179. Mr. Nasson, Osan Manufacturing Co., Inc. on March 20, 1984.
180. Ms. Dawn Hydock, Unicast Foundries Div. - Berkmont Industries on March 20, 1984.

Personal communication with (continued):

181. Ms. Linda Ferguson, Wagner Electric Corp. on March 20, 1984.
182. Personnel Department, A. W. Mercer on March 20, 1984.
183. Personnel Department, Boyertown Packaging Corp. on March 20, 1984.
184. Receptionist, American Crane and Equipment Corp. on March 20, 1984.
185. Mr. Metzler, Kiwi Polish Co. on March 20, 1984.
186. Ms. Reeser, Rainbow Motel on March 20, 1984.
187. Desk Clerk, Mel-Dor Motel on March 20, 1984.
188. Desk Clerk, Hillside Motel on March 21, 1984.
189. Mr. Harshed Desai, Vincent Motel on March 20, 1984.
190. Bartender, Airport Hotel on March 20, 1984.
191. Desk Clerk, Blue Eagle Motel on March 20, 1984.
192. Desk Clerk, Bramcote Hotel on March 20, 1984.
193. Ms. Lori Leister, Holiday Inn on March 20, 1984.
194. Ms. Guest, Modern Motel on March 20, 1984.
195. Ms. Betty Vormschlag, Lamb Hotel and Family Restaurant on March 20, 1984.
196. Desk Clerk, Graterford Hotel on March 20, 1984.
197. Ms. Margie Patzer, Teleflex Inc. on March 26, 1984.
198. Mr. Lee Boyle, Hopewell Village National Historic Park on March 22, 1984.
199. Mr. Klemel, French Creek State Park on March 22, 1984.
200. Mr. Rich Romach, Ringing Rock Park on March 23, 1984.
201. Employee, Schuylkill Canal Park on March 24, 1984.
202. Employee, Douglass Township Park on March 23, 1984.
203. Mr. Graham, Audubon Wildlife Sanctuary on March 22, 1984.
204. Employee, Sanatoga Memorial Park on March 23, 1984.
205. Mr. Aspen, Hickory Park on March 23, 1984.
206. Mr. Frank McGregor, Upper Providence Township Park on March 23, 1984.
207. Employee, Collegeville Borough Park on March 23, 1984.
208. Dr. Glick, Variety Club Camp on March 23, 1984.
209. Employee, Fellowship Farm on March 23, 1984.
210. Employee, Beulahland Park on March 23, 1984.
211. Employee, Lakeview Amusement Park on March 23, 1984.
212. Employee, Philadelphia County Girl Scout Camp on March 23, 1984.
213. Ms. Margaretta Sanders, Pennypacker Mills Park on March 23, 1984.
214. Mr. Bueller, Lower Perkiomen Valley Park on March 22, 1984.
215. Ms. Mary Devlin, Valley Forge State Park on March 22, 1984.
216. Employee, Upper Perkiomen Valley Park on March 22, 1984.
217. Employee, Upper Schuylkill Valley Farm Park on March 22, 1984.
218. Ms. Pat Dyer, Camp Indian Run (GSA) on March 23, 1984.
219. Ms. Naomi Taylor, Camp Sankanac on March 22, 1984.
220. Director, Freedoms Foundation on March 22, 1984.
221. Employee, State Game Lands No. 43 on March 22, 1984.
222. Mr. John Miele, Evansburg State Park on March 23, 1984.
223. Employee, Swiss Pines Park on March 22, 1984.
224. Employee, Warwick Woods Campgrounds on March 22, 1984.
225. Employee, Warwick County Park on March 22, 1984.
226. Employee, Camp Innabah on March 22, 1984.
227. Ms. Dorothy Becker, P.E. Cromby Generating Station on March 29, 1984.
228. Mrs. Hoover, Marsh Creek State Park on March 29, 1984.
229. Mr. Paul Seton, Spring Mount Ski Area on March 29, 1984.

230. "Highway Capacity Manual," Highway Research Board Special Report 97, National Academy of Science, 1965.
231. "Interim Manuals on Highway Capacity," Transportation Research Circular 212, Transportation Research Board, January 1980.
232. "The Environmental Influence of Rain on Freeway Capacity," E. Roy Jones and Merrell E. Goolsby, Highway Research Record No. 321, Highway Research Board, 1970: and "Headway Approach to Intersection Capacity," Donald S. Berry and P. D. Gandhi, Highway Research Record No. 453, Highway Research Board, 1973.
233. "Evacuation Risks - An Evaluation," Hans and Sell, US EPA, July 1974; and "Evacuation Planning in Emergency Management," Perry, Lindell and Green, Lexington Books, 1981.

APPENDIX 1

PERMANENT POPULATION AND VEHICLE DEMAND ESTIMATES

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
BERKS COUNTY		
Amity Township	5883	
Tract 0119		
Group 1	1236	412
	1236	412
	619	206
	3091	
Group 2	626	209
	626	Out of EPZ[3]
	1252	
Group 3	0	0
ED 0192	534	178
	133	44
	667	
ED 0193	507	Out of EPZ[3]
ED 0194	366	Out of EPZ[3]
Total Amity Population Within EPZ	4384	
Boyertown Borough	3979	
Tract 0132		
Group 1	962	321
Group 2	2033	678
Group 3	984	328
Total Boyertown Population Within EPZ	3979	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

3 Population is located outside of the Limerick EPZ boundary, thus there is no corresponding vehicle demand for evacuation purposes.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Colebrookdale Township	4748	
Tract 0131		
Group 1	1277	426
Group 1A	530	177
	531	177
	1061	
Group 2	1758	586
ED 0159	326	109
	326	109
	652	
Total Colebrookdale Population Within EPZ	4748	
Douglass Township	3128	
Tract 0130		
Group 1	1328	443
Group 2	905	302
ED 0195	447	149
	448	149
	895	
Total Douglass Population Within EPZ	3128	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Earl Township	2607	
Tract 0130		
ED 0161	1982	Out of EPZ[3]
ED 0162	562	187
	63	Out of EPZ[3]
	625	
Total Earl Population Within EPZ	562	
Union Township	2815	
Tract 0119	845	282
	281	94
	1689	Out of EPZ[3]
	2815	
Total Union Population Within EPZ	1126	
Washington Township	2568	
Tract 0133		
ED 0156	959	Out of EPZ[3]
ED 0157	161	54
	177	59
	176	59
	1095	Out of EPZ[3]
	1609	
Total Washington Population Within EPZ	514	

TOTAL BERKS COUNTY POPULATION WITHIN EPZ - 18,441

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

3 Population is located outside of the Limerick EPZ boundary, thus there is no corresponding vehicle demand for evacuation purposes.

PERMANENT RESIDE POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
CHESTER COUNTY		
Charlestown Township	2770	
Tract 3020		
Group 1	429	143
	428	143
	857	
Group 9	382	127
	383	127
	383	127
	382	127
	383	127
	1913	
Total Charlestown Population Within EPZ	2770	
East Coventry Township	4085	
Tract 3013		
Group 1	155	52
Group 9	3930	1310
Total East Coventry Population Within EPZ	4085	
East Nantmeal Township	1222	
Tract 3017		
Group 9	611	204
	611	204
	1222	
Total East Nantmeal Population Within EPZ	1222	

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L38, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
East Pikeland Township	4410	
Tract 3010		
Group 1	405	135
Group 2	871	290
Group 3	799	266
Group 9	247	82
Group 9A	835	278
	626	209
	627	209
	2088	
Total East Pikeland Population Within EPZ	4410	
East Vincent Township	4739	
Tract 3012.01		
Group 9	1040	347
Group 9A	5	2
Tract 3012.02		
Group 1	638	213
Group 2	373	124
Group 9	642	214
Group 9A	1429	476
	612	204
	2041	
Total East Vincent Population Within EPZ	4739	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation		Population[1]	Vehicle Demand[2]
North Coventry Township		7164	
Tract 3014.01			
	Group 1	1644	548
	Group 2	1324	441
	Group 9	136	45
Tract 3014.02			
	Group 2	0	0
	Group 9	226	75
	Group 9A	476	159
	Group 9B	3358	1119
Total North Coventry Population Within EPZ		7164	
Phoenixville Borough	14,165		
Tract 3006			
	Group 1	965	322
	Group 2	1185	395
	Group 9	331	110
Tract 3007			
	Group 1	643	214
	Group 2	717	239

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Phoenixville Borough (Cont.)		
Group 3	642	214
Group 4	778	259
Group 5	624	208
Group 6	673	224
Group 7	380	127
Group 8	624	208
Tract 3008		
Group 1	1901	634
Group 2	1951	650
Group 3	0	0
Group 9	59	20
Tract 3009		
Group 1	1060	353
Group 2	800	267
Group 3	812	271
Group 9	20	7
Total Phoenixville Population Within EPZ	14,165	

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Schuylkill Township	5993	
Tract 3005		
Group 1	697	232
	696	232
	1393	
Group 1A	93	31
Group 2	1544	515
Group 3	1199	400
Group 3A	318	106
Group 9	273	91
	273	91
	546	
Group 9A	450	150
	450	150
	900	
Total Schuykill Population Within EPZ	5993	
South Coventry Township	1556	
Tract 3015		
Group 9	778	259
	778	259
	1556	
Total South Coventry Population Within EPZ	1556	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Spring City Borough	3389	
Tract 3011		
Group 1	895	298
Group 2	1089	363
Group 3	417	139
Group 4	759	253
Group 9	229	76
Total Spring City Population Within EPZ	3389	
Upper Uwchlan Township	1805	
Tract 3045		
Group 1	34	11
	34	11
	68	
Group 9	165	55
	261	87
	261	87
	347	116
	702	Out of EPZ[3]
	1737	
Total Upper Uwchlan Population Within EPZ	1103	

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

3 Population is located outside of the Limerick EPZ boundary, thus there is no corresponding vehicle demand for evacuation purposes.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Uwchlan Township	8364	
Tract 3044.01	6272	Out of EPZ[3]
Tract 3044.02		
Group 3	677	Out of EPZ[3]
Group 9	250	83
	1165	Out of EPZ[3]
	1415	
Total Uwchlan Population Within EPZ	250	
Warwick Township	2350	
Tract 3016		
Group 9	1058	353
	1057	352
	235	Out of EPZ[3]
	2350	
Total Warwick Population Within EPZ	2115	
West Pikeland Township	1536	
Tract 3019		
Group 9	384	128
	384	128
	768	256
	1536	
Total West Pikeland Population Within EPZ	1536	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

3 Population is located outside of the Limerick EPZ boundary, thus there is no corresponding vehicle demand for evacuation purposes.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
West Vincent Township	1992	
Tract 3018		
Group 9	996	332
	398	133
	399	133
	199	66
	1992	
Total West Vincent Population Within EPZ	1992	

TOTAL CHESTER COUNTY POPULATION WITHIN EPZ - 56,489

MONTGOMERY COUNTY		
Collegeville Borough	3406	
Tract 2063		
Group 1	1756	585
Group 2	251	84
Group 3	561	187
Group 9	838	279
Total Collegeville Population Within EPZ	3406	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Douglass Township	5833	
Tract 2082.01		
Group 9	1476	492
Tract 2082.02		
Group 1	530	177
Group 2	536	179
Group 3	421	140
Group 9	669	223
	502	167
	502	167
	1673	
Group 9A	479	160
	479	160
	239	80
	1197	
Total Douglass Population Within EPZ	5833	
Green Lane Borough	542	
Tract 2077		
Group 1	425	142
Group 9	117	39
Total Green Lane Population Within EPZ	542	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Limerick Township	5298	
Tract 2086.01		
Group 9	1143	381
	1142	381
	2285	
Tract 2086.02		
Group 1	350	117
Group 9	1065	355
	1065	355
	533	178
	2663	
Total Limerick Population Within EPZ	5298	
Lower Frederick Township	2379	
Tract 2085		
Group 2	333	111
Group 9	2046	682
Total Lower Frederick Population Within EPZ	2379	

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Lower Pottsgrove Township	7299	
Tract 2087.01		
Group 1	699	233
Group 2	452	151
Group 3	0	0
Group 9	177	59
Group 9A	2572	857
Group 9B	377	126
Tract 2087.02		
Group 1	645	215
Group 2	1254	418
Group 3	1123	374
Total Lower Pottsgrove Population Within EPZ	7299	
Lower Providence Township	18,945	
Tract 2060.04		
Group 1	1849	616
Group 1A	107	36
Group 9	1334	445
Group 9A	392	131

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Lower Providence Township (Cont.)		
Tract 2060.05		
Group 1	2647	882
Group 1A	14	5
Group 2	1540	513
Tract 2060.06		
Group 1	983	328
Group 9	1339	446
Tract 2060.07		
Group 1	305	102
Group 9	5130	1710
Tract 2060.08		
Group 1	605	202
Group 1A	629	210
Group 1B	27	9
Group 9	1501	500
Tract 2060.09		
Group 9	543	181
Total Lower Providence Population Within EPZ	18,945	

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1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Lower Salford Township	6156	
Tract 2070.01		
Group 9	2052	684
	738	246
	2790	
Group 9A	420	Out of EPZ[3]
Tract 2070.02	2946	Out of EPZ[3]
Total Lower Salford Population Within EPZ	2052	
Marlborough Township	2849	
Tract 2076		
Group 1	39	13
	353	Out of EPZ[3]
	392	
Group 9	123	41
	123	41
	2211	Out of EPZ[3]
	2457	
Total Marlborough Population Within EPZ	285	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per venicle.

3 Population is located outside of the Limerick EPZ boundary, thus there is no corresponding vehicle demand for evacuation purposes.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
New Hanover Township	4623	
Tract 2083		
Group 4	156	52
Group 5	717	239
Group 6	220	73
Group 9	1412	471
	529	176
	530	177
	1059	353
	3530	
Total New Hanover Population Within EPZ	4623	
Perkiomen Township	3265	
Tract 2065		
Group 1	120	40
Group 1A	0	0
Group 9	647	216
	1511	504
	2158	
Group 9A	987	329
Total Perkiomen Population Within EPZ	3265	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Pottstown Borough	22,729	
Tract 2088.01		
Group 1	971	324
Group 2	48	16
Tract 2088.02		
Group 1	1049	350
Group 2	1143	381
Group 3	1025	342
Tract 2089.01		
Group 1	1244	415
Group 2	1082	361
Group 3	1090	363
Tract 2089.03		
Group 1	636	212
Group 2	1015	338
Group 3	1546	515
Tract 2089.04		
Group 1	1233	411
Group 2	949	316
Group 3	934	311

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Pottstown Borough (Cont.)		
Tract 2089.05		
Group 1	943	314
Group 2	715	238
Group 3	797	266
Group 4	592	197
Tract 2089.06		
Group 1	1255	418
Group 2	982	327
Group 3	949	316
Group 4	754	251
Tract 2090		
Group 1	40	13
Group 2	811	270
Group 3	926	309
Total Pottstown Population Within EPZ	22,729	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Royersford Borough	4243	
Tract 2062.01		
Group 1	1061	354
Group 2	1352	451
Tract 2062.02		
Group 1	1242	414
Group 2	588	196
Total Royersford Population Within EPZ	4243	
Schwenksville Bororough	1041	
Tract 2066		
Group 1	362	121
Group 2	207	69
Group 9	472	157
Total Schwenksville Population Within EPZ	1041	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Skippack Township	5784	
Tract 2067.01		
Group 1	461	154
Group 2	242	81
Group 9	422	141
Group 9A	1138	379
	1138	379
	568	189
	2844	
Tract 2067.02		
Group 9	1815	605
Total Skippack Population Within EPZ	5784	
Trappe Borough	1800	
Tract 2064		
Group 1	249	83
Group 9	1551	517
Total Trappe Population Within EPZ	1800	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Upper Frederick Township	1759	
Tract 2084		
Group 9	1231	410
	528	176
	1759	
Total Upper Frederick Population Within EPZ	1759	
Upper Pottsgrove Township	2873	
Tract 2091		
Group 1	118	39
Group 2	822	274
Group 3	34	11
Group 9	441	147
	428	143
	428	143
	1297	
Group 9A	205	68
	199	66
	198	66
	602	
Total Upper Pottsgrove Population Within EPZ	2873	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L38, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
Upper Providence Township	9551	
Tract 2061.02		
Group 1	527	176
Group 3	648	216
Group 9	2142	714
Group 9A	185	62
Tract 2061.03		
Group 1	931	310
Group 9	2769	923
Group 9A	1628	543
Tract 2061.04		
Group 9	721	240
Total Upper Providence Population Within EPZ	9551	
Upper Salford Township	2375	
Tract 2075		
Group 1	309	103
Group 9	826	275
	723	241
	517	172
-	2066	
Total Upper Salford Population Within EPZ	2375	

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

PERMANENT RESIDENT POPULATION WITHIN THE LIMERICK EPZ

Census Designation	Population[1]	Vehicle Demand[2]
West Pottsgrove Township	4208	
Tract 2092.01		
Group 1	1188	396
Group 2	110	37
Group 9	74	25
Group 9A	348	116
Tract 2092.02		
Group 1	1367	456
Group 2	680	227
Group 3	441	147
Total West Pottsgrove Population Within EPZ	4208	

TOTAL MONTGOMERY COUNTY POPULATION WITHIN EPZ - 110,290

---

1 Source: 1980 Census of Population and Housing - STF 3, Version 2/83L3B, Pennsylvania State Data Center, Middletown, PA.

2 Based on an average vehicle occupancy factor of 3.0 persons per vehicle.

TRANSPORT DEPENDENT PERMANENT POPULATION

Municipality	Transport Dependent Population[1]	Buses Required[2]	Ambulances Required[3]
Berks County:			
Amity	28	1	N.A.
	7	N.A.	4
Boyertown	55	2	N.A.
	3	N.A.	2
Colebrookdale	27	1	N.A.
	3	N.A.	2
Douglass	28	1	N.A.
	6	N.A.	3
Earl	28	1	N.A.
	2	N.A.	1
Union	22	1	N.A.
	2	N.A.	1
Washington	18	1	N.A.
	2	N.A.	1
Chester County:			
Charlestown	23	1	N.A.
	1	N.A.	1
East Coventry	62	2	N.A.
	4	N.A.	2
East Nantmeal	15	1	N.A.
	1	N.A.	1
East Pikeland	29	1	N.A.
-	2	N.A.	1
East Vincent	50	2	N.A.
	6	N.A.	3

1 Source: Energy Consultants Inc. March, 1984.
2 Assuming an average of 40 persons per bus.
3 Assuming 2 persons per ambulance.
N.A. Not applicable

TRANSPORT DEPENDENT PERMANENT POPULATION

Municipality	Transport Dependent Population[1]	Buses Required[2]	Ambulances Required[3]
North Coventry	108	3	N.A.
	3	N.A.	2
Phoenixville	308	8	N.A.
	14	N.A.	7
Schuylkill	48	2	N.A.
	10	N.A.	5
South Coventry	19	1	N.A.
Spring City	89	3	N.A.
	5	N.A.	3
Upper Uwchlan	14	1	N.A.
Uwchlan	N.A.	N.A.	N.A.
Warwick	1	N.A.	1
West Pikeland	12	1	N.A.
West Vincent	29	1	N.A.
	1	N.A.	1
Montgomery County:			
Collegeville	63	2	N.A.
	8	N.A.	4
Douglass	3	1	N.A.
Green Lane	11	1	N.A.
Limerick	104	3	N.A.
	4	N.A.	2

1 Source: Energy Consultants Inc. March, 1984.
2 Assuming an average of 40 persons per bus.
3 Assuming 2 persons per ambulance.
N.A. Not applicable

TRANSPORT DEPENDENT PERMANENT POPULATION

Municipality	Transport Dependent Population[1]	Buses Required[2]	Ambulances Required[3]
Lower Frederick	36	1	N.A.
	2	N.A.	1
Lower Pottsgrove	85	3	N.A.
	1	N.A.	1
Lower Providence	287	8	N.A.
	9	N.A.	5
Lower Salford	11	1	N.A.
	1	N.A.	1
Marlborough	31	1	N.A.
	3	N.A.	2
New Hanover	N.A.	N.A.	N.A.
Perkiomen	50	2	N.A.
	4	N.A.	2
Pottstown	605	16	N.A.
	25	N.A.	12
Royersford	169	5	N.A.
	4	N.A.	2
Schwenksville	20	1	N.A.
	3	N.A.	2
Skippack	61	2	N.A.
	1	N.A.	1

1 Source: Energy Consultants Inc. March, 1984.
2 Assuming an average of 40 persons per bus.
3 Assuming 2 persons per ambulance.
N.A. Not applicable

TRANSPORT DEPENDENT PERMANENT POPULATION

Municipality	Transport Dependent Population[1]	Buses Required[2]	Ambulances Required[3]
Trappe	30	2	N.A.
Upper Frederick	28	1	N.A.
	2	N.A.	1
Upper Pottsgrove	14	1	N.A.
	3	N.A.	2
Upper Providence	143	4	N.A.
	8	N.A.	4
Upper Salford	41	2	N.A.
	1	N.A.	1
West Pottsgrove	82	3	N.A.
	1	-	1
TOTAL	3039	95	85

1 Source: Energy Consultants Inc. March, 1984.
2 Assuming an average of 40 persons per bus.
3 Assuming 2 persons per ambulance.
N.A. Not applicable

APPENDIX 2

SEASONAL RESIDENT POPULATION AND VEHICLE DEMAND ESTIMATES

SEASONAL POPULATION WITHIN THE LIMERICK EPZ

MUNICIPALITY	POPULATION[1]	VEHICLE DEMAND[2]
MONTGOMERY COUNTY:		
Douglas Township	32	12
Limerick Township	11	4
Royersford Borough	0	0
Lower Frederick Township	184	68
Lower Pottsgrove Township	32	12
Pottstown Borough	32	12
Lower Providence Township	49	18
Lower Salford Township	5	2
Marlborough Township	11	4
Green Lane Borough	0	0
New Hanover Township	130	48
Perkiomen Township	43	16
Schwenksville Borough	0	0
Skippack Township	22	8
Upper Frederick Township	16	6
Upper Pottsgrove Township	0	0
Upper Providence Township	0	0
Collegeville Borough	5	2
Trappe Borough	0	0
Upper Salford Township	65	24
West Pottsgrove Township	0	0
Subtotal	637	236

1. Source: Based on 1980 Census of Housing Counts, assuming an average occupancy of 5.4 persons per unit.
2. Based on 2 vehicles per seasonal unit, or an average vehicle occupancy factor of 2.7 persons.

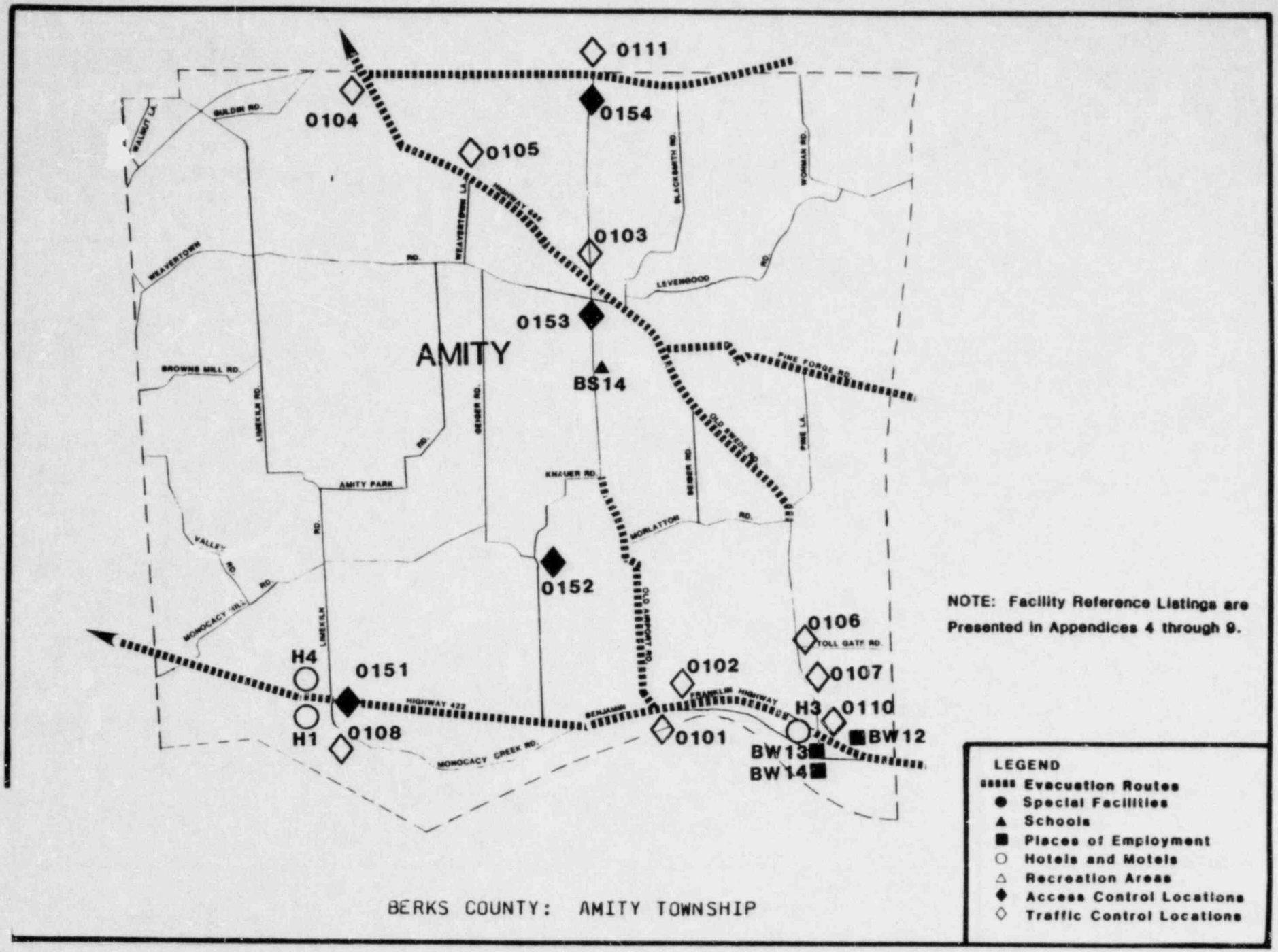
SEASONAL POPULATION WITHIN THE LIMERICK EPZ (Continued)

MUNICIPALITY	POPULATION[1]	VEHICLE DEMAND[2]
CHESTER COUNTY:		
Charlestown Township	0	0
East Coventry Township	0	0
East Nantmeal Township	0	0
East Pikeland Township	5	2
East Vincent Township	0	0
Spring City Borough	0	0
North Coventry Township	11	4
Schuylkill Township	22	8
Phoenixville Borough	5	2
South Coventry Township	11	4
Upper Uwchlan Township	5	2
Uwchlan Township	0	0
Warwick Township	59	22
West Pikeland Township	5	2
West Vincent Township	22	8
Subtotal	145	54
BERKS COUNTY:		
Amity Township	59	22
Colebrookdale Township	11	4
Boyertown Borough	11	4
Douglass Township	11	4
Earl Township	5	2
Union Township	16	6
Washington Township	43	16
Subtotal	156	58
TOTAL 1980 SEASONAL POPULATION IN MUNICIPALITIES WITHIN THE EPZ[3]	938	

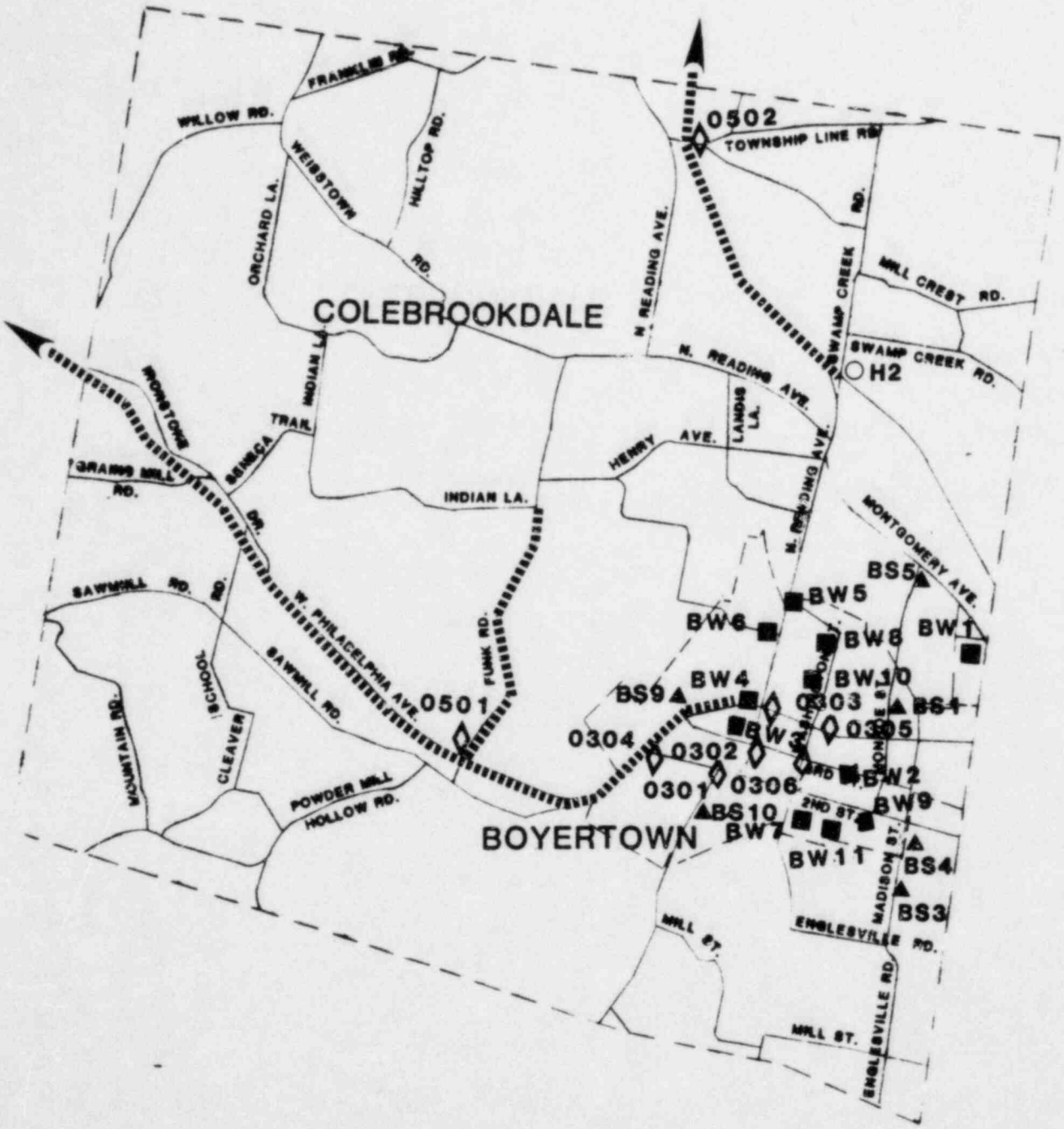
1. Source: Based on 1980 Census of Housing Counts, assuming an average occupancy of 5.4 persons per unit.
2. Based on 2 vehicles per seasonal unit, or an average vehicle occupancy factor of 2.7 persons.
3. In municipalities only partially within the EPZ seasonal housing locations were assumed to be completely within the EPZ, except for Marlborough where 10% was assumed to be within the EPZ.

APPENDIX 3

TOWNSHIP REFERENCE MAPS



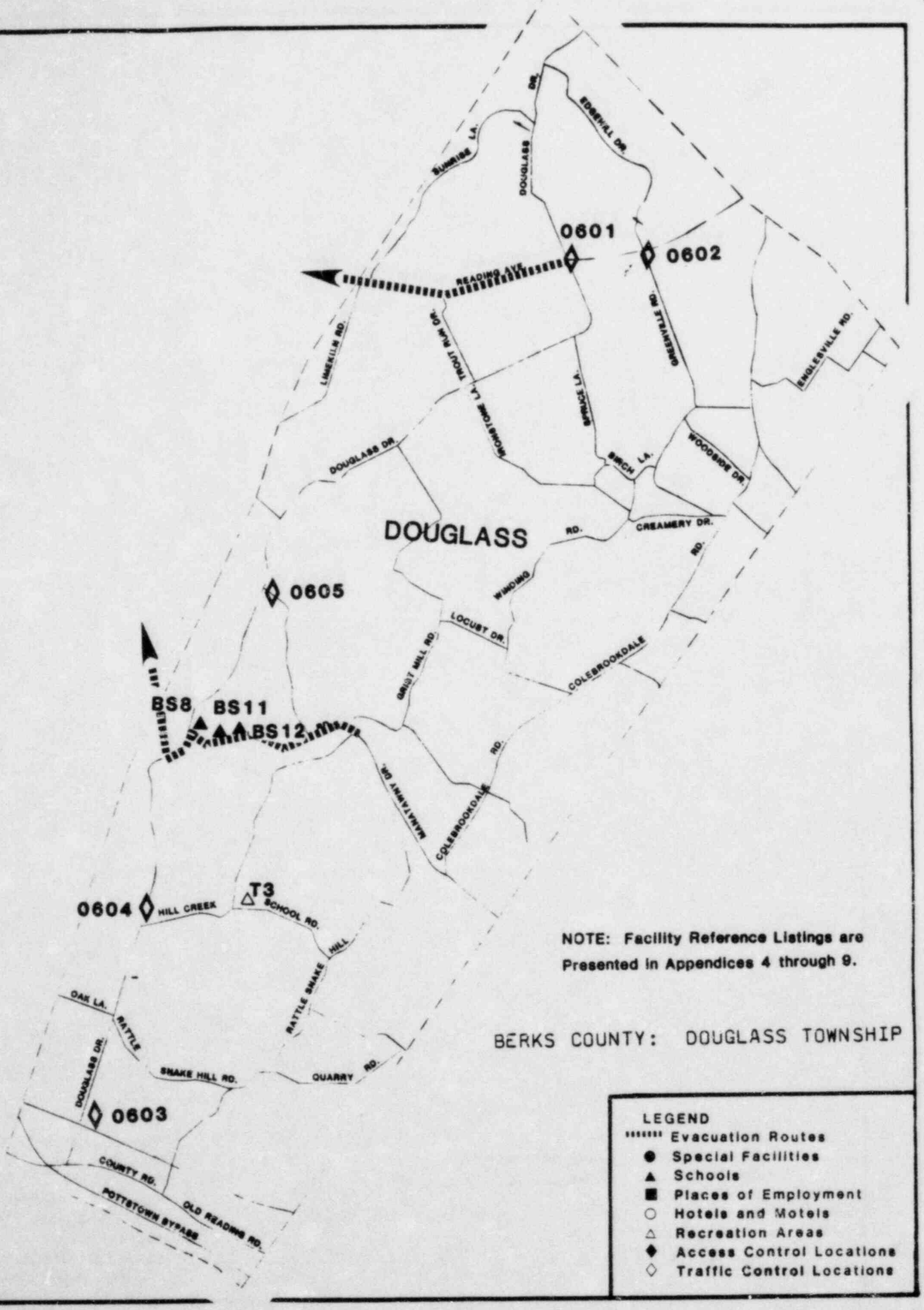
BERKS COUNTY: AMITY TOWNSHIP



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND
- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

BERKS COUNTY: COLEBROOKDALE TOWNSHIP
BOYERTOWN BOROUGH

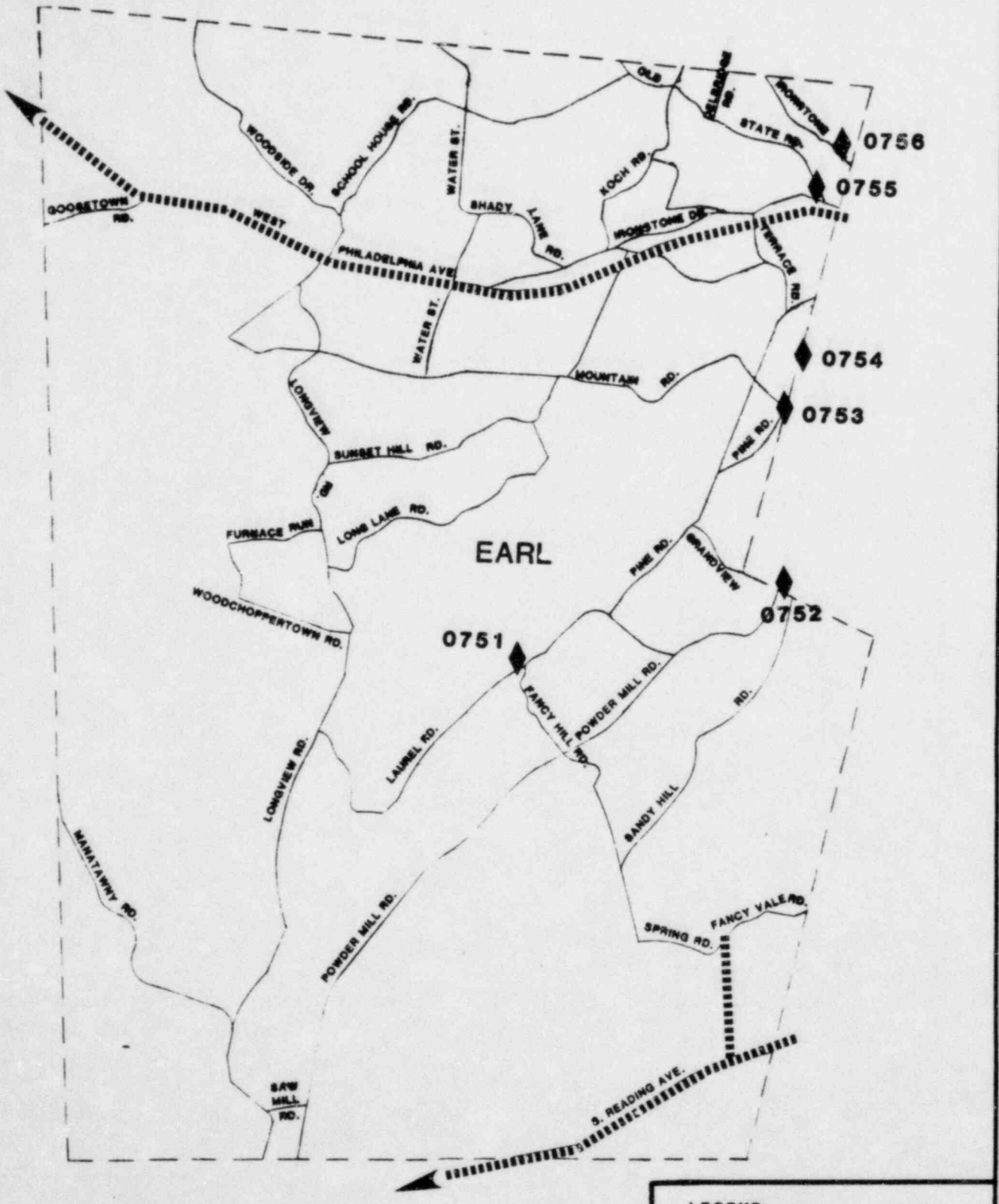


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

BERKS COUNTY: DOUGLASS TOWNSHIP

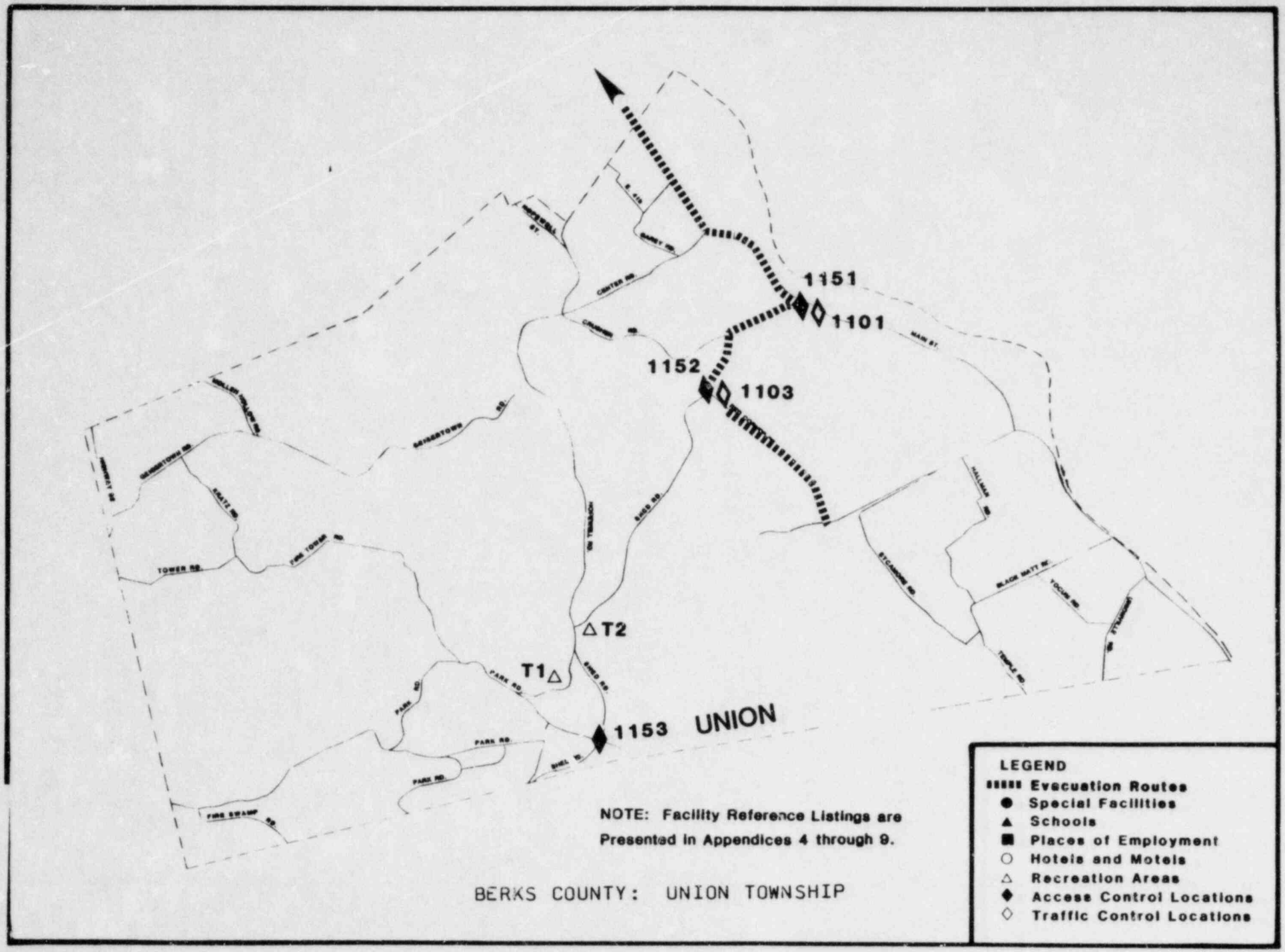
LEGEND
- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

Rev. 1 5/24/84



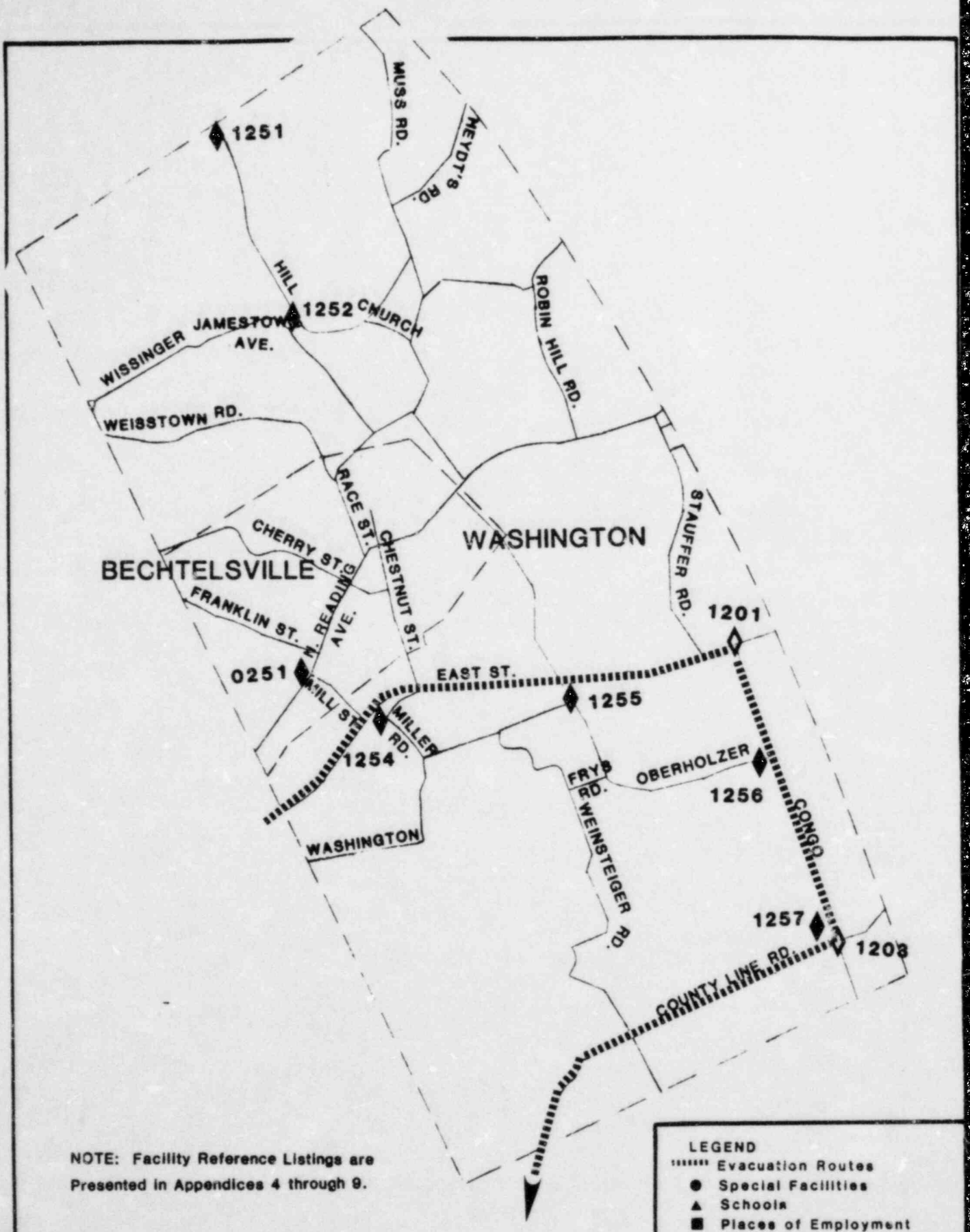
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

BERKS COUNTY: EARL TOWNSHIP

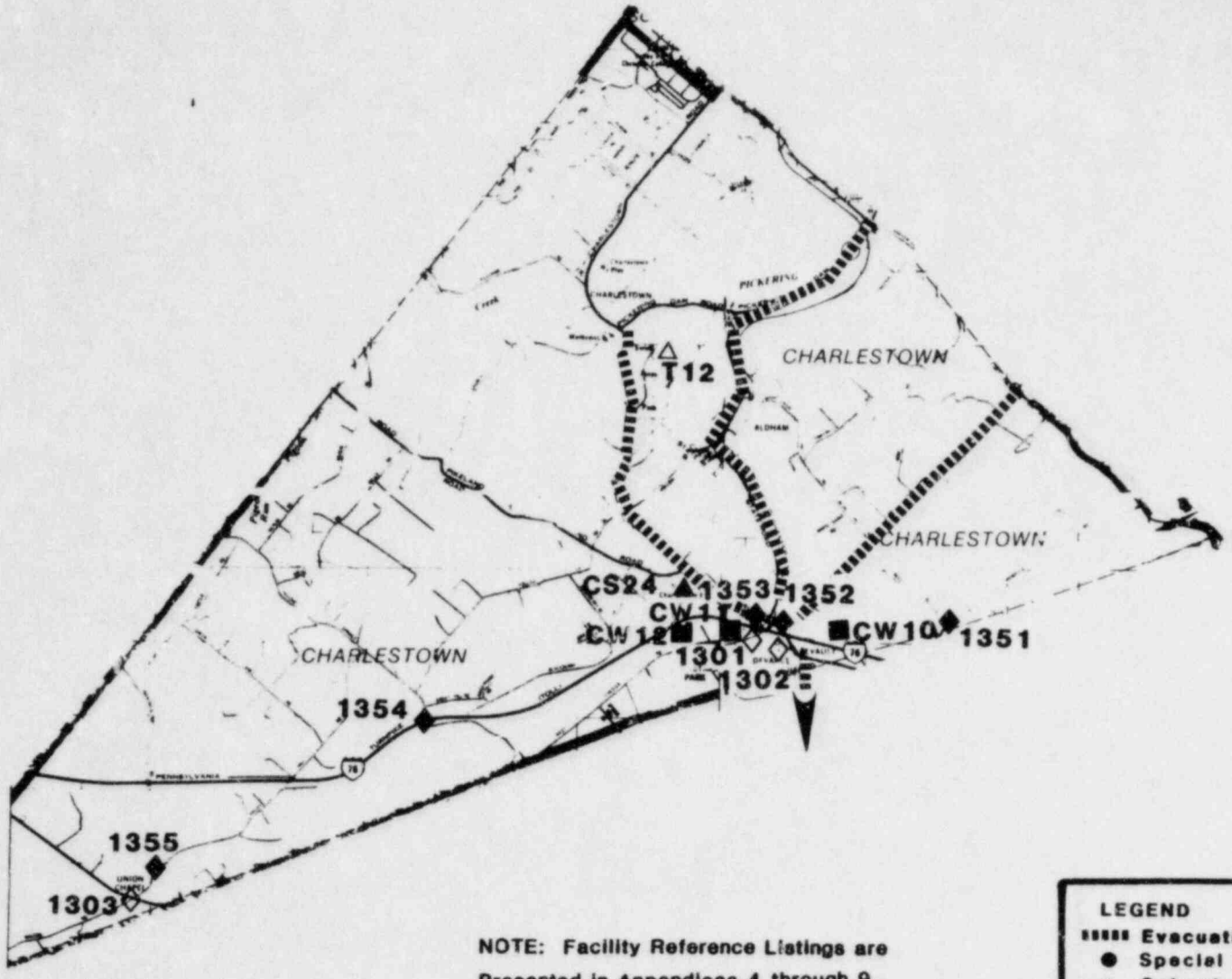


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

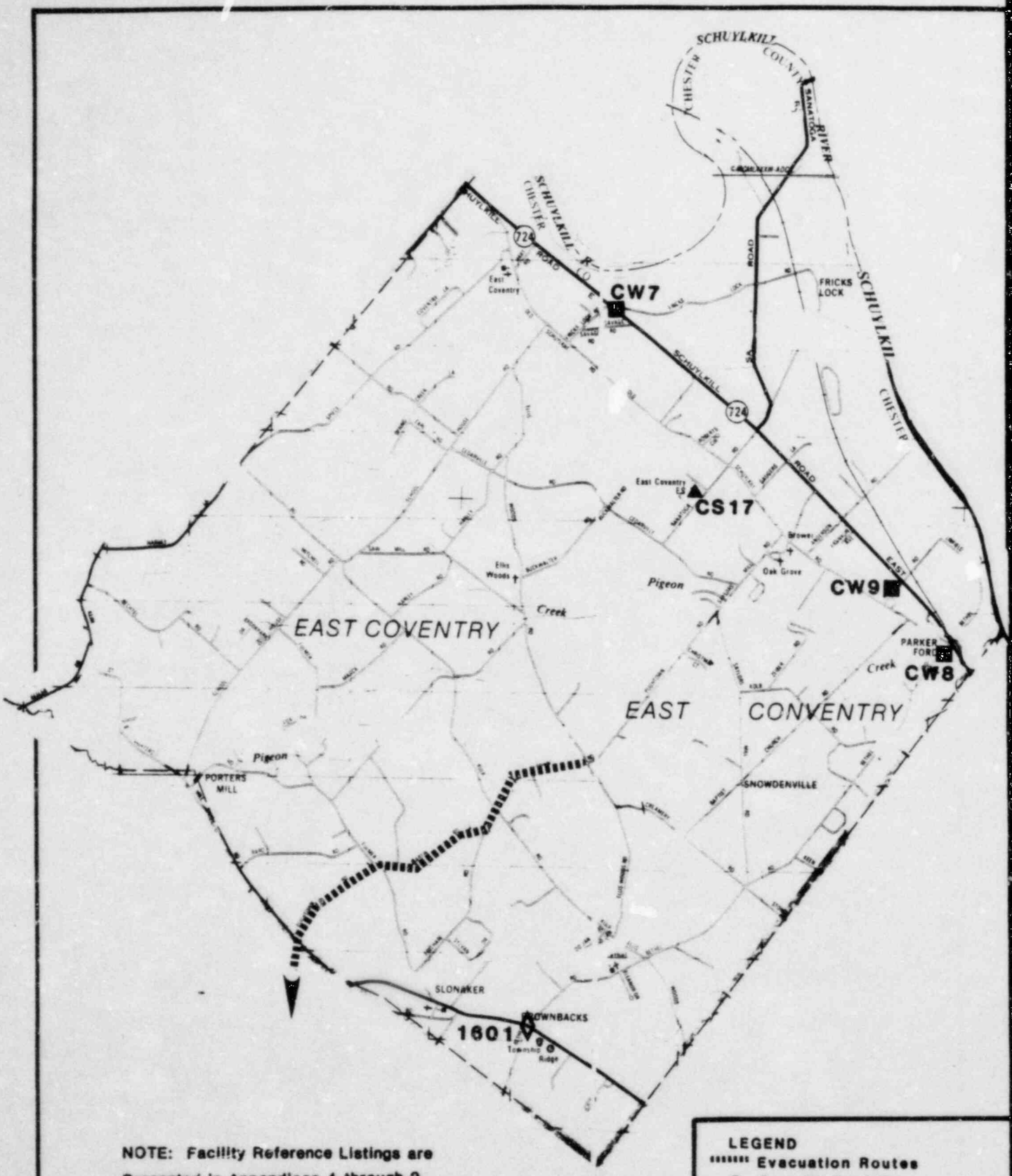
BERKS COUNTY: UNION TOWNSHIP



BERKS COUNTY: WASHINGTON TOWNSHIP



CHESTER COUNTY: CHARLESTOWN TOWNSHIP

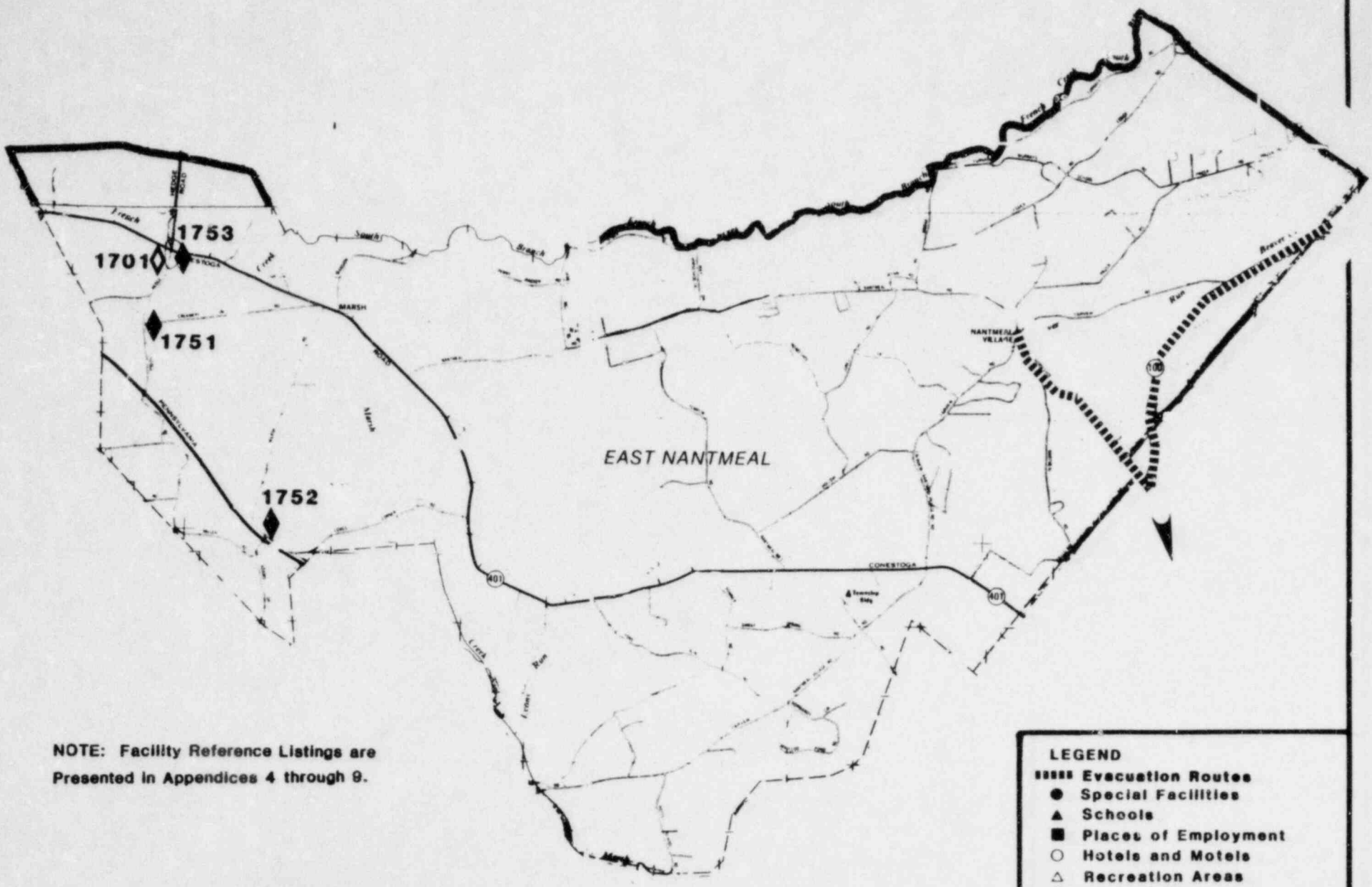


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND

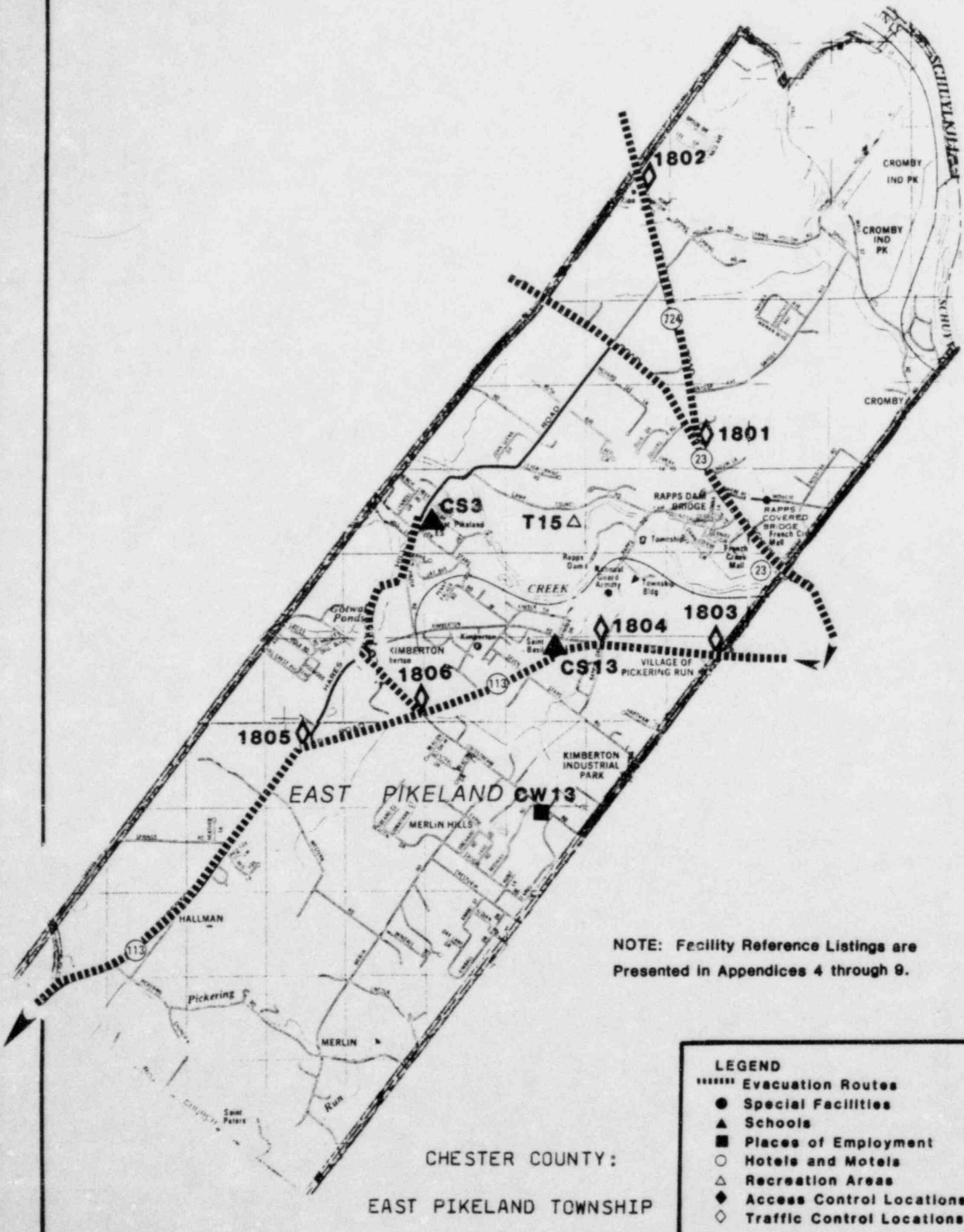
- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

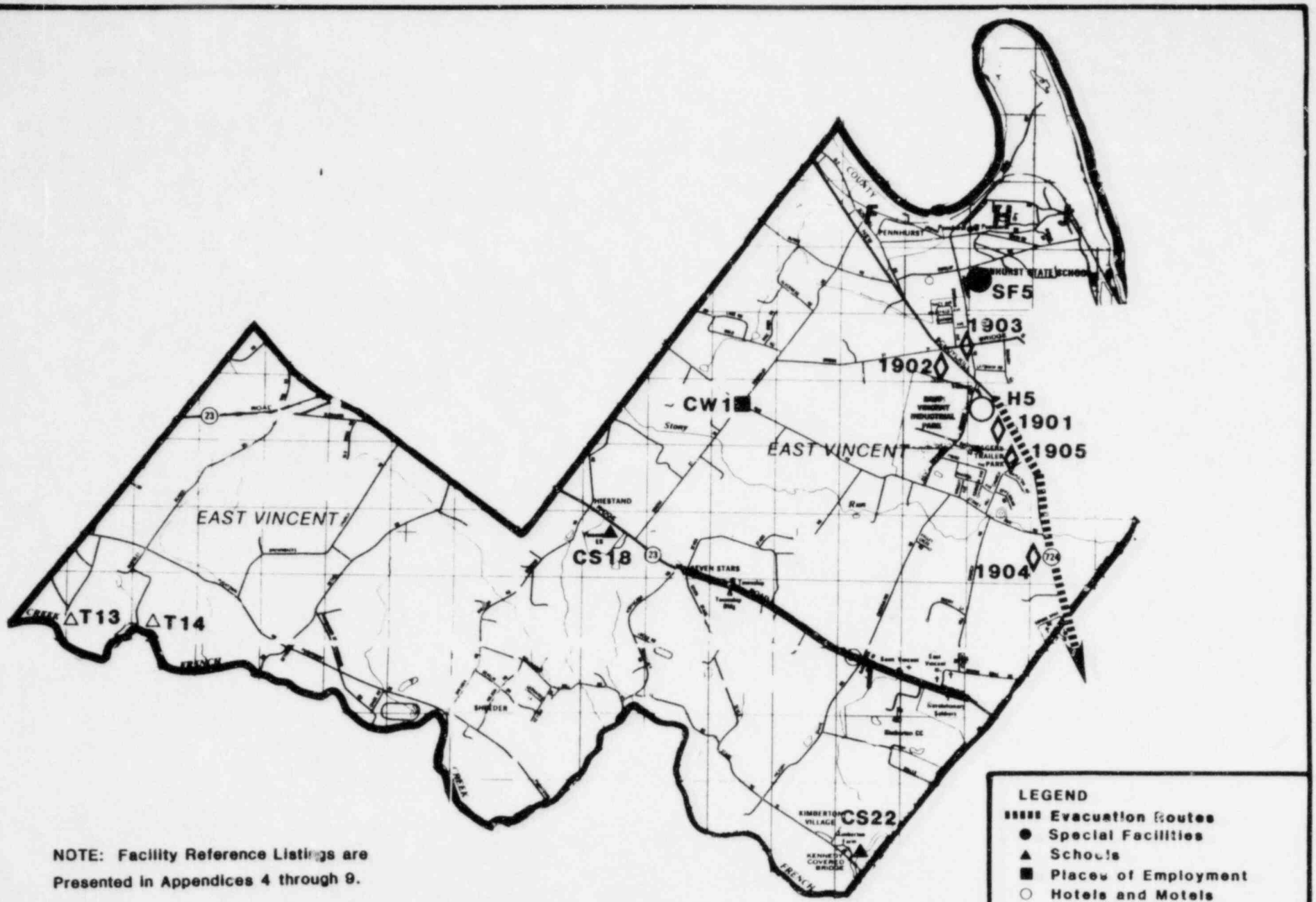
CHESTER COUNTY: EAST COVENTRY TOWNSHIP



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

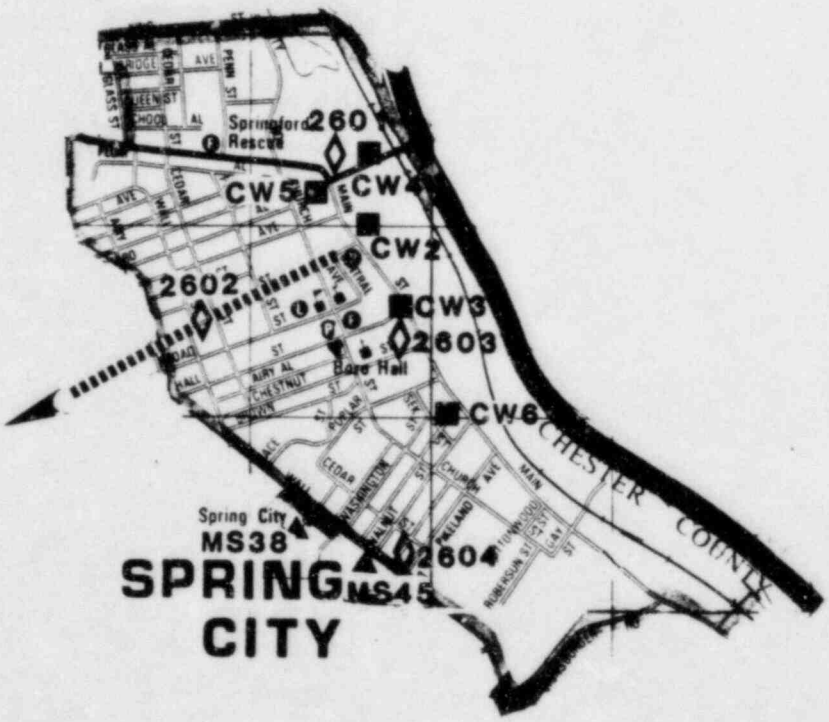
CHESTER COUNTY: EAST NANTMEAL TOWNSHIP


1802
1801
1803
1804
1805
1806
CS3
T15
CS13
CW13
CROMBY IND PK
CROMBY IND PK
CROMBY
RAPPS DAM BRIDGE
RAPPS COVERED BRIDGE
CREEK
KIMBERTON
VILLAGE OF PICKERING RUN
KIMBERTON INDUSTRIAL PARK
EAST PIKELAND
MERLIN HILLS
HALLMAN
Pickering
MERLIN
724
23
113
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations
CHESTER COUNTY:
EAST PIKELAND TOWNSHIP



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

CHESTER COUNTY: EAST VINCENT TOWNSHIP

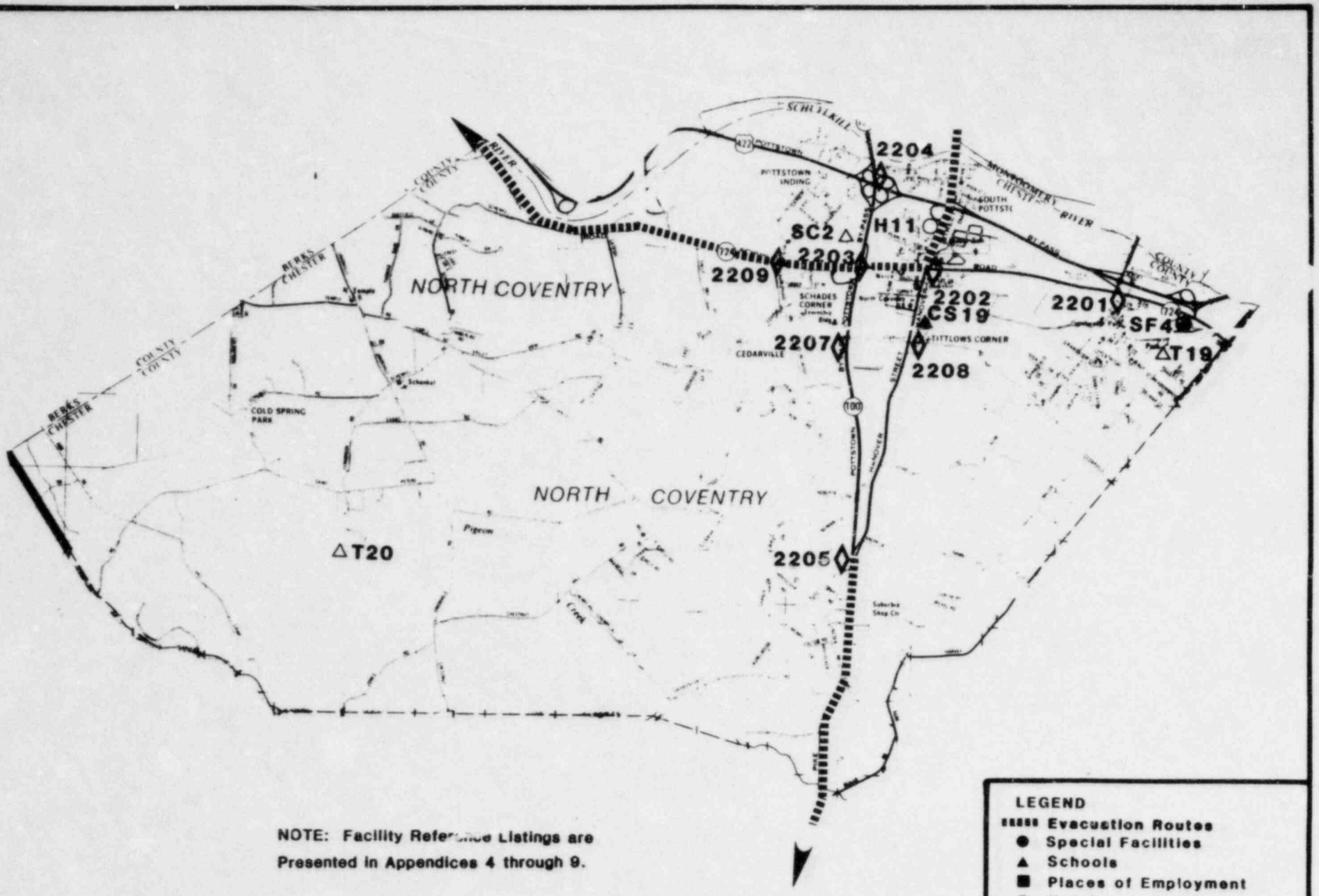


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND
- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

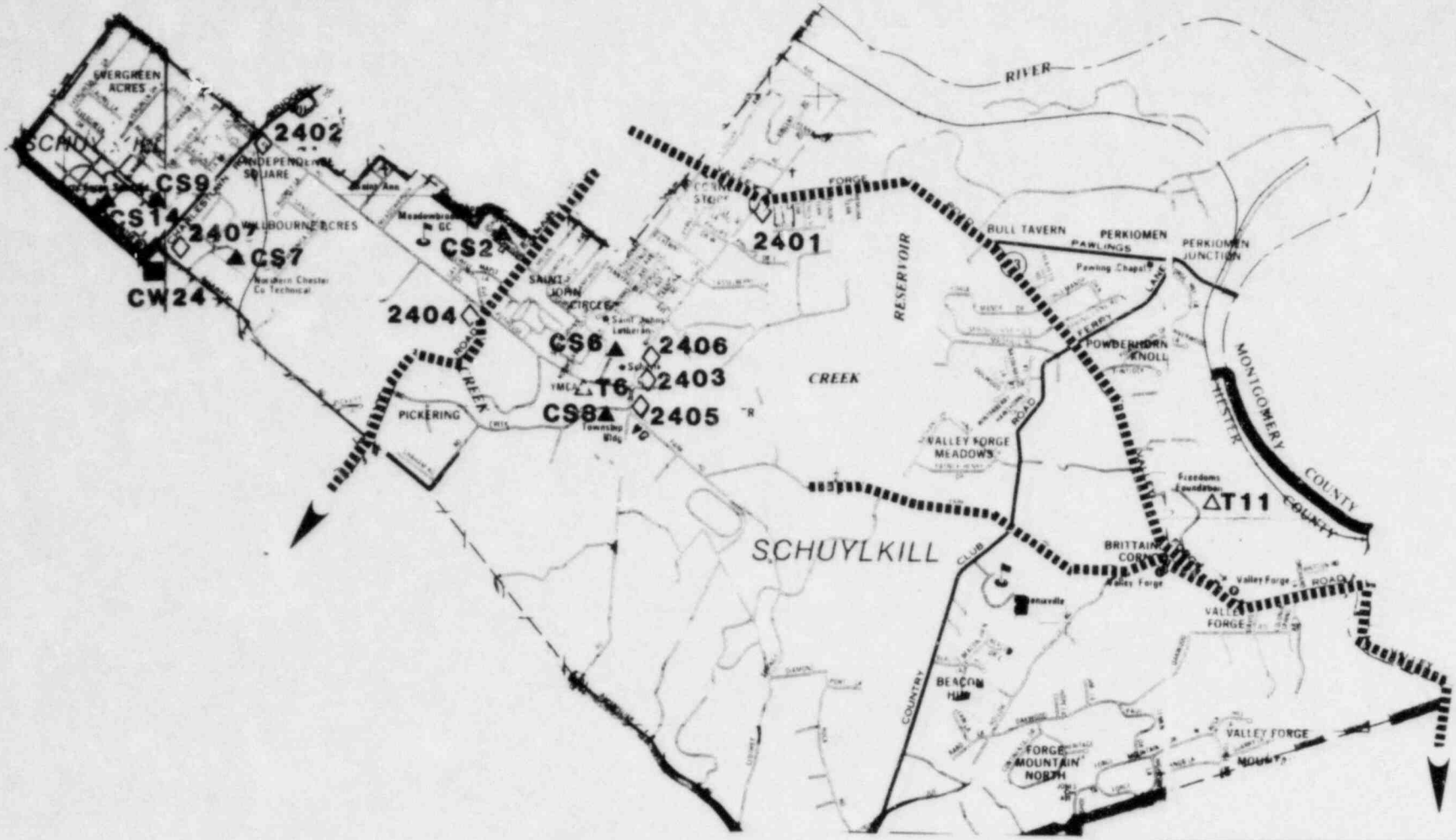
CHESTER COUNTY: SPRING CITY BOROUGH

Rev. 1 5/24/8



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

CHESTER COUNTY: NORTH COVENTRY TOWNSHIP

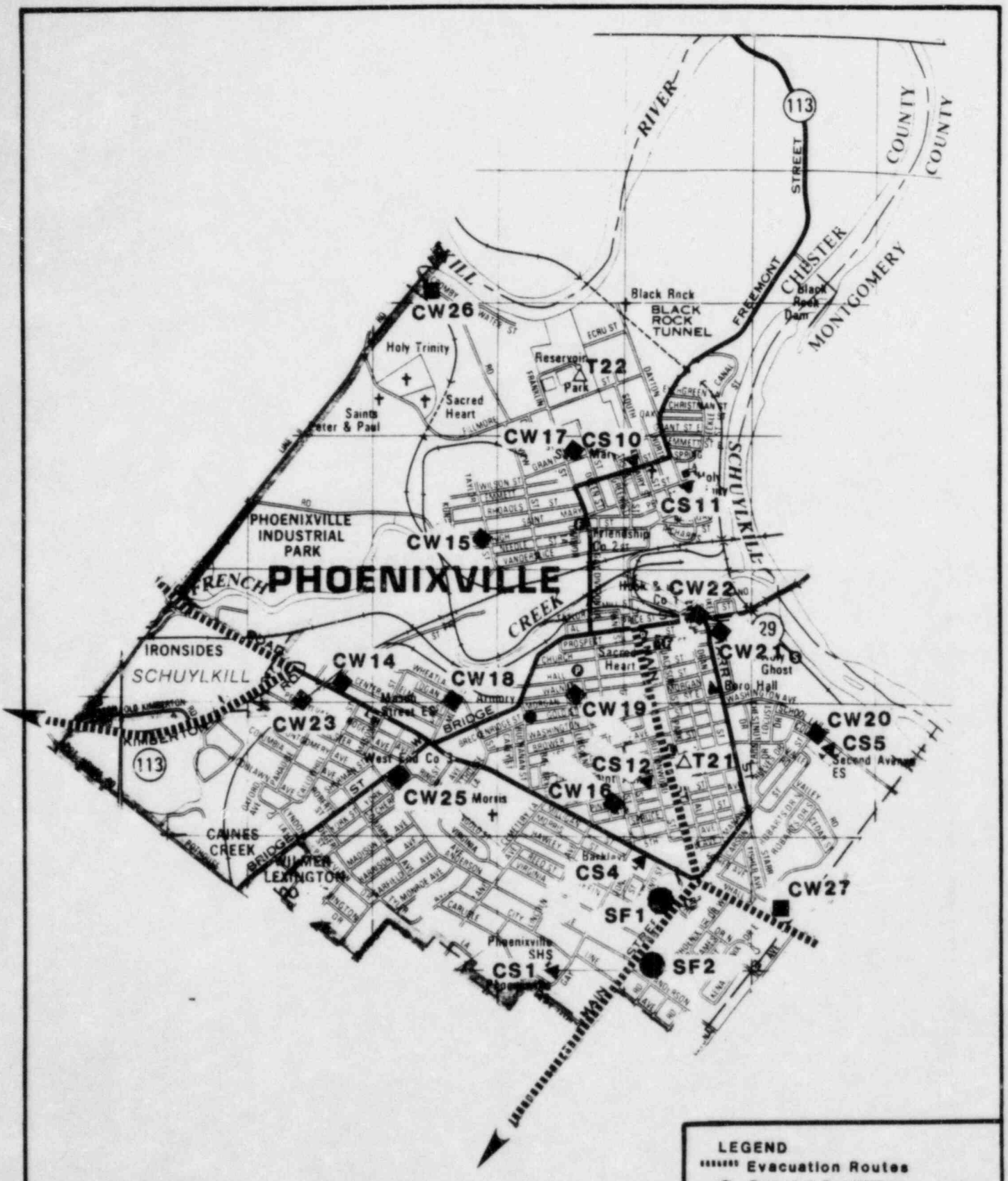


LEGEND

- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

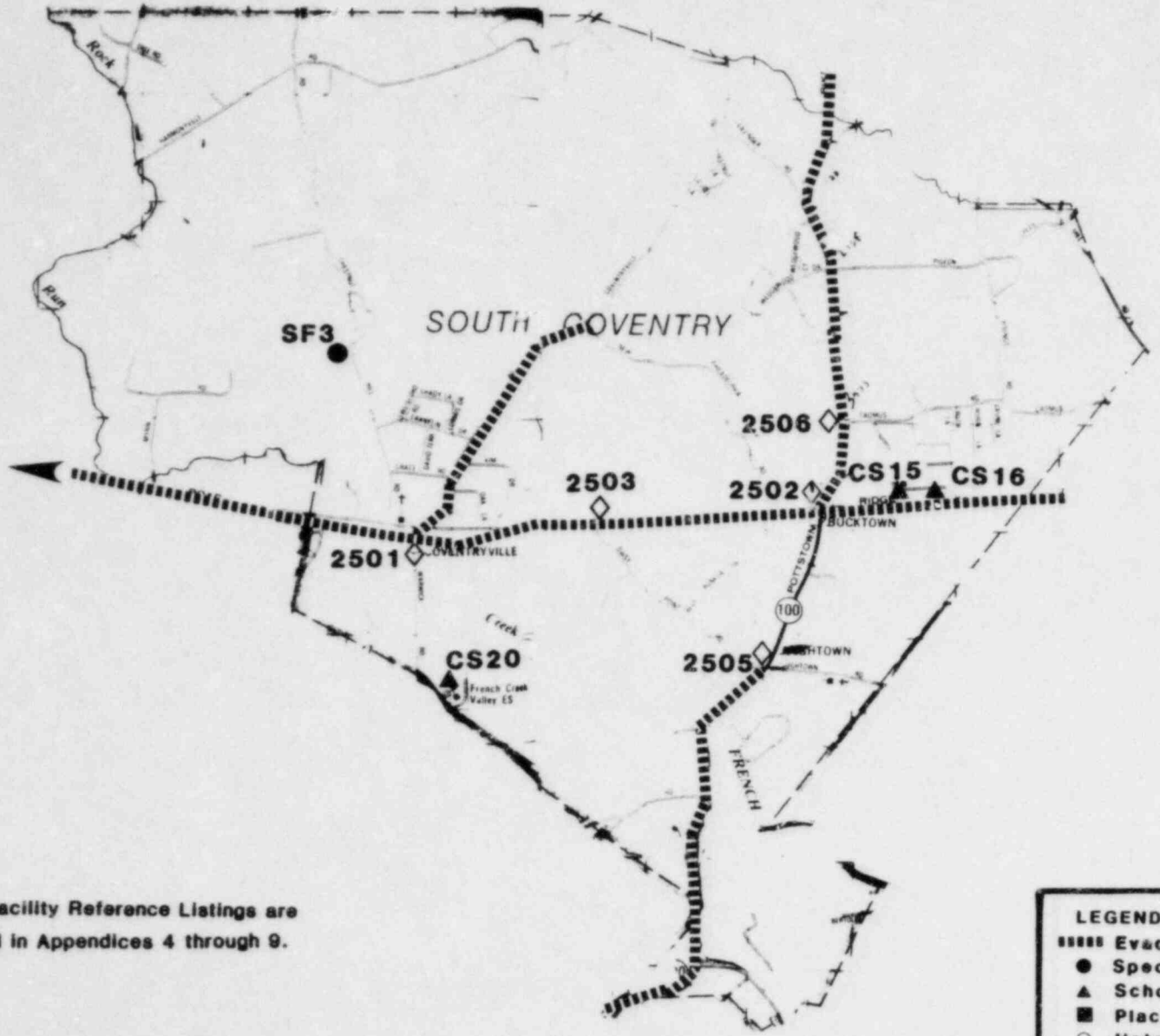
CHESTER COUNTY: SCHUYLKILL TOWNSHIP



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

CHESTER COUNTY: PHOENIXVILLE BOROUGH

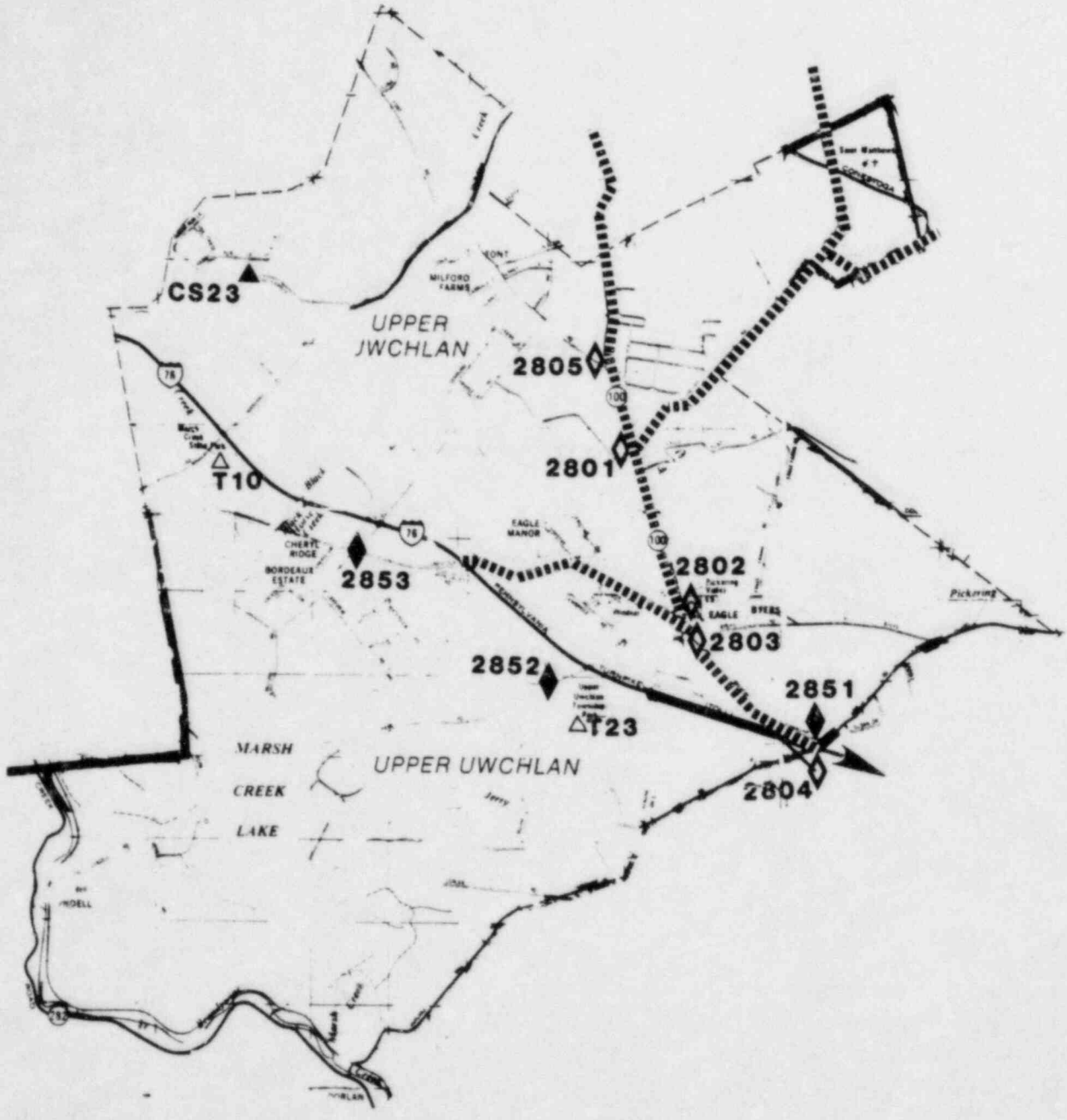
Rev. 1 5/24/84



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND
- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

CHESTER COUNTY: SOUTH COVENTRY TOWNSHIP

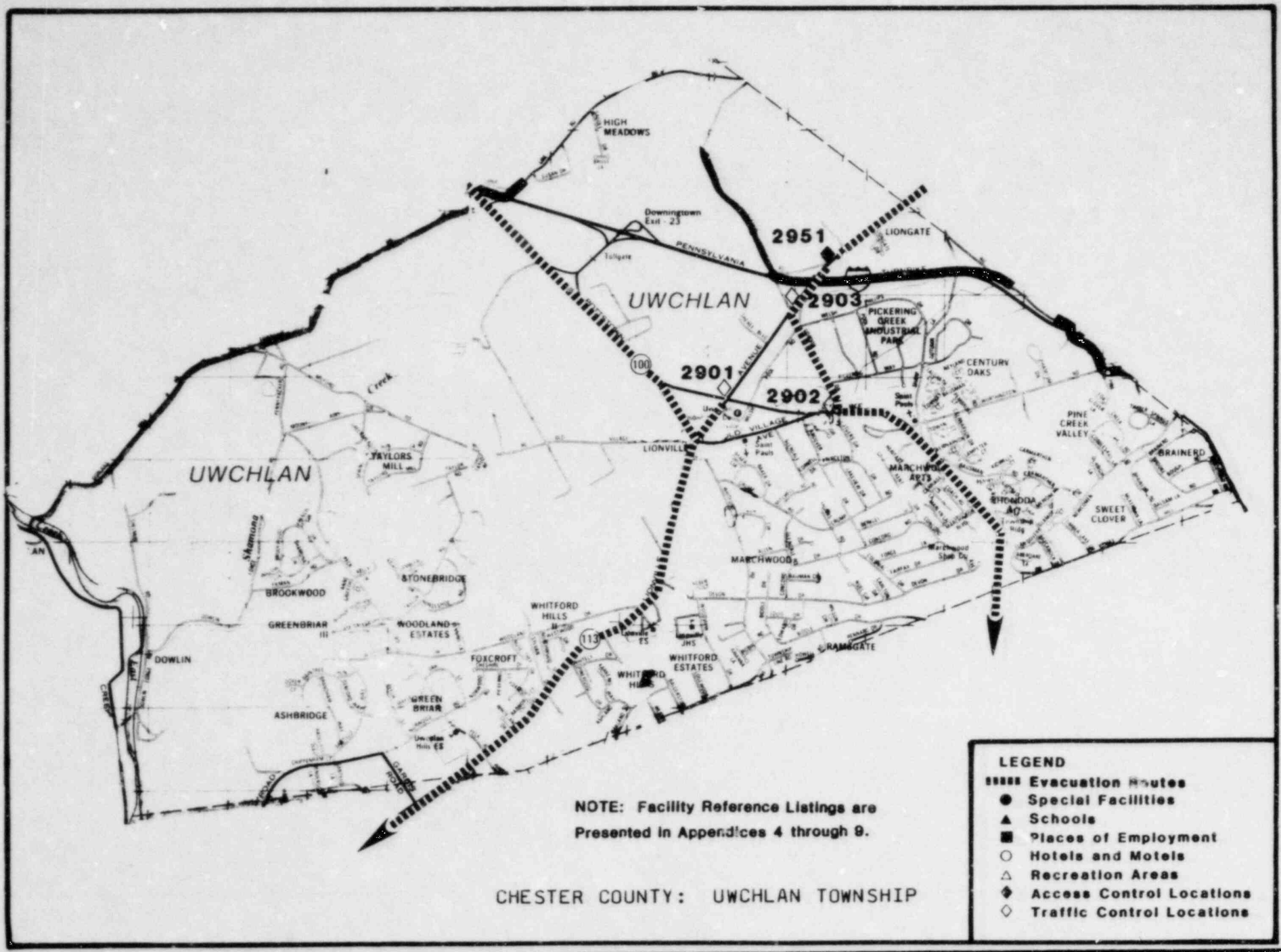


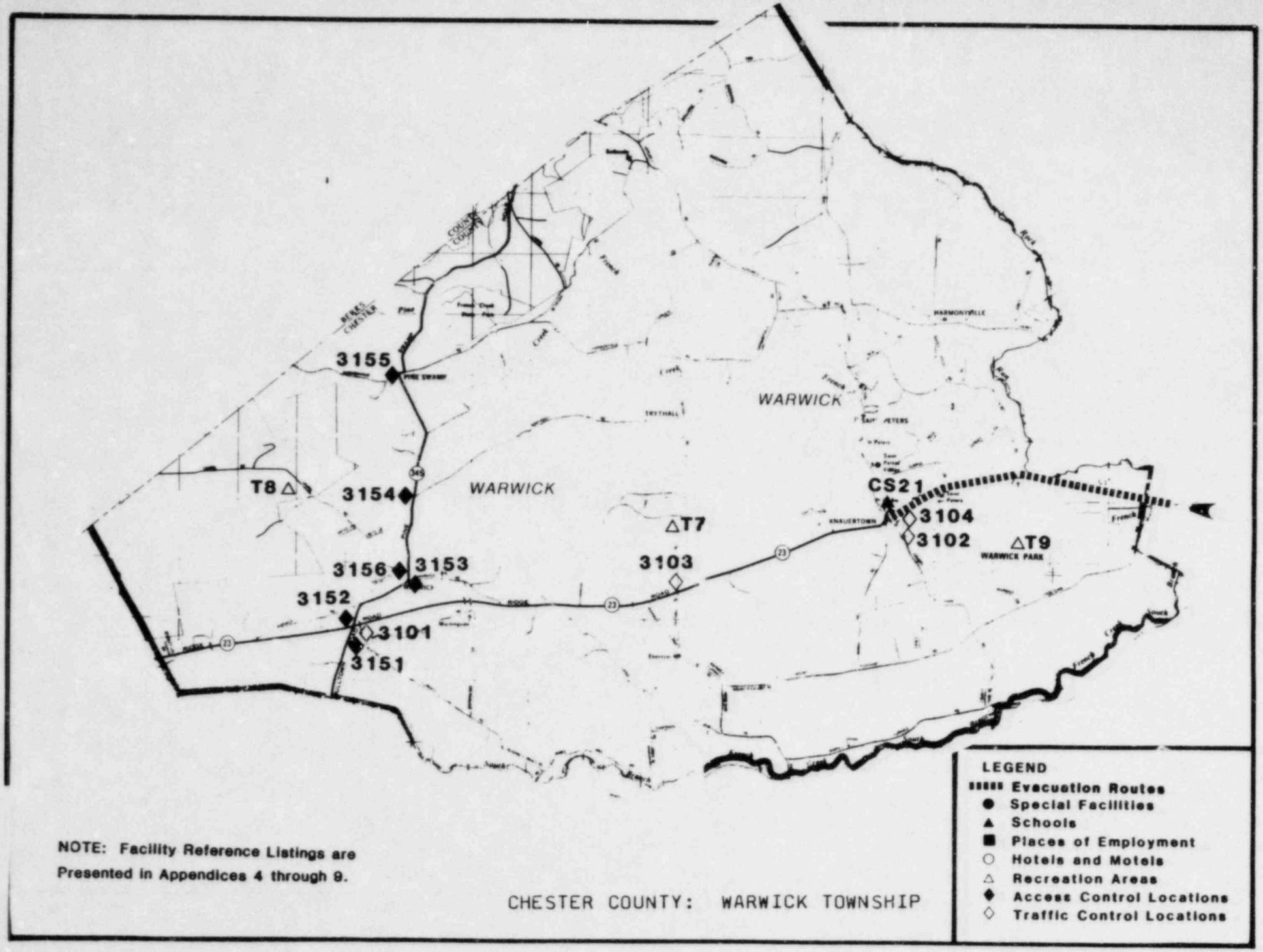
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND

- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

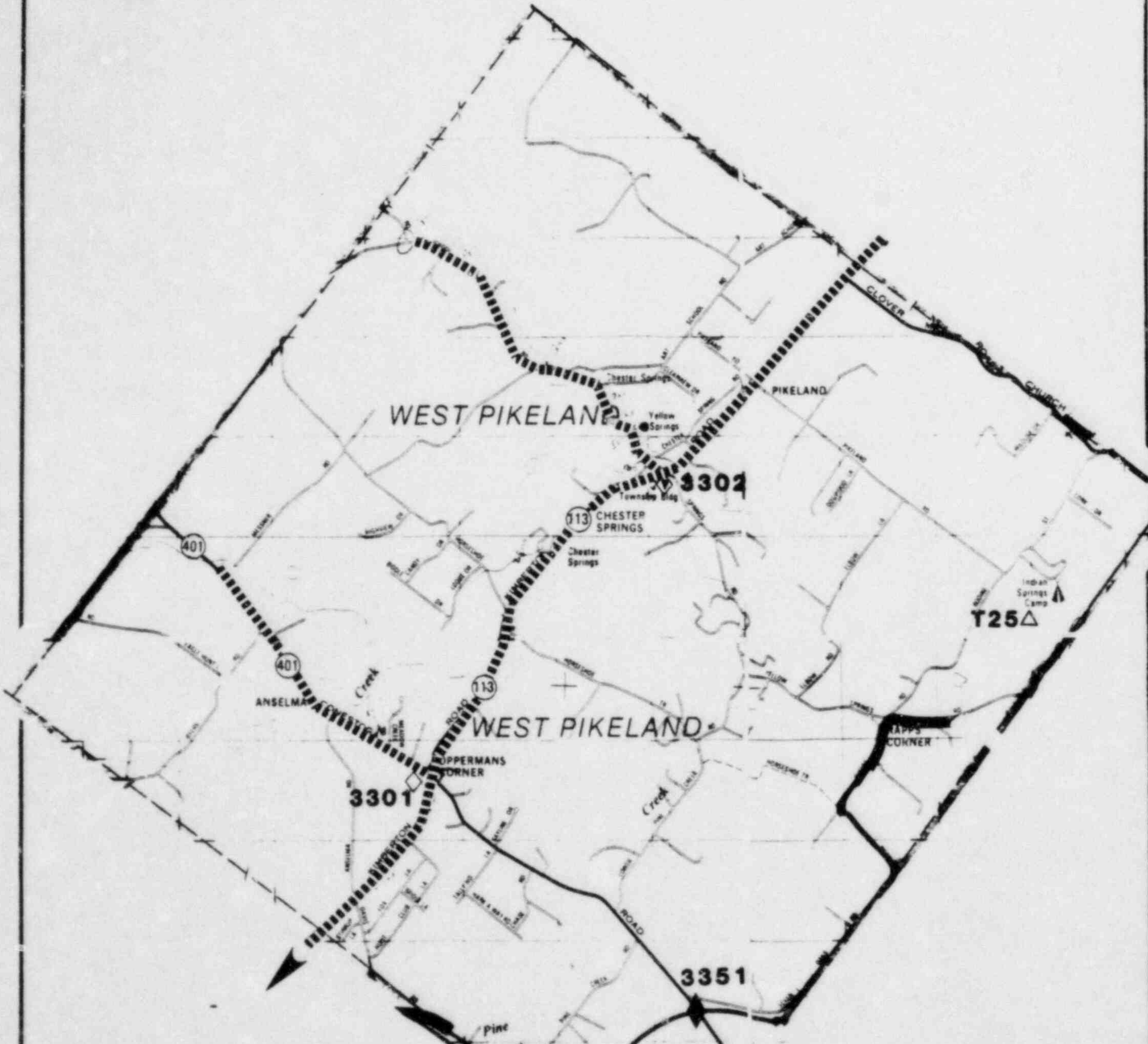
CHESTER COUNTY: UPPER UWCHLAN TOWNSHIP


HIGH MEADOWS
Downingtown Exit - 23
Tollgate
PENNSYLVANIA
2951
LIONGATE
UWCHLAN
2903
PICKERING CREEK INDUSTRIAL PARK
100
2901
AVENUE
2902
CENTURY OAKS
PINE CREEK VALLEY
BRAINERD
LIONVILLE
TAYLORS MILL
UWCHLAN
MARCHWOOD ARTS
RHONDDA AD
SWEET CLOVER
MARCHWOOD
STONEBRIDGE
BROOKWOOD
WHITFORD HILLS
GREENBRIAR III
WOODLAND ESTATES
113
ES
JHS
CRAMGATE
DOWLIN
FOXCROFT
WHITFORD ESTATES
GREEN BRIAR
ASHBRIDGE
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
CHESTER COUNTY: UWCHLAN TOWNSHIP



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

CHESTER COUNTY: WARWICK TOWNSHIP

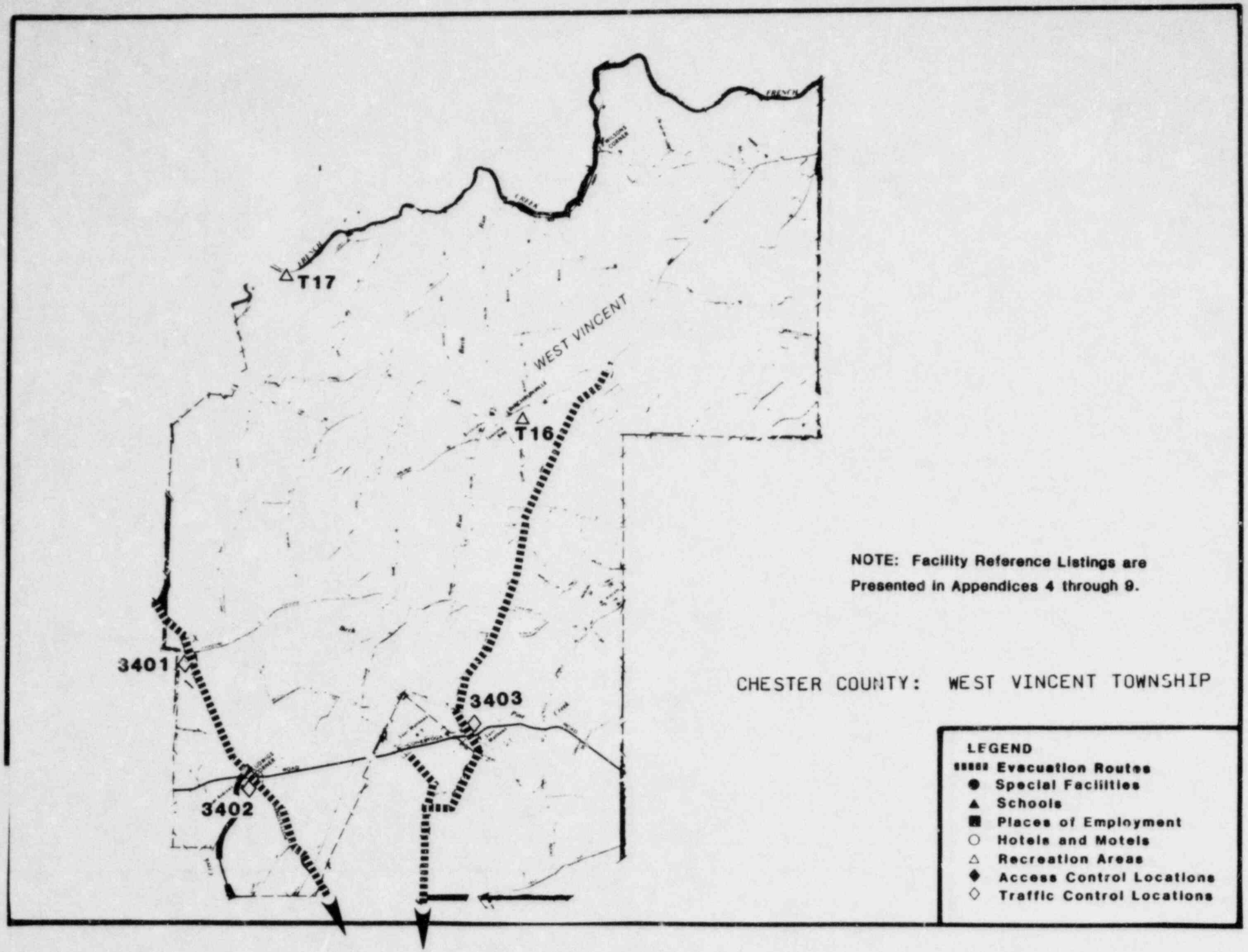


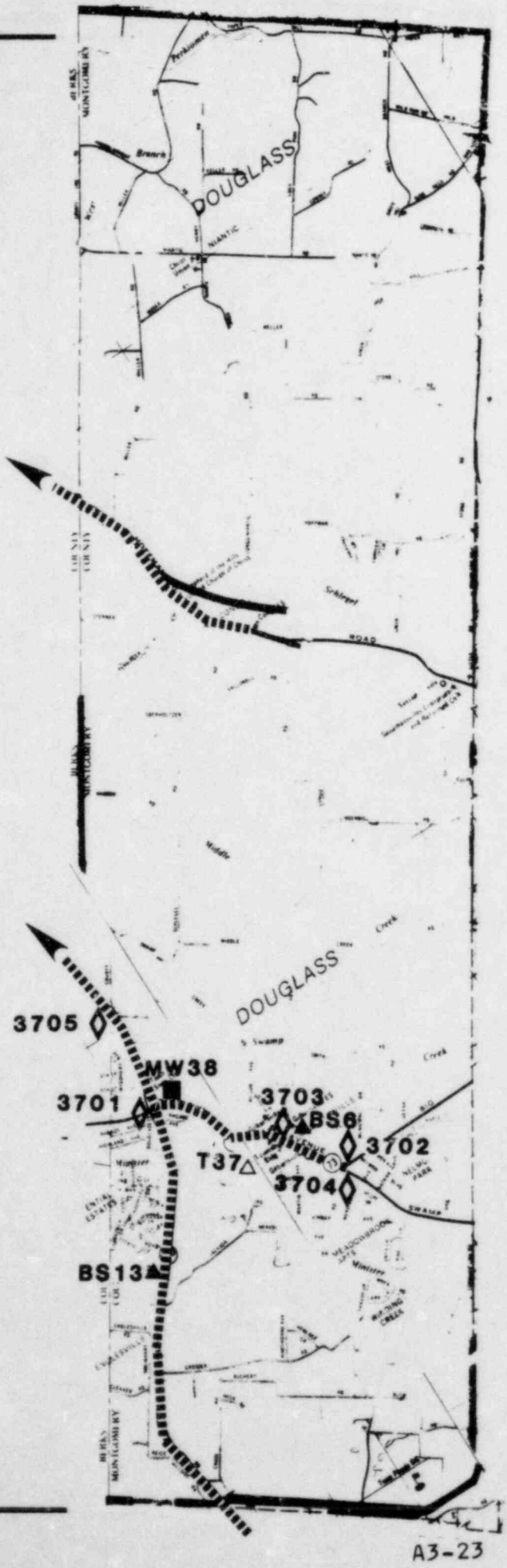
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

CHESTER COUNTY: WEST PIKELAND TOWNSHIP

LEGEND

- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations


T17
WEST VINCENT
T16
3401
3403
3402
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
CHESTER COUNTY: WEST VINCENT TOWNSHIP
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations



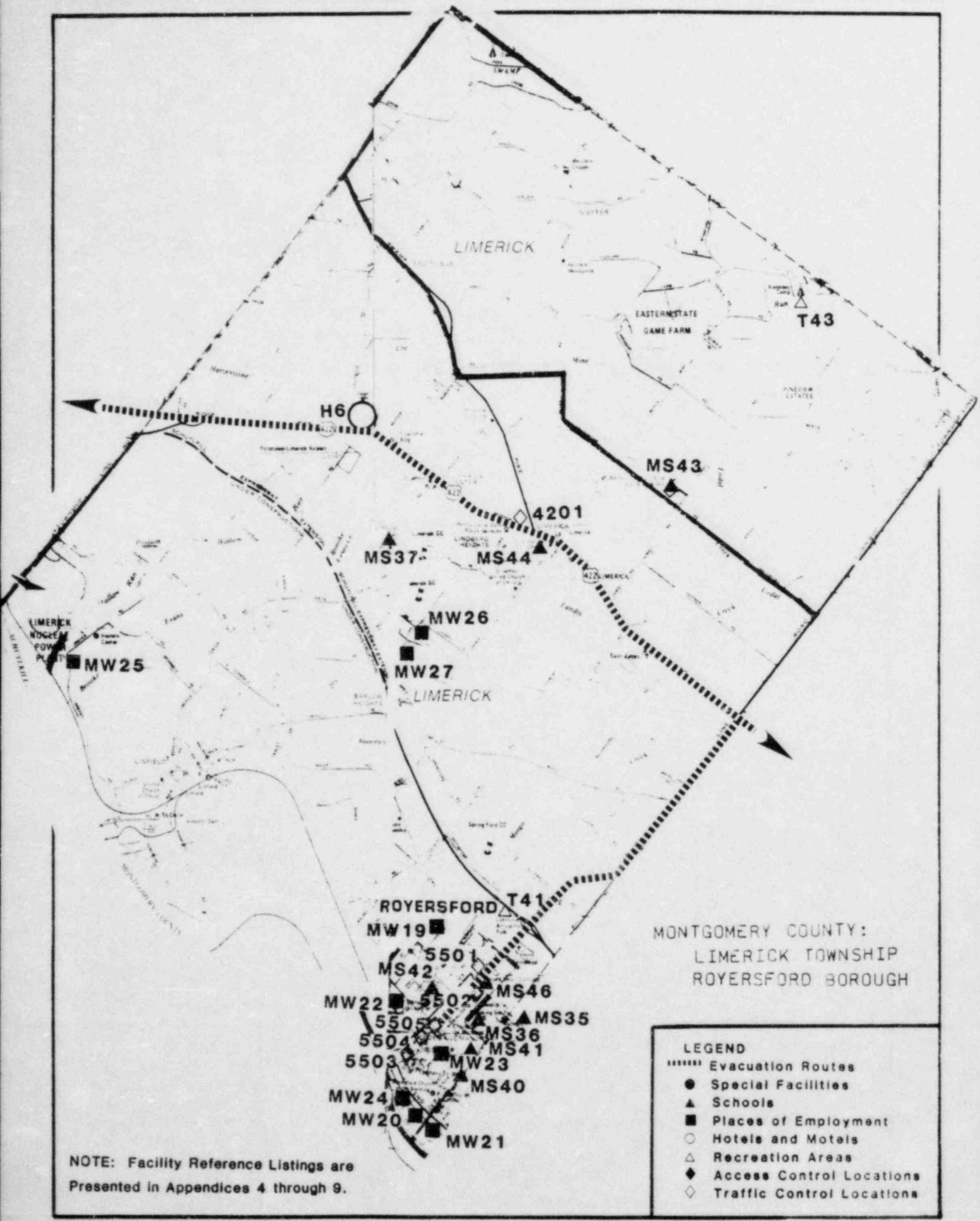
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

MONTGOMERY COUNTY:

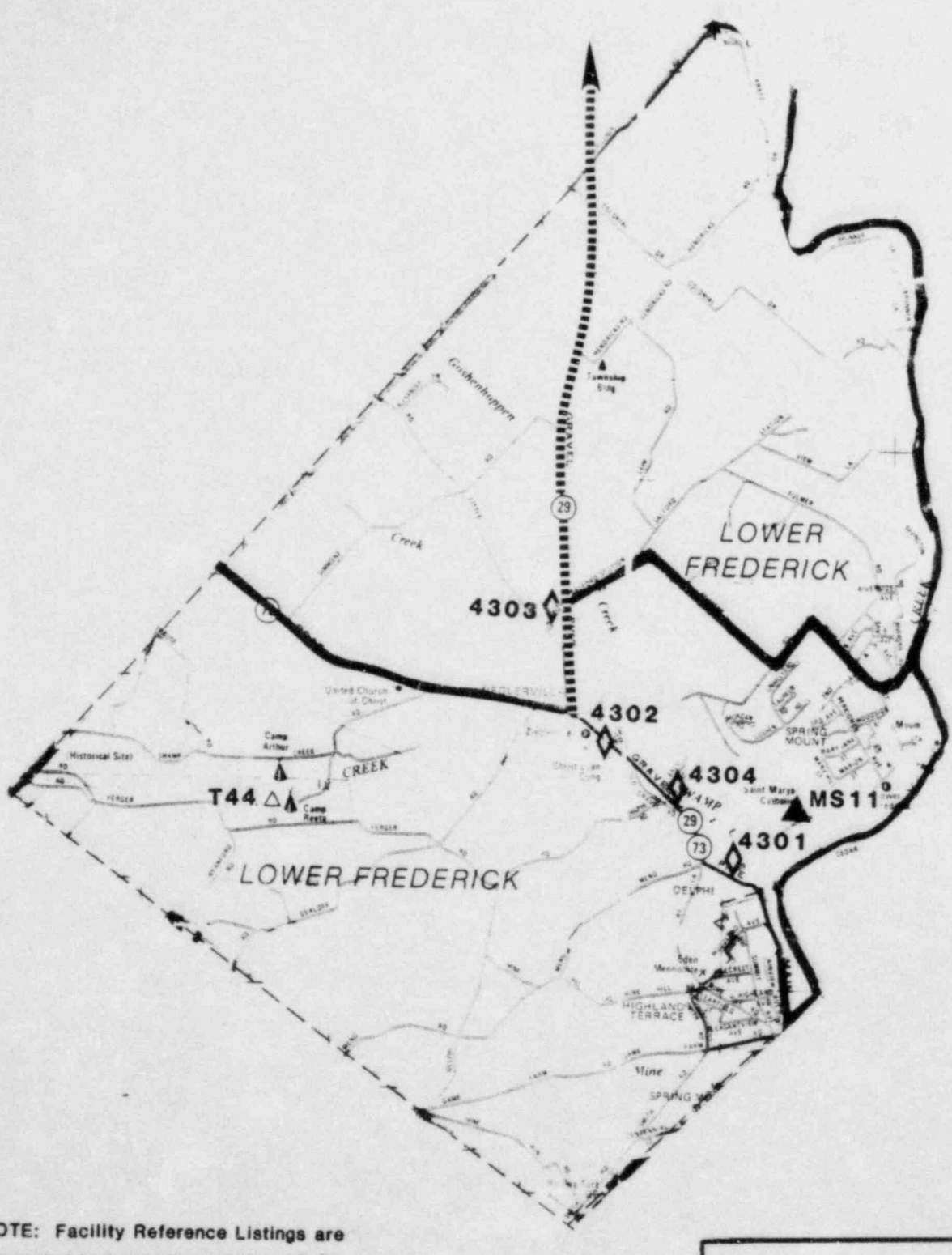
DOUGLASS TOWNSHIP

LEGEND
- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

Rev. 1 5/24/


LIMERICK
EASTERN STATE GAME FARM
T43
H6
MS43
4201
MS37
MS44
MW26
MW25
MW27
LIMERICK
LIMERICK NUCLEAR POWER PLANT
ROYERSFORD
T41
MW19
5501
MS42
MS46
MW22
5502
MS35
5505
MS36
5504
MS41
5503
MW23
MS40
MW24
MW20
MW21
MONTGOMERY COUNTY:
LIMERICK TOWNSHIP
ROYERSFORD BOROUGH
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

Rev. 1 5/24/84

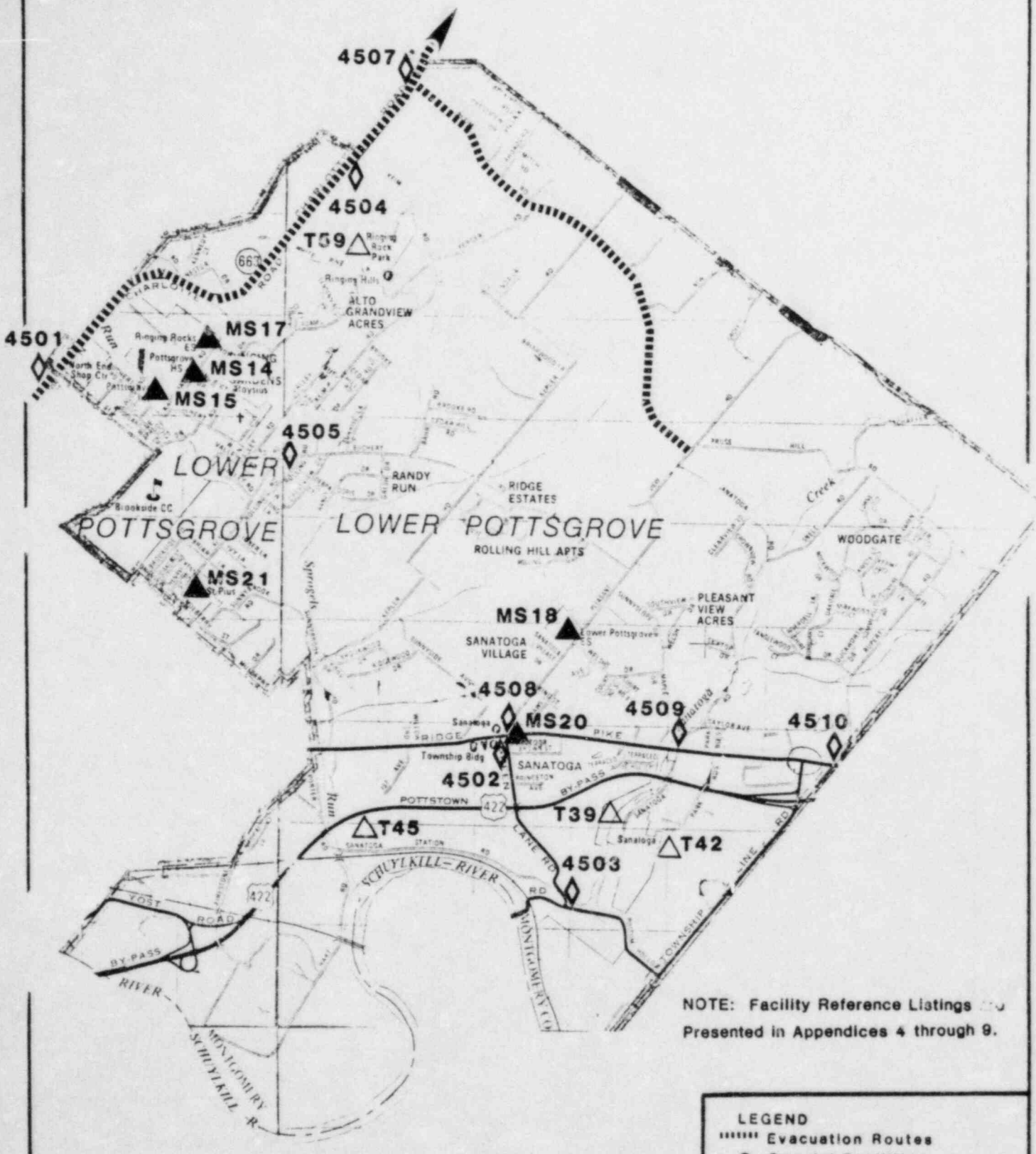


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND

- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

MONTGOMERY COUNTY: LOWER FREDERICK TOWNSHIP



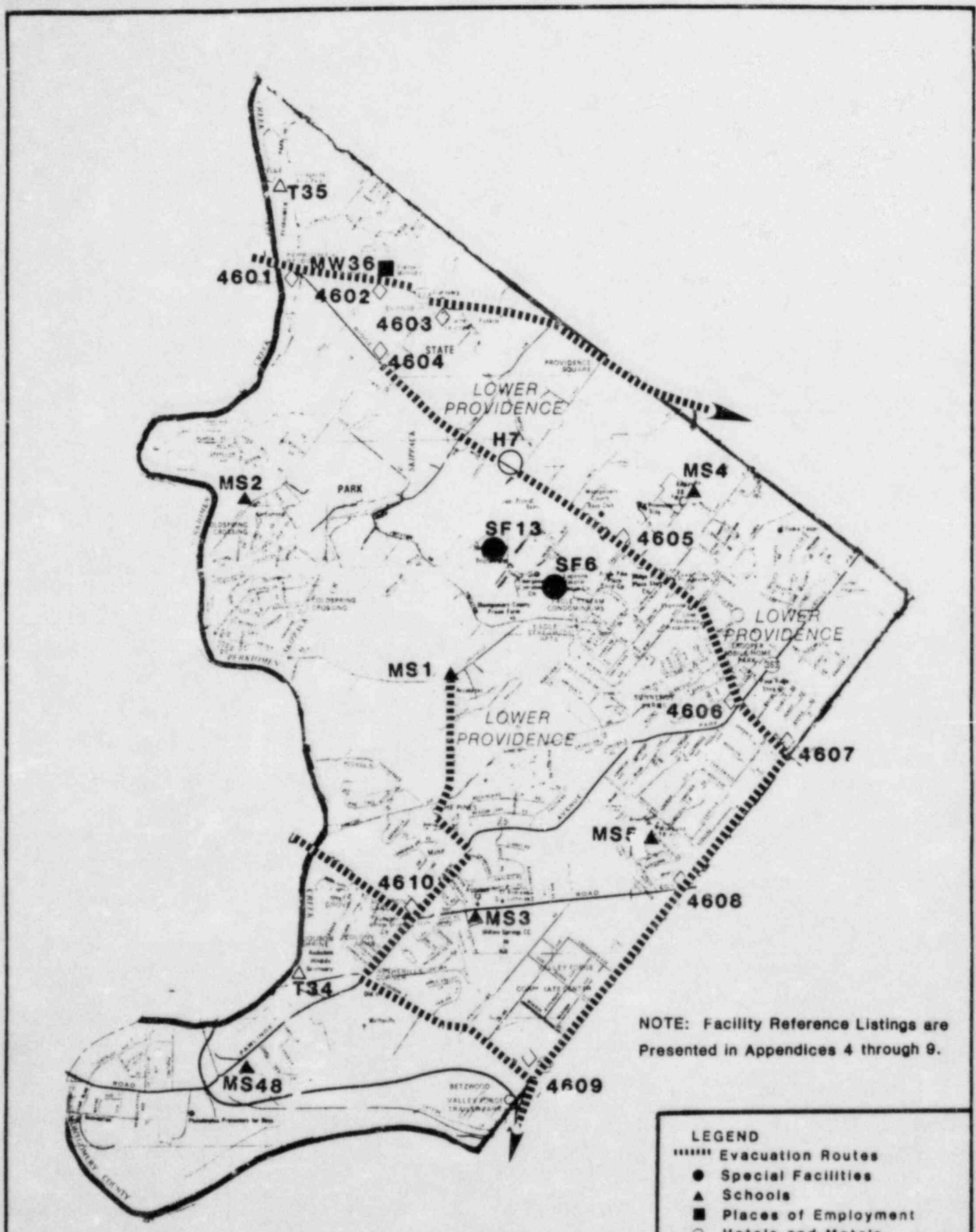
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

LEGEND

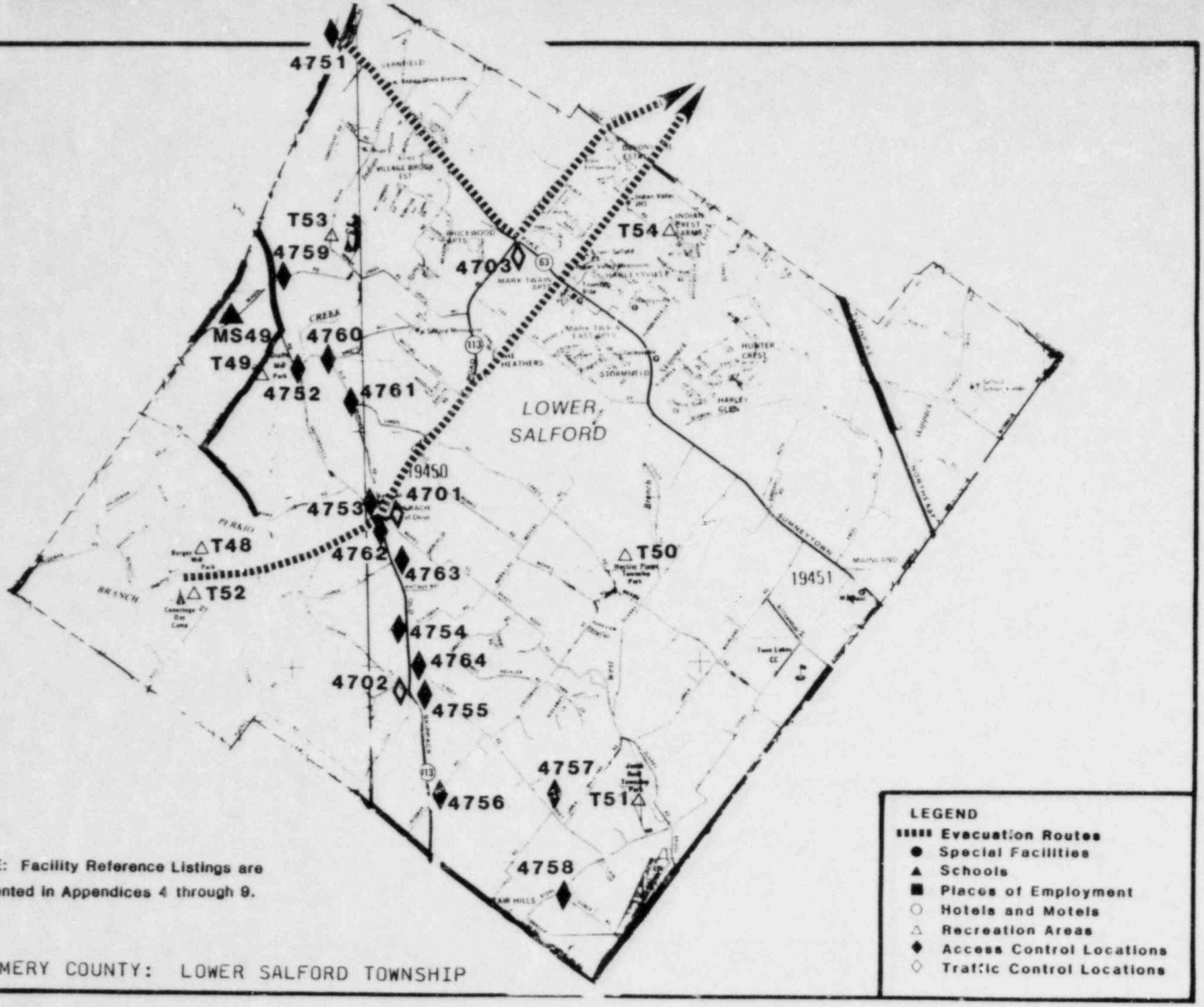
- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

MONTGOMERY COUNTY: LOWER POTTSGROVE TOWNSHIP

Rev. 1 5/24/84

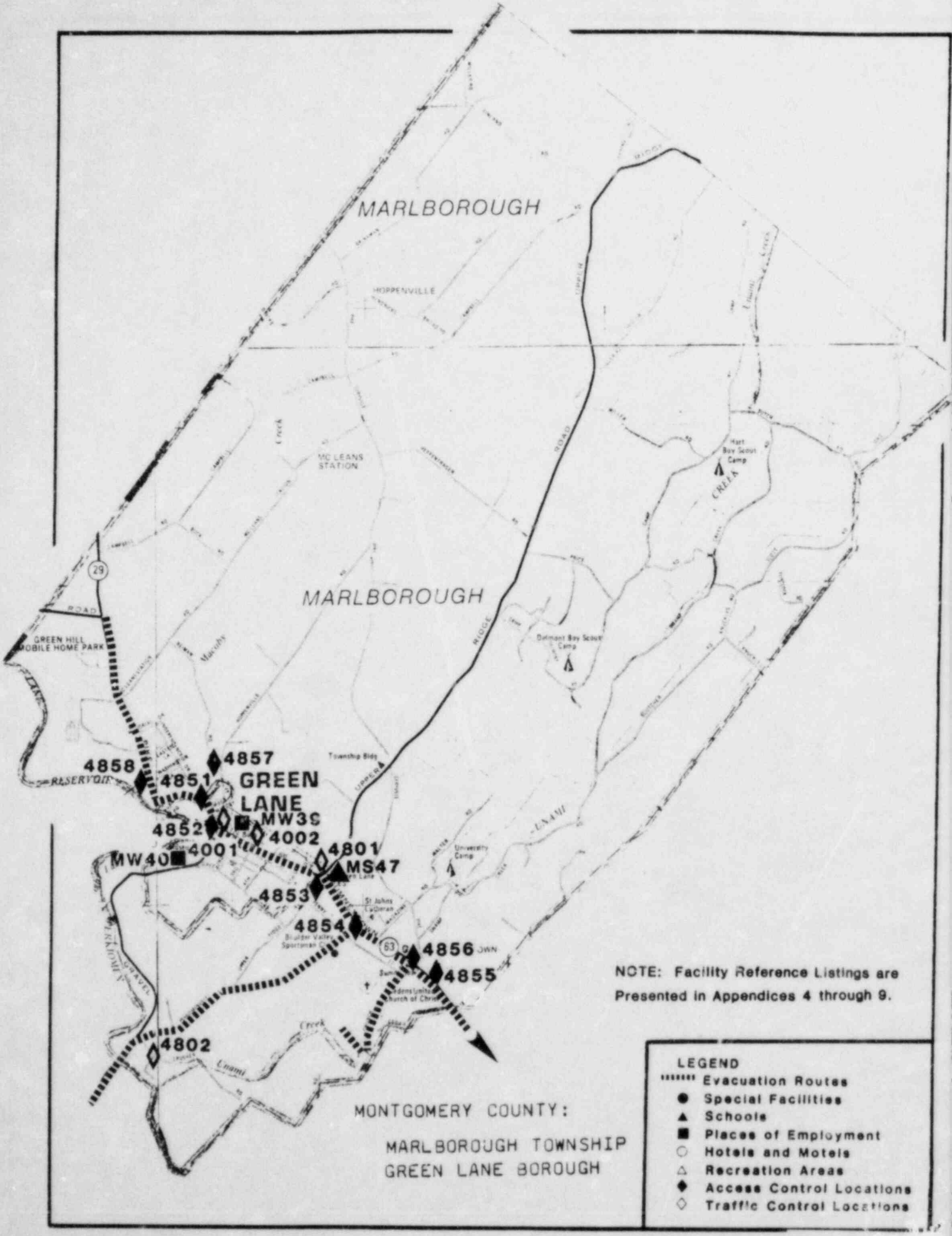


MONTGOMERY COUNTY: LOWER PROVIDENCE TOWNSHIP

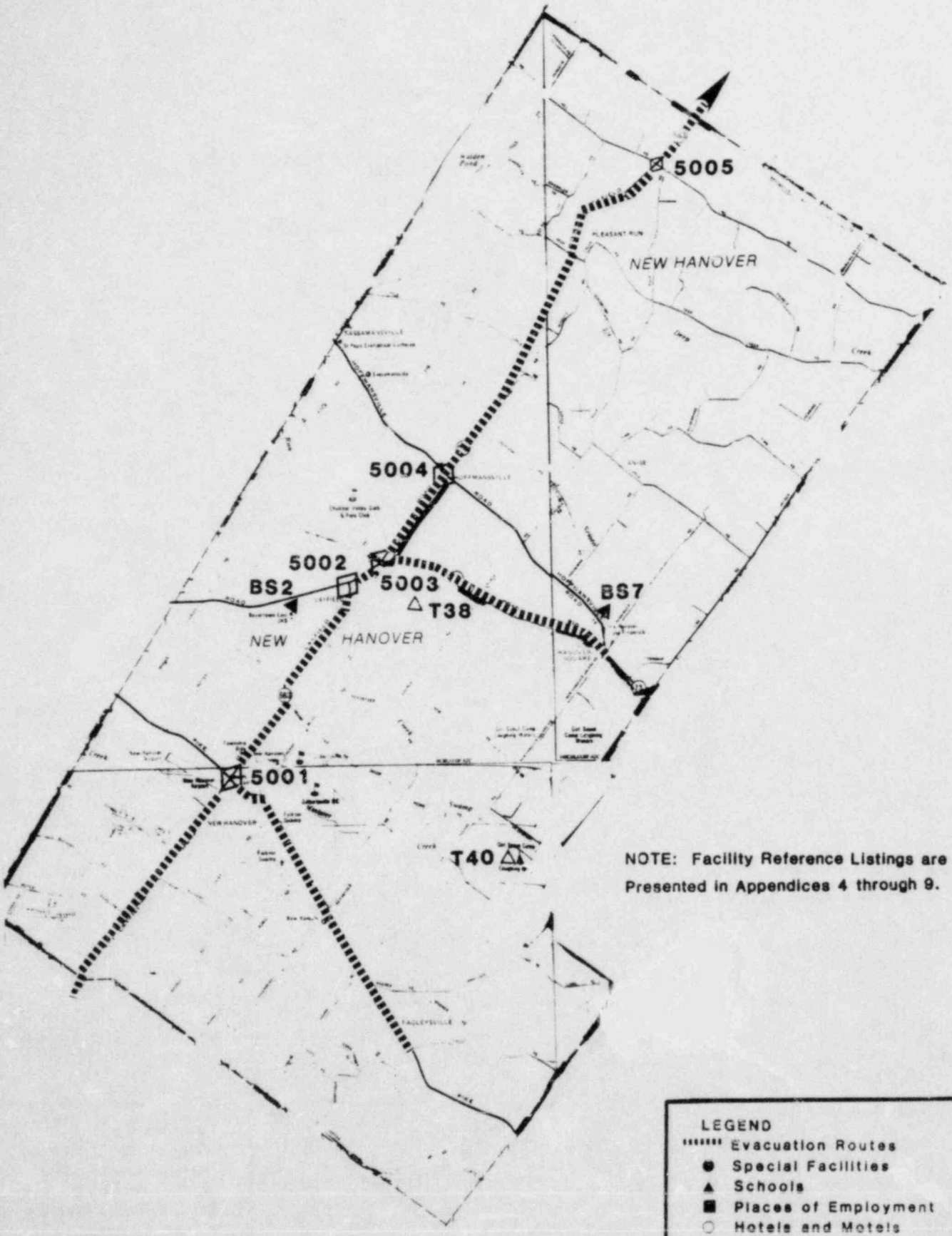


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

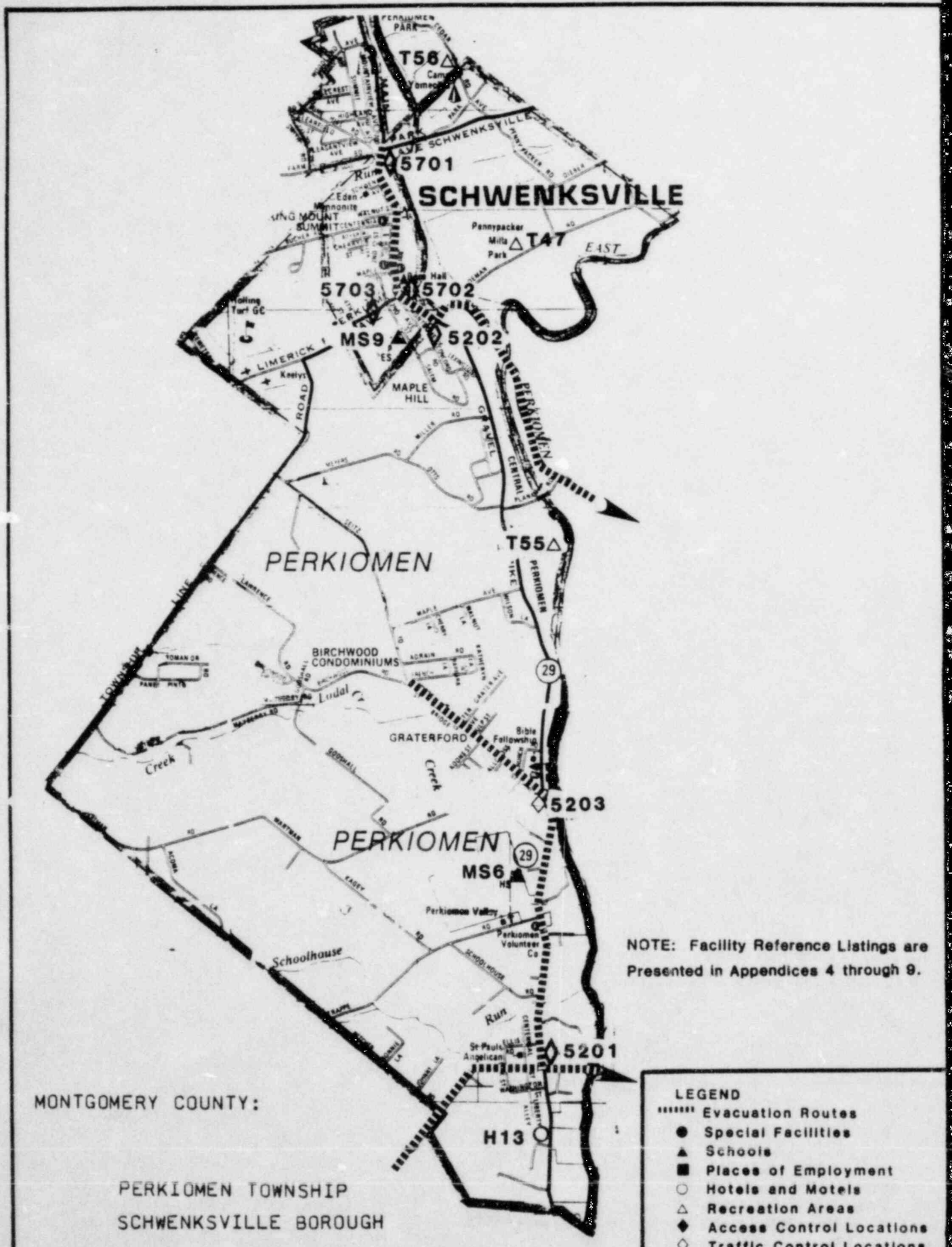
MONTGOMERY COUNTY: LOWER SALFORD TOWNSHIP


MARLBOROUGH
HOPPENVILLE
MC LEANS STATION
MARLBOROUGH
GREEN HILL MOBILE HOME PARK
4858
4857
4851
GREEN LANE
MW39
4852
4002
MW40
4001
4801
MS47
4853
4854
4856
4855
4802
MONTGOMERY COUNTY:
MARLBOROUGH TOWNSHIP
GREEN LANE BOROUGH
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations

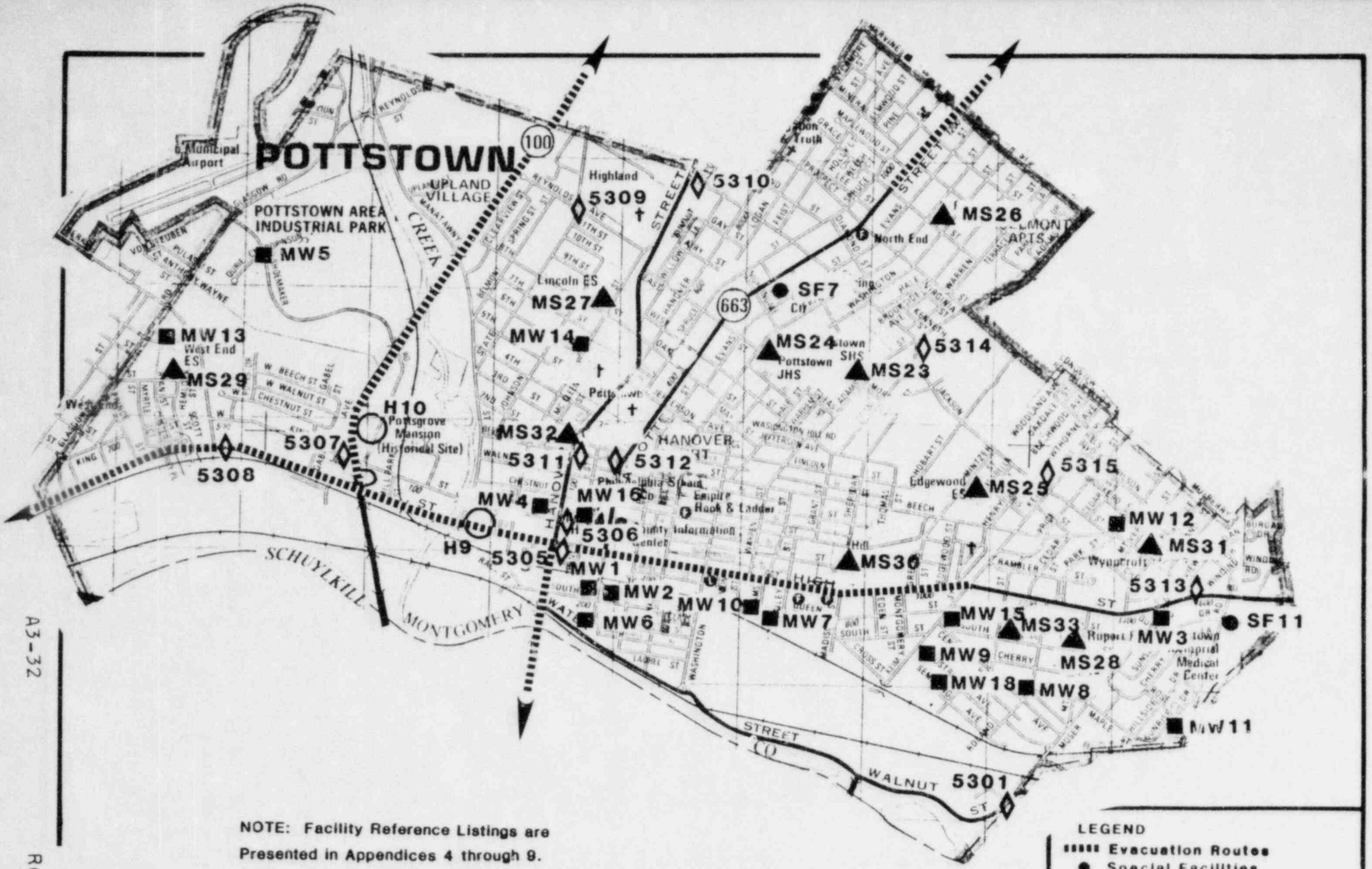
Rev. 1 5/24/3



MONTGOMERY COUNTY: NEW HANOVER TOWNSHIP


T56△
5701
SCHWENKSVILLE
T47△
EAST
5703
5702
MS9▲
5202
MAPLE HILL
T55△
PERKIOMEN
BIRCHWOOD CONDOMINIUMS
GRATERFORD
5203
PERKIOMEN
MS6▲
5201
H13○
MONTGOMERY COUNTY:
PERKIOMEN TOWNSHIP
SCHWENKSVILLE BOROUGH
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations

Rev. 1 5/24/

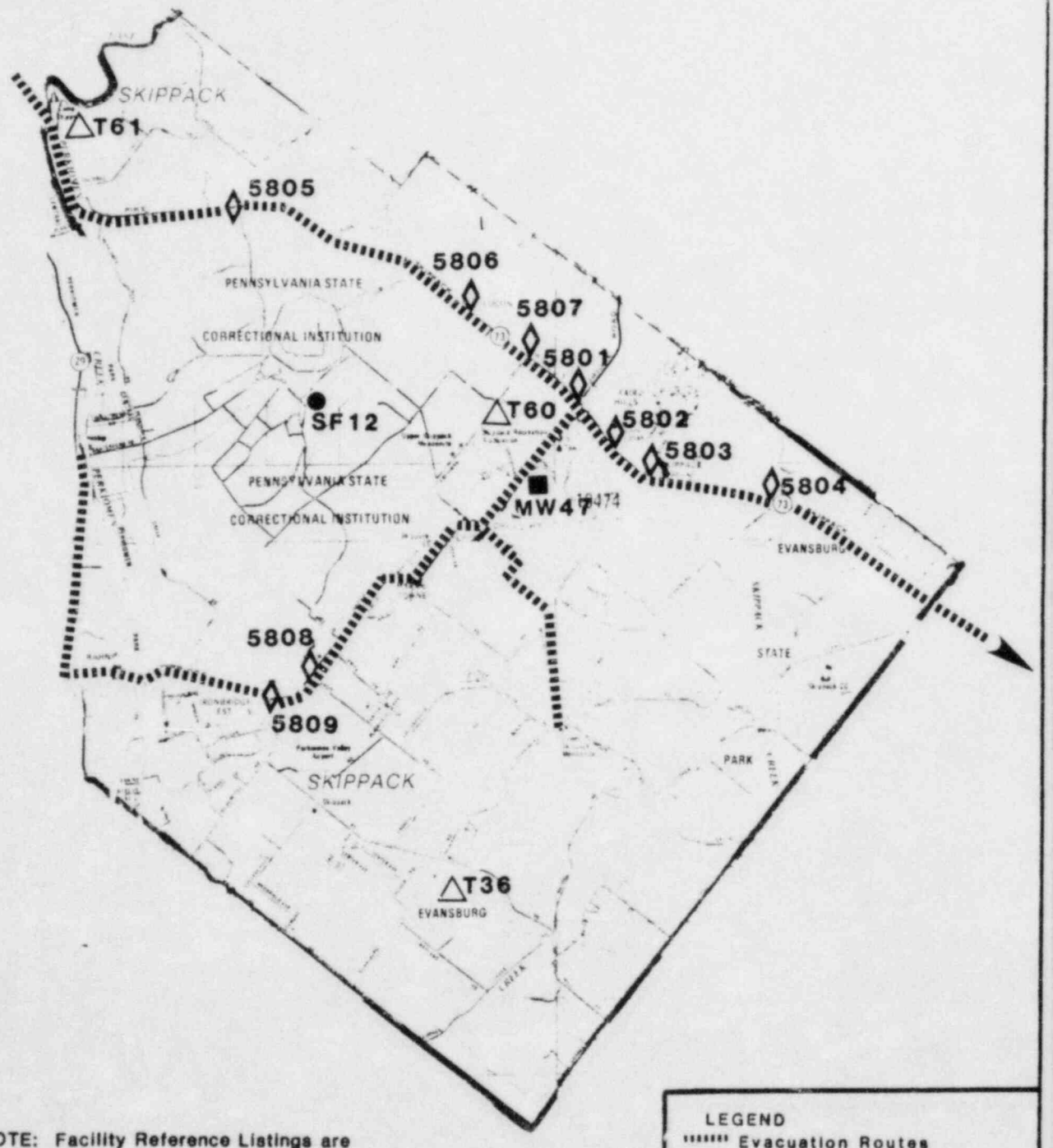


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

MONTGOMERY COUNTY: POTTSTOWN BOROUGH

LEGEND

- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

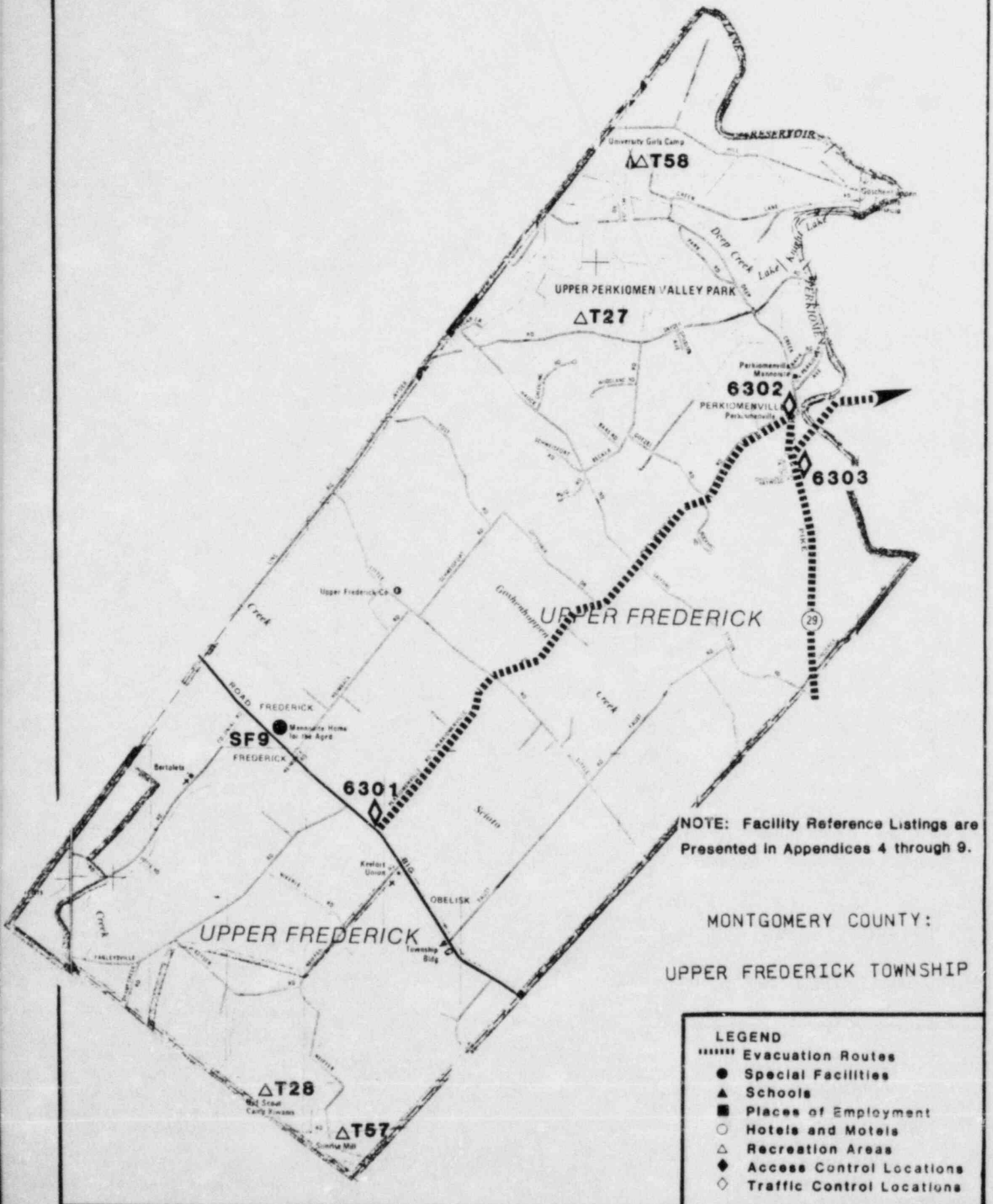


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

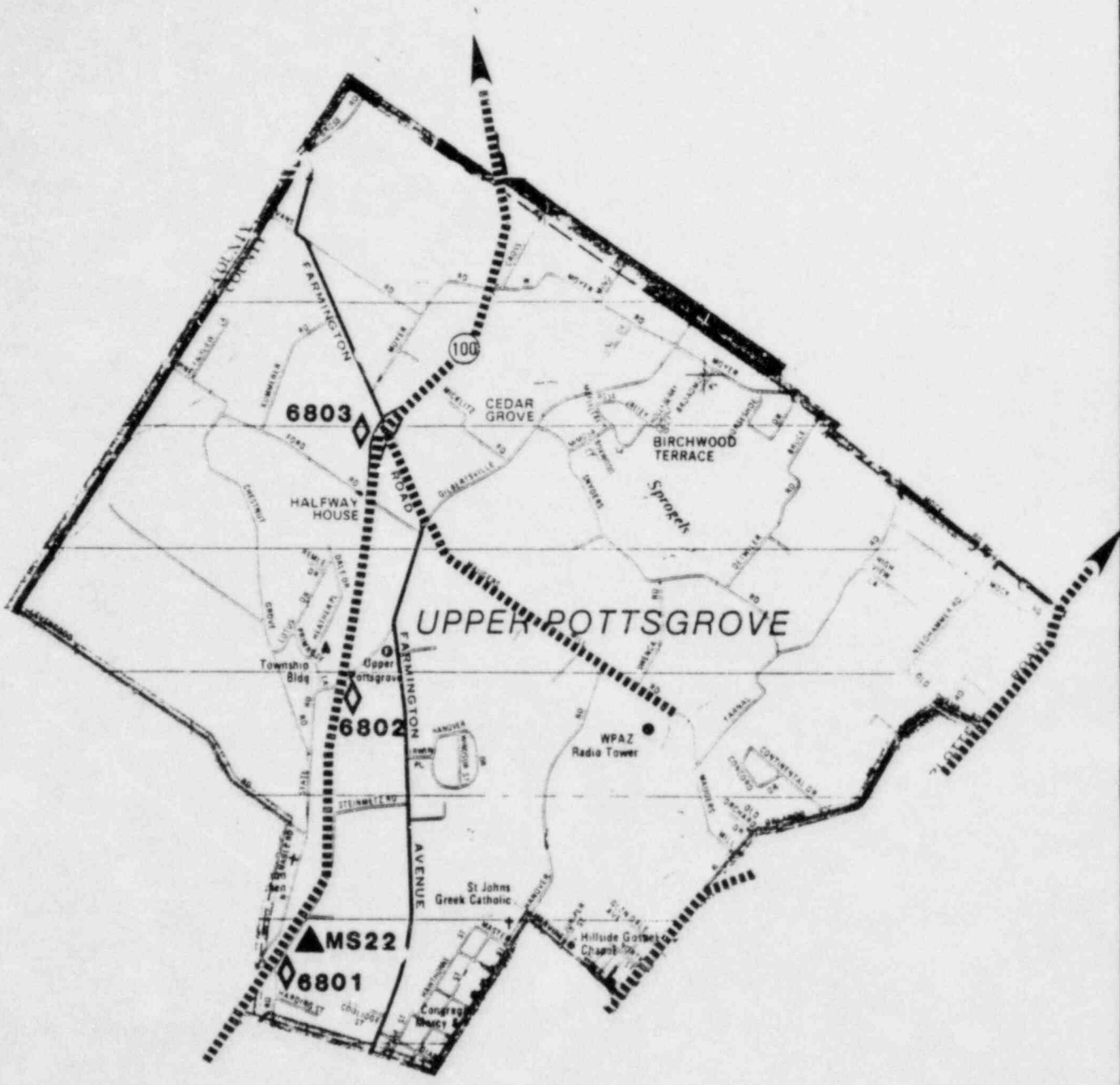
LEGEND

- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

MONTGOMERY COUNTY: SKIPPACK TOWNSHIP


T58
UPPER PERKIOMEN VALLEY PARK
T27
6302
PERKIOMENVILLE
6303
UPPER FREDERICK
SF9
FREDERICK
6301
OBELISK
UPPER FREDERICK
T28
T57
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.
MONTGOMERY COUNTY:
UPPER FREDERICK TOWNSHIP
LEGEND
Evacuation Routes
Special Facilities
Schools
Places of Employment
Hotels and Motels
Recreation Areas
Access Control Locations
Traffic Control Locations

Rev. 1 5/24/84

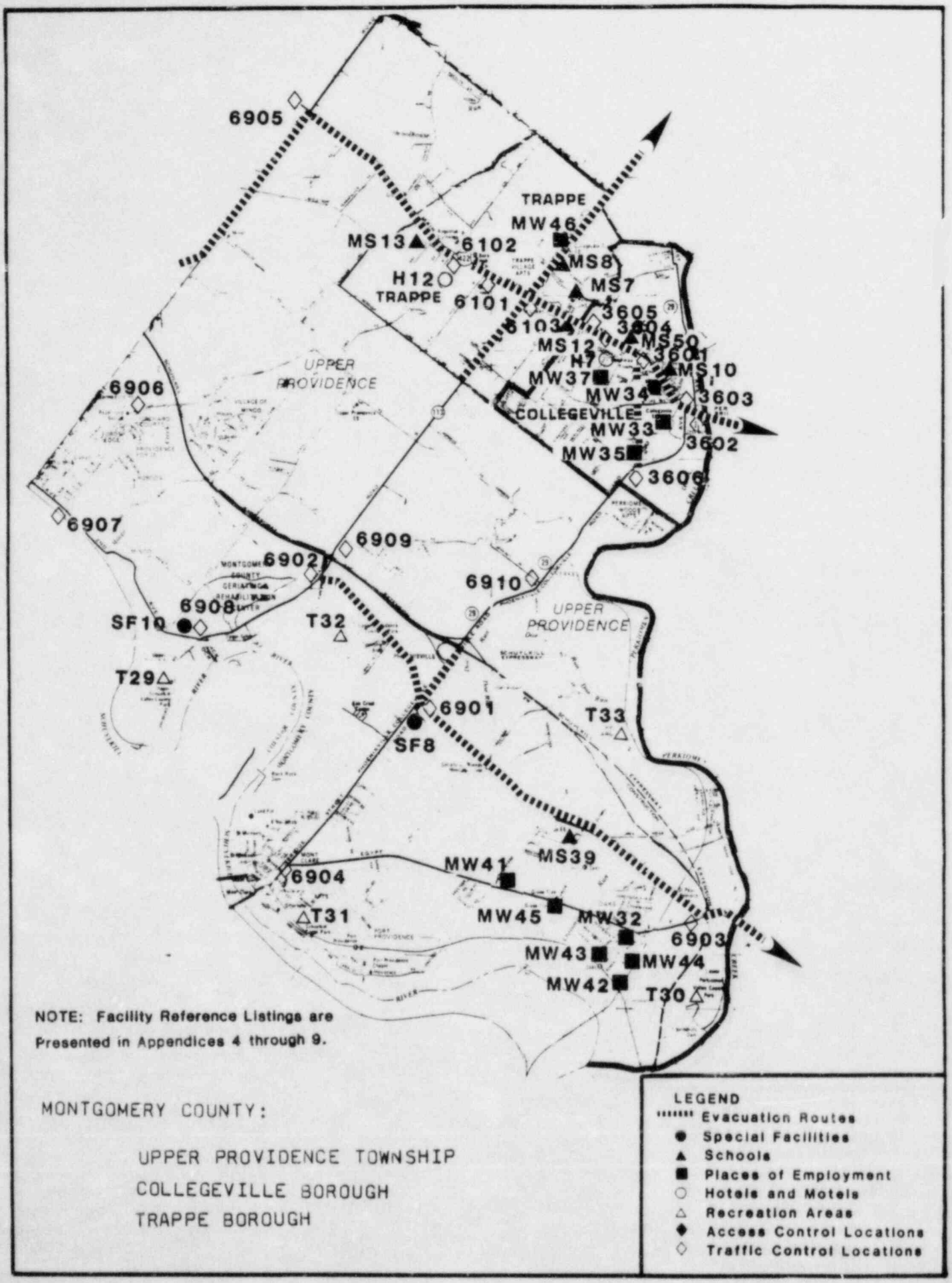


NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

MONTGOMERY COUNTY: UPPER POTTSGROVE TOWNSHIP

LEGEND

- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations



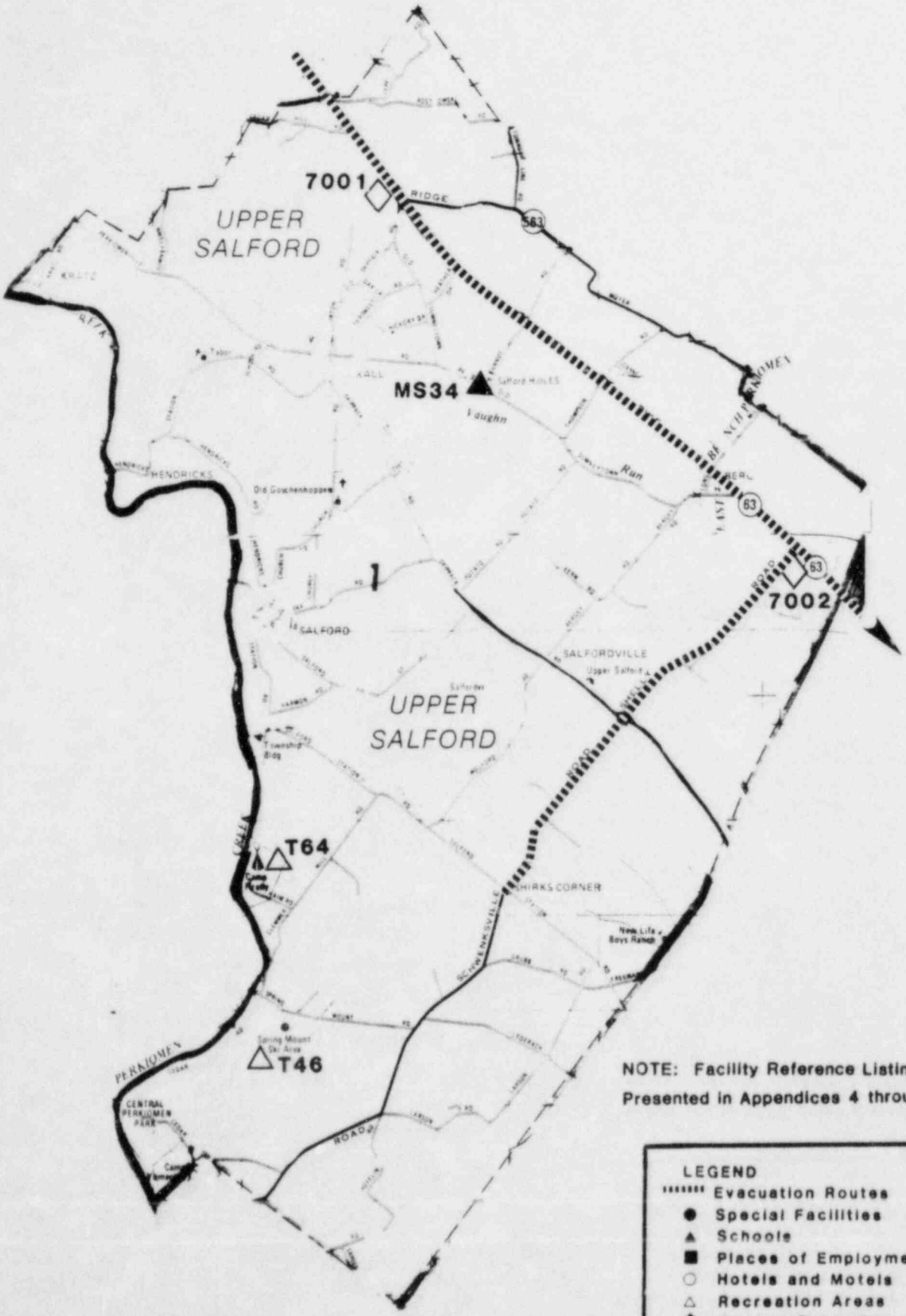
NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

MONTGOMERY COUNTY:

UPPER PROVIDENCE TOWNSHIP
COLLEGEVILLE BOROUGH
TRAPPE BOROUGH

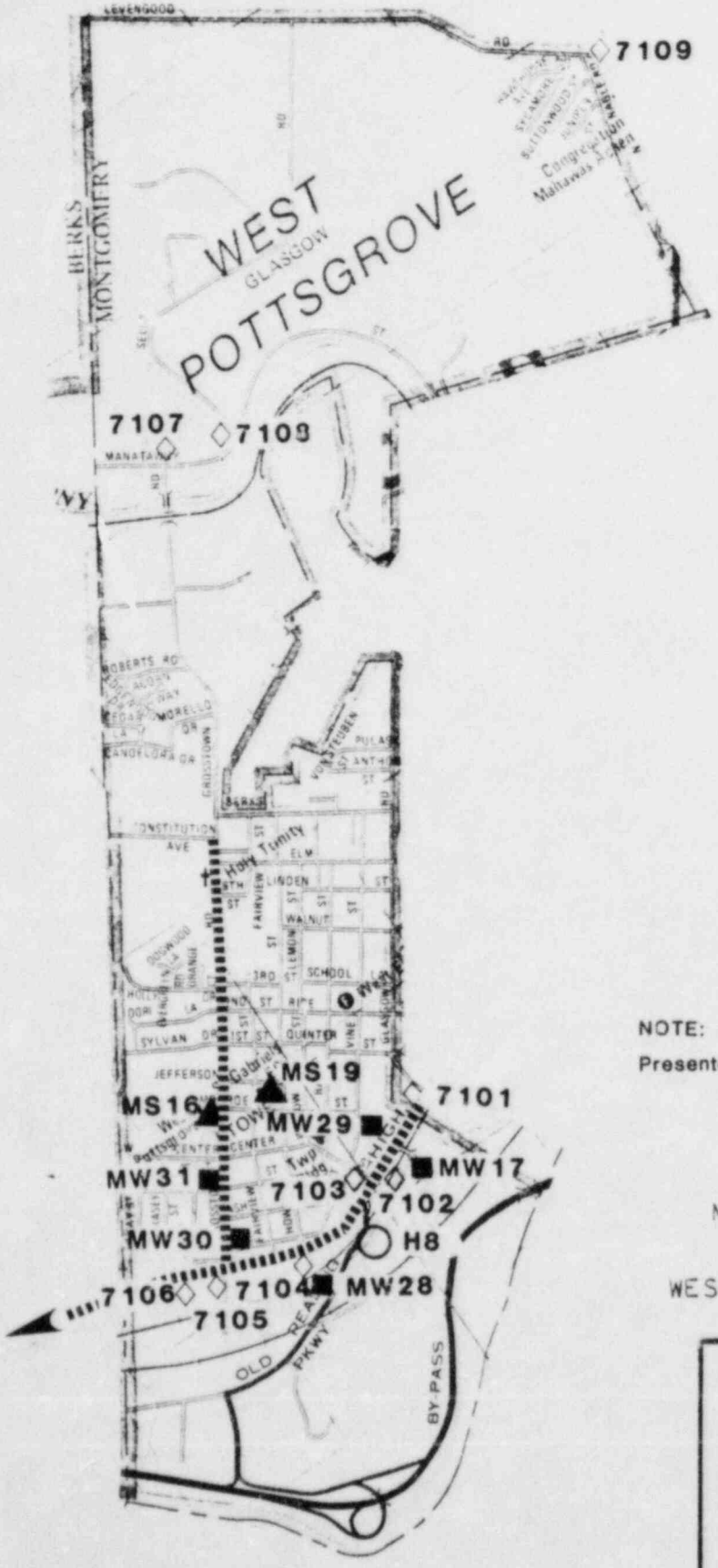
LEGEND
- Evacuation Routes
- Special Facilities
- Schools
- Places of Employment
- Hotels and Motels
- Recreation Areas
- Access Control Locations
- Traffic Control Locations

Rev. 1 5/24/84



MONTGOMERY COUNTY: UPPER SALFORD TOWNSHIP

Rev. 1 5/24/



NOTE: Facility Reference Listings are Presented in Appendices 4 through 9.

MONTGOMERY COUNTY:

WEST POTTSGROVE TOWNSHIP

LEGEND

- Evacuation Routes
- ● Special Facilities
- ▲ Schools
- ■ Places of Employment
- ○ Hotels and Motels
- △ Recreation Areas
- ◆ Access Control Locations
- ◇ Traffic Control Locations

Rev. 1 5/24/84

APPENDIX 4

TRANSIENT
WORK FORCE POPULATION
AND VEHICLE DEMAND ESTIMATES

TRANSIENT/BERKS COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION			VEHICLE DEMAND[1]		
							WINTER WEEKDAY	WINTER WEEKNIGHT	SUMMER WEEKEND	WINTER WEEKDAY	WINTER WEEKNIGHT	SUMMER WEEKEND
Berks	Boyertown	KEI Div. of Cabot Corporation County Line Road	BW1	2	NNW	7-8	200	40	40	200	40	40
Berks	Boyertown	Boyertown Apparel, Inc. 320 S. Franklin Street	BW2	2	NNW	7-8	100	0	0	100	0	0
Berks	Boyertown	Boyertown Auto Body Works Third and Walnut Streets	BW3	2	NNW	8-9	350	52	0	350	52	0
Berks	Boyertown	Boyertown Burial Casket Co. 23 N. Walnut Street	BW4	2	NNW	8-9	450	0	0	450	0	0
Berks	Boyertown	The Eastern and Peerless Foundry Co. 201 Spring Street	BW5	2	NNW	8-9	260	100	0	260	100	0
Berks	Boyertown	H and R Manufacturing Co., Inc. 231 Walnut Street	BW6	2	NNW	8-9	67	0	0	67	0	0
Berks	Boyertown	Osan Manufacturing Co., Inc. 320 S. Washington Street	BW7	2	NNW	7-8	400	0	0	400	0	0
Berks	Boyertown	Unicast Foundries Division - Berkmont Industries Sixth and Washington Streets	BW8	2	NNW	8-9	118	0	0	118	0	0
Berks	Boyertown	Wagner Electric Corp. Second and Jefferson Streets	BW9	3	NNW	7-8	385	165	0	385	165	0
Berks	Boyertown	A.W. Mercer	BW10	2	NNW	7-8	65	0	0	65	0	0
Berks	Boyertown	Boyertown Packaging Corp.	BW11	3	NNW	7-8	245	105	0	245	105	0
					SUBTOTALS		2,640	462	40			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Telephone survey contact reported total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

Rev. 1 5/24/84

TRANSIENT/BERKS COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Berks	Amity	Empire Precision, Inc.	BW12	4	WNW	7-8	70	30	0	70	30	0
Berks	Amity	American Crane and Equipment Corp. 605 Old Swede Road	BW13	3	WNW	7-8	70	30	0	70	30	0
Berks	Amity	Kiwi Polish Company Route 662 and Old Swede Road	BW14	2	WNW	7-8	100	2	0	100	2	0
				SUBTOTALS			240	62	0			

1. Assuming one employee per vehicle.
   Sources 3 and 4 report total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Telephone survey contact reported total employee population only.
4. Berks County Planning Commision, Berks County Data Book 1983 reports a range of employees. The maximum value is used to determine populations for this report.

TRANSIENT/CHESTER COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Chester	East Vincent	West and Sunny Slope Dairies, Inc. Bridge Street Ext.	CW1	2	S	3-4	82	0	0	82	0	0
Chester	Spring City	Valley Forge Flag Co., Inc. Main Street	CW2	2	SSE	3-4	164	0	0	164	0	0
Chester	Spring City	Spring City Electric Manu. Co., Hall & Main Streets	CW3	2	SSE	3-4	97	20	50	97	20	50
Chester	Spring City	LaSalle Steel Company Main and Bridge Streets	CW4	2	SSE	3-4	60	0	0	60	0	0
Chester	Spring City	Springford Knit Company 200 East Bridge Street	CW5	3	SSE	3-4	140	60	0	140	60	0
Chester	Spring City	Spring City Knitting Co. Main and Poplar Sts.	CW6	2	SSE	3-4	475	0	0	475	0	0
Chester	East Coventry	Little Lake Industries (U.S. Leisure, Inc.) Sanatoga Road	CW7	2	W	1-2	93	0	0	93	0	0
Chester	East Coventry	Amerind-Mackessic, Inc. Old Schuylkill Road	CW8	2	S	1-2	50	0	0	50	0	0
Chester	East Coventry	Recticon Corporation Route 724 and Wells Road	CW9	4	S	1-2	53	22	0	53	22	0
Chester	Charlestown	Devault Packing Co., Inc. Devault Lane	CW10	2	SSE	10-11	50	50	15	50	50	15
				SUBTOTALS			1,264	152	65			

1. Assuming one employee per vehicle.
   Sources 3 and 4 report total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Telephone survey contact reported total employee population only.
4. Limerick Generating Station Environmental Report for Operating License, Table 2.1-17.

TRANSIENT/ CHESTER COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Chester	Charlestown	A.C. Miller Concrete Products, Inc. Phoenixville Pike	CW11	2	S	11-12	85	0	0	85	0	0
Chester	Charlestown	Allan A. Myers, Inc. Phoenixville Pike, Rt. 29	CW12	2	S	11-12	186	0	0	186	0	0
Chester	East Pikeland	Monsey Products Company Coldstream Road	CW13	2	S	7-8	113	0	0	113	0	0
Chester	Phoenixville	Roberts Meat Packing Corp. Old Kimberton Road	CW14	2	SSE	7-8	85	0	0	85	0	0
Chester	Phoenixville	Bachman Company Taylor & St. Mary's St.	CW15	2	SSE	6-7	100	0	0	100	0	0
Chester	Phoenixville	Bell Printing & Publishing Company 222 3rd Avenue	CW16	3	SSE	7-8	--	--	--	--	--	--
Chester	Phoenixville	The Budd Company Franklin Ave. & Grant St.	CW17	2	SSE	6-7	125	5	0	125	5	0
Chester	Phoenixville	Danco Tool & Mold Co., Inc. Wheatland & Mellon Sts.	CW18	2	SSE	7-8	50	25	0	50	25	0
Chester	Phoenixville	Kimberton Company Lincoln & Walnut Sts.	CW19	2	SSE	7-8	175	25	0	175	25	0
Chester	Phoenixville	Leighton Industries, Inc. Manavon St. & Second Ave.	CW20	2	SSE	7-8	110	65	0	110	65	0
					SUBTOTALS		1,029	120	0			

1. Assuming one employee per vehicle.
Sources:
2. Telephone survey conducted by HMM Associates, March 1984.
3. 1983 Chester County Industrial Directory reports employer is within the Limerick EPZ.

TRANSIENT/ CHESTER COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Chester	Phoenixville	McAvoy Vitrified Brick Co. McAvoy Lane	CW21	2	SSE	7-8	60	0	0	60	0	0
Chester	Phoenixville	Phoenix Steel Corp. 121 Bridge St.	CW22	2	SSE	7-8	189	65	0	189	65	0
Chester	Phoenixville	SCM Allied Coated Products Route 23, Nutt Road	CW23	3	SSE	6-7	130	55	0	130	55	0
Chester	Schuylkill	Valley Forge Instrument Company, Inc. 55 Buckwalter Road	CW24	4	SSE	7-8	--	--	--	--	--	--
Chester	Phoenixville	The West Company West Bridge Street	CW25	2	SSE	7-8	500	50	0	500	50	0
Chester	Phoenixville	P.E. Cromby Generating Station Cromby Road	CW26	2	SSE	6-7	250	50	100	250	50	100
Chester	Phoenixville	De-Pen Line Inc. Hollow Rd.	CW27	2	SSE	8-9	52	8	0	52	8	0
				SUBTOTALS			1,181	228	100			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Telephone survey contact reported total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.
4. 1983 Chester County Industrial Directory reports employer is within the Limerick EPZ. Population information was not available.

TRANSIENT/MONTGOMERY COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Montgomery	Pottstown	Mrs. Smith's Pie Co. Charlotte & Water Streets	MW1	5	WNW	3-4	1190	510	0	1190	510	0
Montgomery	Pottstown	Lincoln Underwear Co. 175 S. Evans St.	MW2	2	WNW	3-4	130	50	0	130	50	0
Montgomery	Pottstown	Sunset Manufacturing, Inc. 24 Moser Road	MW3	2	NW	2-3	415	10	0	415	10	0
Montgomery	Pottstown	Peerless Publications, Inc. Hanover and King Streets	MW4	2	WNW	3-4	29	75	75	29	75	75
Montgomery	Pottstown	Sanders and Thomas Engineers 11 Robinson Road	MW5	2	WNW	4-5	320	6	0	320	6	0
Montgomery	Pottstown	Mrs. Smith's Foil Co. 255 South Street	MW6	5	WNW	3-4	53	22	0	53	22	0
Montgomery	Pottstown	Neapco Products, Inc. Queen and Bailer Streets	MW7	2	WNW	3-4	200	150	0	200	150	0
Montgomery	Pottstown	Pottstown Machine Company Roland and Reading Roads	MW8	2	WNW	2-3	60	8	0	60	8	0
Montgomery	Pottstown	Dana Corp.-Spicer Division 125 S. Keim Street	MW9	4	WNW	2-3	420	180	0	420	180	0
Montgomery	Pottstown	Amcord, Inc. Adam and Queen Streets	MW10	5	WNW	3-4	75	31	0	75	31	0
Montgomery	Pottstown	Occidental Chemical Corp. Armand Hammer Boulevard	MW11	3	WNW	1-2	520	222	222	520	222	222
				SUBTOTALS			3,412	1,264	297			

1. Assuming one employee per vehicle.
   Sources 3 through 5 report total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Telephone survey contact reported total employee population only.
4. Montgomery County Industrial Development Corporation 1983-84 Industrial Directory.
5. Limerick Generating Station Environmental Report for Operating License, Table 2.1-17.

TRANSIENT/MONTGOMERY COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Montgomery	Pottstown	Pollock Research & Design, Inc., 1200 High Street	MW12	2	NW	2-3	75	0	0	75	0	0
Montgomery	Pottstown	Snow King Frozen Foods, Inc. 980 Glascow Street	MW13	2	WNW	5-6	92	88	0	92	88	0
Montgomery	Pottstown	Videotek, Inc. 125 North York Street	MW14	2	NW	3-4	98	0	0	98	0	0
Montgomery	Pottstown	Mayer-Pollack Steel Corp. S. Keim St.	MW15	2	WNW	2-3	125	0	0	125	0	0
Montgomery	Pottstown	"The Mercury" Hanover and King Streets	MW16	2	WNW	3-4	80	50	50	80	50	50
Montgomery	West Pottsgrove	Doehler-Jarvis Castings Div. N.L. Industries, Inc. Old Reading Pike	MW17	2	WNW	5-6	400	200	0	400	200	0
Montgomery	Pottstown	Meadowbrook Farms, Inc. 895 S. Keim Street	MW18	2	WNW	2-3	70	0	0	70	0	0
Montgomery	Royersford	Stanley Tools, Inc. 508 N. Lewis Road	MW19	2	SE	3-4	55	25	0	55	25	0
Montgomery	Royersford	Diamond Glass Company First Avenue	MW20	2	SE	3-4	180	270	0	180	270	0
Montgomery	Royersford	Morris Wheeler & Company, Inc., Fabricating Works First Avenue	MW21	2	SE	3-4	50	0	0	50	0	0
					SUBTOTALS		1,225	633	50			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.

TRANSIENT/MONTGOMERY COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Montgomery	Royersford	Cann and Saul Steel Company N. Fourth Avenue	MW22	2	SE	3-4	140	0	0	140	0	0
Montgomery	Royersford	American Machine and Tool Co., Inc., Spring & 4th St.	MW23	4	SE	3-4	49[4]	21	0	49	21	0
Montgomery	Royersford	Clover Lamp Company, Inc. First Avenue	MW24	2	SE	4-5	100	0	0	100	0	0
Montgomery	Limerick	Limerick Generating Station	MW25	3	360°	0-1	1,200	600	300	800	400	200
Montgomery	Limerick	Teleflex, Inc. 640 N. Lewis Rd.	MW26	4	E	2-3	167	71	71	167	71	71
Montgomery	Limerick	Crouse Company, Inc. Upper Lewis Road	MW27	2	E	2-3	55	0	0	55	0	0
Montgomery	West Pottsgrove	Gudebrod, Inc. Old Reading Pike	MW28	2	WNW	5-6	95	41	0	95	41	0
Montgomery	West Pottsgrove	Stanley C. Flagg & Co. Subs. Dayton Malleable Inc.	MW29	2	WNW	5-6	682	235	0	682	235	0
Montgomery	West Pottsgrove	Universal Machine Co. 525 W. Vine St.	MW30	2	WNW	5-6	100	30	0	100	30	0
Montgomery	West Pottsgrove	Yocom Knitting Company Race Street	MW31	2	WNW	5-6	100	5	0	100	5	0
Montgomery	Upper Providence	Synthane Taylor Corp. Valley Forge Corp. Center Adams Avenue and Audubon Road	MW32	2	SE	9-10	335	90	0	335	90	0
					SUBTOTALS		3,023	1,093	371			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Limerick Generating Station officials.
4. Montgomery County Industrial Development Corporation 1983-84 Industrial Directory. Reports total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

TRANSIENT/MONTGOMERY COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Montgomery	Collegeville	Allied Tank Truck Equip. Co. 3rd and Chestnut Street	MW33	2	ESE	7-8	85	0	0	85	0	0
Montgomery	Collegeville	Collegeville Flag & Mfg. Co. 4th and Walnut Street	MW34	3	ESE	7-8	170	72	0	170	72	0
Montgomery	Collegeville	T.J. Cope, Inc. 305 Second Avenue	MW35	2	ESE	7-8	93	3	0	93	3	0
Montgomery	Lower Providence	Superior Tube Company 3800 Germantown Pike and Cross Keys Road	MW36	2	ESE	8-9	450	108	0	450	108	0
Montgomery	Collegeville	Uniform Tubes, Inc. 200 West Seventh Avenue	MW37	2	ESE	7-8	310	100	0	310	100	0
Montgomery	Douglass	JEM Manufacturing Div. of Washington Mills 1237 East Philadelphia Ave.	MW38	2	NNW	7-8	80	0	0	80	0	0
Montgomery	Green Lane	Cook Specialty Company North Second Street	MW39	2	NE	9-10	90	35	0	90	35	0
Montgomery	Green Lane	Midgard, Inc. R.R. 1, Nursery Road	MW40	3	NE	9-10	42	18	0	42	18	0
Montgomery	Upper Providence	Container Corp. of America Long Ford Road	MW41	2	SE	8-9	150	50	0	150	50	0
Montgomery	Upper Providence	Dettra Flag Co., Inc. Montgomery Avenue	MW42	2	SE	9-10	110	0	0	110	0	0
					TOTALS		1,580	386	0			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Montgomery County Industrial Development Corporation 1983-84 Industrial Directory reports total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

TRANSIENT/MONTGOMERY COUNTY WORK FORCE POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REF. #	SOURCE	SECTOR	DISTANCE (miles)	POPULATION WINTER WEEKDAY	POPULATION WINTER WEEKNIGHT	POPULATION SUMMER WEEKEND	VEHICLE DEMAND[1] WINTER WEEKDAY	VEHICLE DEMAND[1] WINTER WEEKNIGHT	VEHICLE DEMAND[1] SUMMER WEEKEND
Montgomery	Upper Providence	B.F. Goodrich Tire Co. Montgomery Avenue	MW43	2	SE	9-10	425	355	0	425	355	0
Montgomery	Upper Providence	Penco Products, Inc. Brower Avenue	MW44	3	SE	9-10	301	129	0	301	129	0
Montgomery	Upper Providence	Thriftway Foods Inc. Egypt and Greentree Rds.	MW45	2	SE	8-9	163	143	0	163	143	0
Montgomery	Trappe	Techalloy Company, Inc. Route 113	MW46	2	ESE	6-7	90	60	0	90	60	0
Montgomery	Skippack	Static, Inc. Route 113 and Mensch Road	MW47	2	E	9-10	60	0	0	60	0	0
					SUBTOTALS		1,039	687	0			
		TOTAL WORK FORCE POPULATION					16,633	5,087	923			

1. Assuming one employee per vehicle.

Sources:

2. Telephone survey conducted by HMM Associates, March 1984.
3. Montgomery County Industrial Development Corporation 1983-84 Industrial Directory reports total employee population only. Winter weekday population is assumed to be 70% of the total and winter weeknight population is assumed to be 30% of the total. Summer weekend population is assumed to be negligible unless otherwise indicated. In cases where a weekend work force exists, 30% of the total population was reported.

APPENDIX 5

TRANSIENT
HOTEL-MOTEL POPULATION
AND VEHICLE DEMAND ESTIMATES

TRANSIENT/HOTEL-MOTEL POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	NUMBER OF UNITS[1]	POPULATION[2]	VEHICLE DEMAND[3]
Berks	Amity	Rainbow Motel Route 422	H1	WNW	10-11	9	14	9
Berks	Colebrookdale	Mel-Dor Motel Route 100	H2	NNW	8-9	18	27	18
Berks	Amity	Cedar Haven Motel R.D. 2	H3	WNW	8-9	12	18	12
Berks	Amity	Hillside Motel	H4	WNW	10-11	15	23	15
Montgomery	Limerick	Airport Hotel Benjamin Franklin Highway	H6	ENE	2-3	19	29	19
Montgomery	Lower Providence	Blue Eagle Motel 3470 Ridge Pike	H7	ESE	9-10	8	12	8
Montgomery	West Pottsgrove	Bramcote Hotel Old Reading Pike	H8	WNW	5-6	3	5	3
Montgomery	Pottstown	Downtown Motor Inn, Inc. High and Manatawny Streets	H9	WNW	4-5	65	98	65
Montgomery	Pottstown	Holiday Inn King Street and Route 100	H10	WNW	4-5	100	150	100
Chester	North Coventry	Modern Motel 1417 S. Hanover Street	H11	NW	3-4	20	30	20
Montgomery	Trappe	Lamb Hotel & Family Restaurant 724 Main Street	H12	ESE	5-6	6	9	6
Montgomery	Perkiomen	Graterford Hotel Gravel Pike	H13	ESE	7-8	8	12	8
					TOTAL HOTEL-MOTEL POPULATION		427	

1. Source: Telephone survey conducted by HMM Associates, March 1984.
2. Assuming an average of 1.5 persons per unit.
3. Assuming an average of 1.5 persons per vehicle.

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APPENDIX 6

TRANSIENT
RECREATIONAL POPULATION
AND VEHICLE DEMAND ESTIMATES

TRANSIENT/RECREATIONAL POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	NUMBER[1] OF SITES	POPULATION[2] WINTER WEEKDAY	POPULATION[2] SUMMER WEEKEND	VEHICLE DEMAND[3] WINTER WEEKDAY	VEHICLE DEMAND[3] SUMMER WEEKEND
Berks	Union	Hopewell Village National Historic Park	T1	W	9-10	NA	1,600	5,000	640	2,000
Berks	Union	French Creek State Park	T2	W	7-8	317	2	3,655 [4]	1	317 [5] 17 693
Berks	Douglass	Camp Yomeca	T3	WNW	6-7	NA	0	100	0	3 [6]
				TOTALS			1602	8755		

1. Number of overnight camping sites available.
2. Sources: Telephone survey conducted by HMM Associates, March 1984.
   L.E.A. list of Summer and Day Camps.
3. Assuming 2.5 persons per vehicle unless otherwise noted.
4. Park population includes 1,268 people camping, assuming 4 persons per campsite. In addition, organized camping facilities can accommodate 655 people. 1,732 people is representative of the number of day visitors to the park.
5. Assuming 1 vehicle per campsite, 40 persons per bus for organized group camping, and 2.5 persons per vehicle for day visitors.
6. Assuming 40 persons per bus for camps and organized camping in parks.

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TRANSIENT/RECREATIONAL POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	NUMBER[1] OF SITES	POPULATION[2] WINTER WEEKDAY	POPULATION[2] SUMMER WEEKEND	VEHICLE DEMAND[3] WINTER WEEKDAY	VEHICLE DEMAND[3] SUMMER WEEKEND
Chester	Warwick	State Game Land No. 43	T8	WSW	10-11	NA	500 100 [4]	100	200	40
Chester	Warwick	Warwick County Park	T9	WSW	7-8	--	15	200	6	80
Chester	Upper Uwchlan	Marsh Creek State Park	T10	SW	12-13	NA	500	17,000 [5]	200	4,250 [6]
Chester	Schuylkill	Freedoms Foundation	T11	SSE	10-11	NA	110 110 [4]	110	3 [7]	3 [7]
Chester	Charlestown	Swiss Pines Park	T12	S	8-9	NA	300	2,000	120	800
Chester	East Vincent	Camp Innabah	T13	SW	5-6	NA	100 12 [4]	150	3 [7]	4 [7]
Chester	East Vincent	Camp Sankanac	T14	SW	5-6	NA	75 75 [4]	200	2 [7]	5 [7]
Chester	East Pikeland	Camp Council	T15	S	6-7	NA	0	160	0	4 [7]
Chester	Schuylkill	YMCA Baker Park Day Camp	T6	SSE	8-9	NA	-- [8]	150	-- [8]	4 [7]
Chester	Warwick	Warwick Woods Campgrounds	T7	WSW	9-10	200	2 2 [4]	800	1	200 [9]
Chester	Warwick	French Creek State Park		See Berks County Listing						
Chester	Warwick	Hopewell Village National Historic Park		See Berks County Listing			———	———		
				TOTALS			1,602	20,870		

1. Number of overnight camping sites available.
2. Sources: Telephone survey conducted by HMM Associates, March 1984.
   L.E.A. list of Summer and Day Camps.
3. Assuming 2.5 persons per vehicle unless otherwise noted.
4. Winter weeknight population.
5. Represents peak population for a July 1983 weekend.
6. Assuming 4 people per vehicle based on discussion with Marsh Creek State Park personnel.
7. Assuming 40 persons per bus for camps and organized camping in parks.
8. L.E.A. list of Summer and Day Camps reports that camp is open year round. Population information was not available for the winter weekday and winter weeknight.
9. Assuming 1 vehicle per campsite or 4 persons per vehicle.

NA: Not Applicable

--: Data was not available, Recreation Area could not be located.

TRANSIENT/RECREATIONAL POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	NUMBER[1] OF SITES	POPULATION[2] WINTER WEEKDAY	POPULATION[2] SUMMER WEEKEND	VEHICLE DEMAND[3] WINTER WEEKDAY	VEHICLE DEMAND[3] SUMMER WEEKEND
Montgomery	Upper Frederick	Upper Perkiomen Valley Park	T27	NE	8-9	--	0	10,000	0	4,000
Montgomery	Upper Frederick	Camp Kiwanis	T28	NE	4-5	NA	--[4]	97	--[4]	3[5]
Montgomery	Upper Providence	Upper Schuylkill Valley Farm Park	T29	SE	5-6	NA	35	200	14	80
Montgomery	Upper Providence	Lower Perkiomen Valley Park	T30	SE	9-10	NA	25	1,000	10	400
Montgomery	Upper Providence	Schuylkill Valley Canal Park	T31	SSE	7-8	NA	36	293	15	118
Montgomery	Upper Providence	Upper Providence Township Park	T32	SE	6-7	NA	3	5	2	2
Montgomery	Upper Providence	Hideaway Inc. Day Camp	T33	SE	8-9	NA	0	150	0	4[5]
Montgomery	Lower Providence	Audubon Wildlife Sanctuary	T34	SE	10-11	NA	125	120	50	48
Montgomery	Lower Providence	Collegeville Boro Park	T35	ESE	7-8	NA	0	60	0	24
				TOTALS			224	925		

1. Number of overnight camping sites available.
2. Sources: Telephone survey conducted by HMM Associates, March 1984.
   L.E.A. list of Summer and Day Camps.
3. Assuming 2.5 persons per vehicle unless otherwise noted.
4. L.E.A. list of Summer and Day Camps reports that camp is open year round. Population information was not available for the winter weekday and winter weeknight.
5. Assuming 40 persons per bus for camps and organized camping in parks.

NA: Not Applicable
--: Data was not available, Recreation Area could not be located.

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TRANSIENT/RECREATIONAL POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	NUMBER[1] OF SITES	POPULATION[2] WINTER WEEKDAY	POPULATION[2] SUMMER WEEKEND	VEHICLE DEMAND[3] WINTER WEEKDAY	VEHICLE DEMAND[3] SUMMER WEEKEND
Montgomery	Skippack	Evansburg State Park	T36	E	10-11	NA	75	250	30	100
Montgomery	Douglass	Douglass Township Park	T37	NNW	6-7	NA	0	75	0	30
Montgomery	New Hanover	Hickory Park	T38	NNE	6-7	40	0	120 [4]	0	40 [5]
Montgomery	Lower Pottsgrove	Fellowship Farm	T39	N	1-2	NA	120 120 [6]	300	3 [7]	8 [7]
Montgomery	New Hanover	Camp Laughing Waters (GSA)	T40	NNE	5-6	NA	200 200 [6]	300	5 [7]	8 [7]
Montgomery	Limerick	Lakeview Amusement Park	T41	SE	3-4	NA	0	600	0	240
Montgomery	Lower Pottsgrove	Sanatoga Memorial Park	T42	N	1-2	NA	25	200	10	80
Montgomery	Limerick	Camp Kweebec	T43	ENE	5-6	NA	0	300	0	8 [7]
Montgomery	Lower Frederick	Camp Arthur Reeta Baker	T44	NE	5-6	NA	150	700	4 [7]	18 [7]
Montgomery	Lower Pottsgrove	Beulahland Park	T45	NW	1-2	NA	0	500	0	200
Montgomery	Upper Salford	Spring Mount Ski Area	T46	ENE	7-8	60	3,000 3,000 [6]	240 [8]	1,200	60 [5]
Montgomery	Schwenksville	Pennypacker Mills Park	T47	ENE	7-8	NA	400	1,000	160	400
				TOTALS			3,970	4,585		
		TOTAL RECREATIONAL POPULATION					7,398	46,135		

1. Number of overnight camping sites available.
2. Sources: Telephone survey conducted by HMM Associates, March 1984.
   L.E.A. list of Summer and Day Camps.
3. Assuming 2.5 persons per vehicle unless otherwise noted.
4. Assuming 3 persons per campsite.
5. Assuming 1 vehicle per campsite.
6. Winter weeknight population.
7. Assuming 40 persons per bus for camps and organized camping in parks.
8. Assuming 4 persons per campsite.

NA: Not Applicable

APPENDIX 7

TRANSIENT
SHOPPING CENTER POPULATION
AND VEHICLE DEMAND ESTIMATES

TRANSIENT/SHOPPING CENTER POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY	POPULATION[1] WINTER WEEKNIGHT	POPULATION[1] SUMMER WEEKEND	VEHICLE DEMAND[2] WINTER WEEKDAY	VEHICLE DEMAND[2] WINTER WEEKNIGHT	VEHICLE DEMAND[2] SUMMER WEEKEND
Chester	North Coventry	Coventry Mall	SC2	WNW	4-5	375	0	375	250	0	250
		TOTAL SHOPPING CENTER POPULATION				375	0	375			

1. Source: Telephone survey conducted by HMM Associates, March 1984.
2. Assuming an average of 1.5 persons per vehicle.

APPENDIX 8

SPECIAL FACILITY
MEDICAL, NURSING HOME AND INCARCERATION FACILITY
POPULATION AND VEHICLE DEMAND ESTIMATES

SPECIAL FACILITY/MEDICAL, NURSING HOME AND INCARCERTAION FACILITY POPULATION AND VEHICLE DEMAND ESTIMATES

COUNTY	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1,2]		VEHICLE DEMAND[3]	
						NON-AMBULATORY	AMBULATORY	NON-AMBULATORY	AMBULATORY
Chester	Phoenixville	Phoenixville Hospital 140 Nutt Road	SF1	SSE	7-8	88	87	44	3
Chester	Phoenixville	Phoenixville Manor Nursing Home 833 South Main Street	SF2	SSE	8-9	135	0	68	0
Chester	South Coventry	Coventry Manor Nursing Home P.O. Star Route	SF3	WSW	6-7	41	0	21	0
Chester	North Coventry	Manatawny Manor Route 724, Old Schuylkill Rd.	SF4	WNW	2-3	99	120	50	3
Chester	East Vincent	Pennhurst State Hospital	SF5	SSE	2-3	NA	1565 [4]	NA	609 [5]
Montgomery	Lower Providence	Eagleville Hospital 100 Eagleville Road	SF6	ESE	10-11	0	214	0	6
Montgomery	Pottstown	Leader Nursing and Rehabilitation Center 724 N. Charlotte Street	SF7	NW	3-4	159	66	80	2
Montgomery	Upper Providence	River Crest Center Route 29	SF8	SE	7-8	77	0	39	0
Montgomery	Upper Frederick	Frederick Mennonite Home Route 73	SF9	NNE	6-7	50	87	25	3
Montgomery	Upper Providence	Montgomery County Geriatric and Rehabilitation Center 1600 Black Rock Road	SF10	SE	5-6	591	0	296	0
Montgomery	Pottstown	Pottstown Memorial Med. Ctr. High St. and Firestone Blvd.	SF11	NW	2-3	300	0	150	0
Montgomery	Skippack	Graterford Prison	SF12	E	8-9	NA	1900	NA	45
Montgomery	Lower Providence	Montgomery County Prison Farm	SF13	ESE	9-10	NA	536	NA	14
	TOTAL MEDICAL, NURSING HOME AND INCARCERATION FACILITY POPULATION					1540	4475		

1. Sources: NUS Corporation LGS Preliminary Evacuation Time Estimates, 1980.
   Energy Consultants Inc., March 1984.
2. Populations represent current patient capacity for all cases modeled; winter weekday, winter weeknight and summer weekend.
3. Assuming an average of 2 non-ambulatory persons per vehicle and 40 ambulatory persons per bus.
4. Population includes 415 patients (305 ambulatory, 102 wheel chair, 8 non-ambulatory), and 1150 employees.
5. Vehicles required for evacuation include: 16 wheel chair buses, six 48 passenger buses, eight passenger vans, four ambulances, and 575 employee vehicles (assuming 2 employees per vehicle).

NA - Not Applicable

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APPENDIX 9

SPECIAL FACILITY
SCHOOL DISTRICTS
POPULATION AND VEHICLE DEMAND ESTIMATES

SPECIAL FACILITY/BERKS COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND STUDENTS[2]	VEHICLE DEMAND FACULTY[3]
Boyertown	Boyertown	Boyertown Area Senior High School Fourth & Monroe Sts.	BS1	NNW	7-8	1440	139	22(72)	139
	New Hanover in Montgomery	Boyertown Area Junior High School - East 2020 Big Road	BS2	N	6-7	797	84	11(72)	84
	Colebrookdale	Boyertown Area Junior High School - West S. Madison St.	BS3	NNW	7-8	673	67	10(72)	67
	Colebrookdale	Boyertown Elementary School S. Madison St.	BS4	NNW	7-8	616	59	9(72)	59
	Colebrookdale	Colebrookdale Elementary School - Montgomery Ave.	BS5	NNW	8-9	355	28	5(72)	28
	Douglass in Montgomery	Gilbertsville Elementary School - Congo Rd.	BS6	N	6-7	376	27	5(72)	27
	New Hanover in Montgomery	New Hanover/Upper Frederick Elementary School Route 73	BS7	NNE	6-7	569	46	8(72)	46
	Douglass	Pine Forge Elementary School Pine Forge Rd.	BS8	NW	7-8	249	22	4(72)	22
	Boyertown	Lincoln School W. Philadelphia Avenue	BS9	NNW	8-9	64	16	2(30)	16
	Boyertown	Montessori Academy of PA 645 S. Reading Avenue	BS10	NNW	8-9	75	8	1(72) 5(6)	8
				SUBTOTALS		5214	496		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.

SPECIAL FACILITY/BERKS COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	Douglass	Pine Forge Academy Pine Forge Road	BS11	NW	7-8	136 120[4]	26	3(66)	0[5]
	Douglass	Pine Forge S.D.A. Elementary School Pine Forge Road	BS12	NW	7-8	34	2	1(66)	0[5]
	Douglass in Montgomery	Wayside Christian School Sweinhart Road	BS13	NNW	6-7	70	16	1(72) 2(10)	16
Daniel Boone	Amity	Amity Elementary School Route 662	BS14	NW	9-10	542	46	12(72)	46
				SUBTOTALS		782	90		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. Nursery schools and Day Care Centers are reported for identification purposes only. These facilities are included as part of the permanent population for the evacuation analysis.
5. School District RERP reports that faculty will evacuate with students.

SPECIAL FACILITY/CHESTER COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
Phoenixville	Phoenixville	Phoenixville Area Senior High School Gay St. and City Line Ave.	CS1	SSE	7-8	634	61	14(72)	61
	Schuylkill	Phoenixville Area Junior High School 1330 S. Main St.	CS2	SSE	7-8	798	82	17(72) 1(48)	82
	East Pikeland	East Pikeland Elementary School Seven Stars & Hares Hill Rds.	CS3	S	5-6	347	29	5(72) 1(36)	29
	Phoenixville	Samuel K. Barkley Elementary School - 320 Second Ave.	CS4	SSE	7-8	366	51	5(72) 2(48)	51
	Phoenixville	Second Avenue Elementary School Second Ave. and Manavon St.	CS5	SSE	7-8	184	20	3(72)	20
	Schuylkill	Schuylkill Elementary School Whitehorse Rd.	CS6	SSE	8-9	563	30	8(72) 1(48)	30
	Schuylkill	Northern Chester County Technical School Charlestown Road	CS7	SSE	7-8	735	60	11(72)	60
	Schuylkill	Valley Forge Christian Academy - Valley Park and Whitehorse Roads	CS8	SSE	8-9	150	29	1(60) 1(48) 1(12)	29
	Schuylkill	Liberty Forge School Charlestown Road	CS9	SSE	7-8	105	20	8(20)	20
	Phoenixville	St. Mary of the Assumption School South and Emmitt Streets	CS10	SSE	7-8	213	11	3(72) 1(36)	11
				SUBTOTALS		4095	393		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.

SPECIAL FACILITY/CHESTER COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND STUDENTS[2]	VEHICLE DEMAND FACULTY[3]
	Phoenixville	Holy Trinity School 221 Dayton Street	CS11	SSE	6-7	71	4	1(72)	4
	Phoenixville	St. Ann's School Third Avenue and Buttonwood Street	CS12	SSE	7-8	347	20	6(72)	20
	East Pikeland	St. Basil the Great Elementary School Kimberton and Seven Star Rds.	CS13	S	6-7	162	11	3(72)	11
NA	Schuylkill	Valley Forge Christian College Charlestown Road	CS14	SSE	7-8	381	47	9(72)	47
Owen J. Roberts	South Coventry	Owen J. Roberts High School Routes 23 and 100	CS15	SW	4-5	1127	103	17(72) 5(10)	103
	South Coventry	Owen J. Roberts Middle School Routes 23 and 100	CS16	SW	4-5	1018	98	15(72)	98
	East Coventry	East Coventry Elementary School - Sanatoga Rd.	CS17	SW	1-2	169	18	3(72)	18
	East Vincent	Vincent Elementary School Route 23	CS18	SSW	4-5	319	39	5(72)	39
	North Coventry	North Coventry Elementary School - Hanover St.	CS19	W	3-4	573	53	8(72)	53
					SUBTOTALS	4167	393		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984. L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.

NA - Not Applicable

SPECIAL FACILITY/CHESTER COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	South Coventry	French Creek Valley Elementary School Coventryville Rd.	CS20	SW	6-7	251	29	4(72)	29
	Warwick	Warwick Elementary School Route 23	CS21	WSW	8-9	143	12	2(72)	12
	East Vincent	Kimberton Farm School N. Stevens Stars Rd.	CS22	S	5-6	300	40	8(72)	40
Downingtown Area	Upper Uwchlan	Upattinas Open Community School Greenbridge Road	CS23	SW	11-12	52	7	5(10)	7
Great Valley	Charlestown	Charlestown Elementary School[4]	CS24	S	10-11	151	23	3(72)	28
				SUBTOTALS		897	116		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. School District RERP data reports that students do not routinely evacuate. However, for analysis purposes these schools are assumed to evacuate.

SPECIAL FACILITY/MONTGOMERY COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
Methacton	Lower Providence	Arcola Intermediate School Eagleville Rd.	MS1	SE	9-10	647	76	11(72)	76
	Lower Providence	Arrowhead Elementary School 232 Level Rd.	MS2	ESE	8-9	313	36	6(68)	36
	Lower Providence	Audubon Elementary School Egypt Rd.	MS3	SE	10-11	269	22	5(70)	22
	Lower Providence	Eagleville Elementary School 125 Summit Ave.	MS4	ESE	10-11	352	34	6(68)	34
	Lower Providence	Woodland Elementary School 2700 Woodland Ave.	MS5	SE	11-12	290	29	5(70)	29
Perkiomen Valley	Perkiomen	Perkiomen Valley High School Route 29 and Trappe Rd.	MS6	E	6-7	1028	96	13(66) 1(18) 1(14)	96
	Trappe	Perkiomen Valley Middle School First and College Aves.	MS7	ESE	6-7	555	47	8(66) 1(72)	47
	Trappe	Perkiomen Valley Elementary School - South 200 E. Third Ave.	MS8	ESE	6-7	441	29	6(66) 2(10) 2(36)	29
	Schwenksville	Perkiomen Valley Elementary School - North Second St. and Perkiomen Ave.	MS9	ENE	6-7	353	37	1(66) 1(21) 2(48) 7(10) 2(36) 1(72)	37
				SUBTOTALS		4248	406		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.

SPECIAL FACILITY/MONTGOMERY COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (CONCLUDED)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	Collegeville	St. Eleanore's Elementary School 406 Main Street	MS10	ESE	7-8	265	13	4(72)	13
	Lower Frederick	St. Mary's Elementary School Spring Mountain Road	MS11	ENE	7-8	196	12	3(72)[4]	12
	Collegeville	Bright Spot Kindergarten Main Street	MS12	ESE	6-7	40	3	1(72)[4]	3
	Trappe	Twin Acres Country Day School 105 Cherry Avenue	MS13	ESE	5-6	65	4	1(72)[4]	4
Pottsgrove	Lower Pottsgrove	Pottsgrove High School 1301 Kauffman Rd.	MS14	NNW	3-4	854	89	14(60) 1(66)	89
	Lower Pottsgrove	Pottsgrove Intermediate School 1328 Buchert Rd.	MS15	NNW	3-4	721	68	9(66) 2(72)	68
	West Pottsgrove	West Pottsgrove Elementary School - Grosstown Rd.	MS16	WNW	5-6	293	36	5(66)	36
	Lower Pottsgrove	Ringing Rocks Elementary School - Kauffman Rd.	MS17	NNW	3-4	361	30	5(66) 1(16) 5(10)	30
	Lower Pottsgrove	Lower Pottsgrove Elementary School - Pleasantview Rd.	MS18	N	1-2	514	49	8(72) 1(36)	49
	West Pottsgrove	St. Gabriel's Elementary School Fairview and Monroe Streets	MS19	WNW	5-6	206	16	4(72)[4]	16
				SUBTOTALS		3515	320		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. Vehicle demand, number available (capacity), reported by Energy Consultants Inc., March 1984. Capacity assumed to be 72 students per bus.

SPECIAL FACILITY/MONTGOMERY COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	Lower Pottsgrove	St. Pius X High School 844 N. Keim Street	MS20	NW	2-3	681	35	11(72)[4]	35
	Lower Pottsgrove	West-Mont Christian Academy 2675 E. High Street	MS21	NNW	2-3	70	6	1(60) 2(5) 1(10)	6
	Upper Pottsgrove	Greater Pottstown Christian Academy Rt. 100 North of State St.	MS22	NW	4-5	30	3	1(72)[4]	3
Pottstown	Pottstown	Pottstown Senior High School N. Washington St.	MS23	NW	3-4	974	125	16(60) 1(10)	125
	Pottstown	Pottstown Junior High School Franklin and East Sts.	MS24	NW	3-4	526	68	8(60) 1(10) 1(36)	68
	Pottstown	Edgewood Elementary School Morris and Mintzer Sts.	MS25	NW	2-3	270	31	4(66) 1(4)	31
	Pottstown	Franklin Elementary School Franklin and Grace Sts.	MS26	NW	3-4	430	36	6(66) 1(8) 1(10)	36
	Pottstown	Lincoln Elementary School Eighth and York Sts.	MS27	NW	4-5	455	31	6(66) 2(10) 1(4)	31
	Pottstown	Rupert Elementary School South and Mt. Vernon Sts.	MS28	NW	2-3	282	23	3(66) 2(10) 1(72)	23
	Pottstown	Elizabeth Barth Elementary School - W. Walnut & Ryan Sts.	MS29	WNW	5-6	411	38	6(66) 5(10)	38
				SUBTOTALS		4129	396		1(8)

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. Vehicle demand, number available (capacity), reported by Energy Consultants Inc., March 1984. Capacity assumed to be 72 students per bus.

SPECIAL FACILITY/MONTGOMERY COUNTY SCHOOL DISTRICTS POPULATION AND VEHICLE DEMAND ESTIMATES (CONTINUED)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	Pottstown	The Hill School High Street	MS30	WNW	3-4	500 500[4]	160	4(10) 10(45) 3(6)	160
	Pottstown	Wyndcroft School Rosedale Drive and Wilson St.	MS31	NW	2-3	183	26	3(72)[5]	26
	Pottstown	St. Aloysius Elementary School Third and Hanover Streets	MS32	WNW	3-4	480	37	8(72)[5]	37
	Pottstown	St. Peter's Elementary School 1126 South Street	MS33	NW	2-3	95	5	2(72)[5]	5
Souderton Area	Upper Salford	Salford Hills Elementary[12] School - 2720 Barndt Rd.	MS34	NE	9-10	457	43	7(72)	43
Spring-Ford Area	Limerick	Spring-Ford Senior High School - 5 Lewis Rd.	MS35	SE	3-4	1082	83	14(66) 1(36)	83
	Royersford	Spring-Ford Middle School Washington St. & Seventh Ave.	MS36	SE	3-4	833	94	13(66)	94
	Limerick	Limerick Elementary School 81 Limerick Center Rd.	MS37	E	2-3	542	38	8(66)	38
	Spring City in Chester	Spring City Elementary School - 190 Wall Street	MS38	SSE	4-5	278	28	4(66)	28
	Upper Providence	Oaks Elementary School 325 Green Tree Rd.	MS39	SE	8-9	331	30	4(66) 7(10) 1(8)	30
	Royersford	Royersford Elementary School Fourth and Washington Sts.	MS40	SE	3-4	100	11	2(66)	11
				SUBTOTALS		4881	555		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984. L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. Residential school winter weeknight population.
5. Vehicle demand, number available (capacity), reported by Energy Consultants Inc., March 1984. Capacity assumed to be 72 students per bus.

SPECIAL FACILITY/MONTGOMERY COUNTY SCHOOL DISTRICTS' POPULATION AND VEHICLE DEMAND ESTIMATES (continued)

DISTRICT	MUNICIPALITY	FACILITY NAME AND LOCATION	REFERENCE NUMBER	SECTOR	DISTANCE (miles)	POPULATION[1] WINTER WEEKDAY STUDENTS	POPULATION[1] WINTER WEEKDAY FACULTY	VEHICLE DEMAND WINTER WEEKDAY STUDENTS[2]	VEHICLE DEMAND WINTER WEEKDAY FACULTY[3]
	Royersford	Royersford Elementary School 200 S. Fifth Ave.	MS41	SE	3-4	208	17	3(66)	17
	Royersford	Collegeville Montessori Academy Sixth Ave. and Church St.	MS42	SE	3-4	34	3	1(72)[4]	3
	Limerick	West-Mont Area Vocational Technical School 77 Gratersford Road	MS43	E	4-5	300	41	5(72)[4]	40
	Limerick	Limerick Chapel Christian Academy - 378 W. Ridge Pike	MS44	E	3-4	458	26	2(15) 2(53) 1(6) 6(66)	26
	Spring City in Chester	St. Joseph's Kindergarten 280 Schuylkill Road	MS45	SSE	3-4	25	1	1(72)[4]	1
	Royersford	Sacred Heart Elementary School Lewis Road and Washington St.	MS46	SE	3-4	244	10	4(72)[4]	10
Upper Perkiomen	Green Lane	Green Lane Elementary School Route 63 and Ridge Rd.	MS47	NE	10-11	209	12	4(66)	12
NA	Lower Providence	St. Gabriel's Hall Audubon Road	MS48	SE	10-11	185 185[5]	18	1(72) 2(60)	18
NA	Lower Salford	New Life Youth & Family Services Freeman's School Road	MS49	ENE	9-10	79 40[6]	47 40[6]	5(10) 1(60)	47
NA	Collegeville	Ursinus College Main Street	MS50	ESE	7-8	1863 1863[5]	343	627(9) 16(40)	343
					SUBTOTALS	3605	518		

1. Sources: School District Radiological Emergency Response Plan data, updated by Energy Consultants, Inc., March 1984.
   L.E.A. list of Nursery Schools and Day Care Centers.
2. Vehicle demand, number available (capacity), reported in School District RERP, Resources Required for Evacuation.
3. Assuming 1 faculty member per vehicle.
4. Vehicle demand, number available (capacity), reported by Energy Consultants Inc., March 1984. Capacity assumed to be 72 students per bus.
5. Residential school winter weeknight population.
6. Residential school winter weeknight and summer weekend population.

NA - Not Applicable

SCHOOL EVACUATION ROUTES

BERKS COUNTY SCHOOL DISTRICTS

BOYERTOWN AREA SCHOOL DISTRICT

Boyertown Area Senior High School:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown University in Kutztown.

Boyertown Area Junior High School - East:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown University in Kutztown.

Boyertown Area Junior High School - West:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown University in Kutztown.

Boyertown Elementary School:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown University in Kutztown.

Colebrookdale Elementary School:

Local roads to Rt. 562 south to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown Area Junior High School in Kutztown.

Gilbertsville Elementary School;

Congo Road to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown Area Junior High School in Kutztown.

New Hanover/Upper Frederick Elementary School:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown Area Junior High School in Kutztown.

Pine Forge Elementary School:

Local roads to Rt. 662 North to Rt. 222 North to Kutztown Area Junior High School in Kutztown.

Montessori Academy of Pennsylvania:

Local roads to Rt. 562 North to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown Area Junior High School in Kutztown.

Wayside Christian School:

Sweinhart Rd. to Grosser Rd. to Rt. 100 North to Rt. 73 West to Administrator's Home in Pikeville.

Pine Forge Academy:

Local roads to Rt. 662 North to Rt. 73 West to Rt. 61 North to Blue Mountain Academy in Hamburg.

Pine Forge Seventh Day Adventist Elementary School:

Local roads to Rt. 662 Nortn to Rt. 73 West to Rt. 61 North to Blue Mountain Academy in Hamburg.

Lincoln School:

Local roads to Rt. 73 West to Rt. 662 North to Rt. 222 North to Kutztown University in Kutztown.

DANIEL BOONE AREA SCHOOL DISTRICT

Amity Elementary School:

Airport Rd. to Rt. 422 West to Rt. 82 South to Rt. 724 West to Daniel Boone Junior-Senior High School in Birdsboro;

or

Local roads to Rt. 662 South to Rt. 422 West to Rt. 724 West to Daniel Boone Junior-Senior High School in Birdsboro.

CHESTER COUNTY SCHOOL DISTRICTS

DOWNINGTOWN AREA SCHOOL DISTRICT

Upattinas Open Community School:

Local roads to Rt. 100 South to West Chester University (under development).

OWEN J. ROBERTS SCHOOL DISTRICT

Owen J. Roberts High School:

Cadmus Rd. to Rt. 100 South to Rt. 23 West to Twin Valley High School (under development).

Owen J. Roberts Middle School:

Cadmus Rd. to Rt. 100 South to Rt. 23 West to Twin Valley High School (under development).

East Coventry Elementary School:

Sanatoga Rd. to Cederville Rd. to School House Rd. to Porter's Mill Rd. to Cadmus Rd. to Rt. 100 South to Rt. 23 West to Twin Valley Elementary School (under development).

Vincent Elementary School:

Local roads to Rt. 23 West to Twin Valley Elementary School (under development).

French Creek Valley Elementary School:

Warwick Rd. to Rt. 23 West to Rt. 10 South to Rt. 322 East to Honey Brook Elementary School (under development).

Warwick Elementary School:

Local roads to Rt. 23 West to Rt. 10 South to Rt. 322 East to Honey Brook Elementary School (under development).

North Coventry Elementary School:

West Chester Pike South to Rt. 23 West to Twin Valley Elementary School (under development).

Kimberton Farm School:

Local roads to Rt. 113 South to Gordon Dr. to Rt. 100 South to West Chester University (under development).

PHOENIXVILLE AREA SCHOOL DISTRICT

Phoenixville Area Senior High School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

Phoenixville Area Junior High School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

East Pikeland Elementary School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

Samuel K. Barkley Elementary School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

Second Avenue Elementary School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

Schuylkill Elementary School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

CHESTER COUNTY PRIVATE SCHOOLS

Valley Forge Christian College:

Local roads to Rt. 29 South to Rt. 30 East to West Chester University (under development).

Liberty Forge School:

Local roads to Rt. 23 East to Chester County Child Development in Coatesville;

or

Local roads to Rt. 29 South to Chester County Child Development in Coatesville.

Holy Trinity School:

Local roads to Rt. 23 East to Rt. 202 South to Immaculata College in East Whiteland;

or

Local roads to Rt. 29 South to Rt. 202 South to Immaculata College in East Whiteland.

Saint Ann School:

Local roads to Rt. 23 East to Rt. 202 South to Immaculata College in East Whiteland;

or

Local roads to Rt. 29 South to Rt. 202 South to Immaculata College in East Whiteland.

Saint Basil the Great Elementary School:

Local roads to Rt. 113 South to Gordon Drive to Rt. 100 South to Rt. 202 South to Immaculata College in East Whiteland.

Saint Mary of the Assumption School:

Local roads to Rt. 23 East to Rt. 202 South to Immaculata College in East Whiteland;

or

Local roads to Rt. 29 South to Rt. 202 South to Immaculata College in East Whiteland.

Northern Chester County Technical School:

Local roads to Rt. 29 South to Rt. 30 East to Tredyffrin/Easttown School District.

MONTGOMERY COUNTY SCHOOL DISTRICTS

METHACTON SCHOOL DISTRICT

Arcola Intermediate School:

Eagleville Rd. to Visitation Rd. to Fern Rd. to Ridge Pike to Grange Ave., to Rt. 422 East to Kriebel Mill Rd. to Methacton Senior High School in Worcester.

Arrowhead Elementary School:

Level Rd. to Evansburg Rd. to Norristown Pike to Kriebel Mill Rd. to Methacton Senior High School in Worcester.

Audubon Elementary School:

Egypt Rd. to Park Ave. to Rt. 422 East to Kriebel Mill Rd. to Methacton Senior High School in Worcester.

Eagleville Elementary School:

Summit Rd. to Ridge Pike to Smith Rd. to Rt. 422 East to Kriebel Mill Rd. to Methacton Senior High School in Worcester.

Woodland Elementary School:

Woodland Ave. to Miami Ave. to Park Ave. to Rt. 422 East to Kriebel Mill Rd. to Methacton Senior High School in Worcester.

PERKIOMEN VALLEY SCHOOL DISTRICT

Perkiomen Valley High School:

Local roads to Rt. 29 South to Rt. 113 North to Rt. 73 East to Bustard Rd. North to Rt. 63 East to Rt. 363 North to North Penn High School in Lansdale (under development);

or

Local roads to Rt. 29 North to Rt. 73 East to Bustard Rd. North to Rt. 63 East to Rt. 363 North to North Penn High School in Lansdale (under development).

Perkiomen Valley Middle School:

Main St. to Rt. 113 North to Rt. 73 East to Bustard Rd. North to Rt. 63 East to Rt. 363 North to North Penn High School in Lansdale (under development).

Perkiomen Valley Elementary School - South:

Third Ave. to Main St. to Rt. 422 East to Rt. 363 North to North Penn High School in Lansdale (under development).

Perkiomen Valley Elementary School - North:

Perkiomen Ave. to Rt. 29 South to Rt. 73 East to Rt. 363 North to North Penn High School in Lansdale (under development).

Saint Mary's School:

Spring Mount Rd. to Schwenksville Rd. to Rt. 63 East to Corpus Christi School in Lansdale.

Saint Eleanore School:

Local roads to Rt. 422 East to Rt. 363 North to Rt. 63 East to Corpus Christi School in Lansdale.

Twin Acres Country Day School:

Local roads to Rt. 422 East to Rt. 363 North to Rt. 63 West to Lansdale Christian Academy in Lansdale (under development).

Bright Spot Kindergarten:

Local roads to Rt. 422 East to Rt. 363 North to Rt. 63 West to Lansdale Christian Academy in Lansdale (under development).

POTTSGROVE SCHOOL DISTRICT

Pottsgrove High School:

Kauffman Rd. to Buchert Rd. to Keim St. to Rt. 663 North to Rt. 309 North to Southern Lehigh High School in Center Valley (under development).

Pottsgrove Intermediate School:

Buchert Rd. to Keim Rd. to Rt. 663 North to Rt. 309 North to Southern Lehigh High School in Center Valley (under development).

West Pottsgrove Elementary School:

Center St. to Grosstown Rd. to Berks St. to Glasgow Rd. to Shoemaker Rd. to Rt. 100 North to Rt. 73 East to Rt. 663 North to Rt. 309 North to Southern Lehigh High School in Center Valley (under development).

Ringing Rocks Elementary School:

Kauffman Rd. to Buchert Rd. to Keim St. to Rt. 663 North to Rt. 309 North to Southern Lehigh High School in Center Valley (under development).

Lower Pottsgrove Elementary School:

Buchert Rd. to Keim Rd. to Rt. 663 North to Rt. 309 North to Southern Lehigh High School in Center Valley (under development).

Saint Gabriel's School:

Fairview St. to Center St. to Grosstown Rd. to Berks St. to Glasgow Rd. to Shoemaker Rd. to Rt. 100 North to Rt. 29 North to Sixth St. to Saint Ann School in Emmaus.

Saint Piux X High School:

Keim St. to Buchert Rd. to Kauffman Rd. to Pottsgrove School Rd. to Rt. 663 North to Rt. 309 North to Allentown College in Center Valley.

Greater Pottstown Christian Academy:

Secondary Rd. to Rt. 100 North to Kings Highway Elementary School in Old Zionsville (under development).

West-Mont Christian Academy:

Ridge Pike to Pleasant View Rd. to Buchert Rd. to Kauffman Rd. to Pottsgrove School Rd. to Rt. 663 North to Maugers Rd. to Rt. 100 North to Kings Highway Elementary School in Old Zionsville (under development).

POTTSTOWN SCHOOL DISTRICT

Pottstown Senior High School:

Adams St. to Wilson St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus High School in Emmaus (under development).

Pottstown Junior High School:

East St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus High School in Emmaus (under development).

Edgewood Elementary School:

Jackson St. to Wilson St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development);

or

Beech St. to Keim St. to Jackson St. to Wilson St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development).

Franklin Elementary School:

Washington St. to Wilson St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development).

Lincoln Elementary School:

York St. to Reynolds St. to State St. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development).

Rupert Elementary School:

Mt. Vernon St. to Cherry St. to Center St. to Keim St. to Jackson St. to Willow St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development).

Elizabeth Barth Elementary School:

Walnut St. to Berks St. to Glasgow St. to Snoemaker Rd. to Rt. 100 North to Rt. 29 North to Emmaus Junior High School in Emmaus (under development).

Saint Aloysius School:

Hanover St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Hamilton Blvd. to St. Thomas Moore School (under development).

Saint Peter's School:

Cherry St. to Centre St. to Keim St. to High St. to Hanover St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Sixth St. to Saint Ann School in Emmaus.

Wyndcroft School:

Rosedale Dr. to High St. to Hanover St. to Farmington Ave. to Rt. 100 North to Rt. 29 North to Hamilton Ave. to 24th St. to The Swain School.

The Hill School:

Warren St. to High St. to Hanover St. to Farmington Ave. to Rt. 100 North to Rt. 22 East to Pine St. to Catasauqua Area Senior High School in Catasauqua.

SOUDERTON AREA SCHOOL DISTRICT

Salford Hills Elementary School:

Old Sumneytown Pike to Sumneytown Pike East to Rt. 363 North to North Penn Senior High School in Lansdale (under development).

SPRING-FORD AREA SCHOOL DISTRICT

Spring-Ford Senior High School:

Lewis Rd. North to Township Line Rd. to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Spring-Ford Middle School:

Washington St. to Ninth St. to Township Line Rd. to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Oaks Elementary School:

Greentree Rd. to Egypt Rd. to Pawlings Rd. to Audubon Rd. to Rt. 363 North to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Spring-City Elementary School:

Wall St. to Pikeland Ave. to Rt. 724 South to Rt. 23 East to Rt. 363 North to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Royersford Elementary School - Fourth Ave.:

Washington St. to Ninth St. to Township Line Rd. to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Royersford Elementary School - Fifth Ave.:

Washington St. to Ninth St. to Township Line Rd. to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Limerick Elementary School:

Limerick Center Rd. to Rt. 422 East to Plymouth-Whitemarsh Senior High School in Whitemarsh (under development).

Sacred Heart School:

Lewis Rd. to Township Line Rd. to Ridge Pike to Rt. 422 East to Saint Philip Neri School in LaFayette Hill.

Limerick Chapel Christian Academy:

Local roads to Rt. 422 East to Rt. 363 North to Calvery Baptist School in Lansdale (under development).

West-Mont Vocational-Technical School:

Graterford Rd. to Ziegler Rd. to Swamp Pike to Rt. 663 North to Montgomery Ave. to Eleventh St. to Wait Rd. to School St. to Upper Perkiomen Senior High School in Red Hill (under development).

Collegeville Montessori Academy:

Local roads to Rt. 422 East to Rt. 363 North to Rt. 63 West to Lansdale Christian Academy in Lansdale (under development).

Saint Joseph Kindergarten:

Schuylkill Rd. to Bridge St. to Main St. to Township Line Rd. to Ridge Pike to Rt. 422 East to Saint Philip Neri School in LaFayette Hill.

UPPER PERKIOMEN SCHOOL DISTRICT

Green Lane Elementary School:

Local roads to Sumneytown Pike East to Rt. 363 North to North Penn Senior High School in Lansdale (under development).

MONTGOMERY COUNTY PRIVATE SCHOOLS

Saint Gabriel's Hall:

Local roads to Rt. 363 South to Rt. 76 East to Host Facility (under development).

New Life Youth and Family Services, Inc.:

Local roads to Rt. 113 North to Host Facility (under development).

Ursinus College:

Local roads to Rt. 422 East to Rt. 76 East to Host Facility (under development).

APPENDIX 10

ROADWAY NETWORK LISTING AND CAPACITIES

NETWORK LISTING

LINK	FRM	TO	LEN	AW	LW	SW	L	PR	LT	AT	PK	SPD	JAM	PRF	FCAP	STR	SPLT	CAP	RGT	SPLT	CAP	LFT	SPLT	CAP	DIAG	SPLT	CAP	FLOW
146	55	32	3100	20	10	2	2	1	4	1	F	28	170	1.00	1190	504	0 70	612	0	0 0	0	0	0 0	0	0	0 0	0	0
145	56	55	4500	20	10	2	2	1	4	1	F	24	194	1.00	1190	32	0 0	612	0	0 0	0	0	0 0	0	0	0 0	0	0
144	57	31	4600	11	11	0	2	1	4	1	F	21	253	0.95	1330	0	0 0	626	106	2 00	840	0	0 0	0	0	0 0	0	0
186		407	1300	20	10	0	2	1	5	1	T	24	203	0.85	1246	56	0 0	612	0	0 0	0	0	0 0	0	0	0 0	0	0
143	58	57	2300	26	10	0	2	1	5	1	T	24	195	1.00	1162	407	0 0	556	0	0 0	0	31	2 00	840	0	0 0	0	0
120	59	33	1700	24	12	6	2	1	7	4	F	31	199	1.00	1490	0	0 0	1073	0	0 0	0	0	0 0	0	408	0 0	1073	0
163	60	23	6100	12	12	6	1	1	7	4	F	31	199	0.95	1400	76	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
190		501	1800	12	12	3	1	1	7	4	F	31	194	0.85	1400	820	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
100	61	24	11200	12	12	2	1	1	7	4	F	31	192	1.00	1400	60	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
97	62	26	1400	12	12	2	1	1	4	4	F	24	219	1.00	1344	25	0 0	866	0	0 0	0	0	0 0	0	0	0 0	0	0
96	63	62	3000	20	12	6	1	1	5	4	T	24	215	1.00	1316	26	0 0	1050	0	0 0	0	0	0 0	0	0	0 0	0	0
95	64	63	6900	12	12	2	1	1	4	4	F	31	171	1.00	1344	0	0 0	866	0	0 0	0	0	0 0	0	62	0 0	866	0
117	65	77	9700	14	14	2	1	1	7	4	F	31	231	1.00	1400	809	0 60	1294	0	0 0	0	0	0 0	0	0	0 0	0	0
116	66	65	12600	12	12	2	1	1	7	4	F	31	192	1.00	1400	77	0 60	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
123	67	34	5900	24	12	2	2	1	4	4	F	24	219	1.00	1344	0	0 0	936	0	0 0	0	0	0 0	0	409	0 0	936	0
162	68	418	4600	26	13	6	2	1	7	4	F	31	219	1.00	1400	19	0 0	1169	0	0 0	0	0	0 0	0	0	0 0	0	0
92	69	27	15900	12	12	6	1	1	7	4	F	38	163	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	26	0 0	1137	0
58	70	80	2700	28	10	0	2	1	5	4	T	24	190	1.00	1162	19	0 0	752	0	0 0	0	0	0 0	0	0	0 0	0	0
54	71	168	8200	24	12	6	2	1	4	4	F	21	267	1.00	1400	0	0 0	936	0	0 0	0	0	0 0	0	68	0 0	936	0
89	72	22	19460	12	12	4	1	1	7	4	F	31	196	1.00	1400	54	0 71	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
56	73	46	4900	24	12	6	2	1	4	4	F	21	267	1.00	1400	70	0 0	936	0	0 0	0	0	0 0	0	0	0 0	0	0
69	74	403	5800	24	12	6	2	1	7	4	F	31	199	1.00	1400	436	0 0	1073	0	0 0	0	0	0 0	0	0	0 0	0	0
88	75	72	3900	12	12	2	1	1	4	4	F	21	256	1.00	1344	0	0 0	866	0	0 0	0	0	0 0	0	22	0 0	866	0
107	76	808	1000	12	12	6	1	1	7	4	F	38	163	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
118	77	809	1000	12	12	6	1	1	7	4	F	31	199	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
182	78	821	1000	14	14	6	2	1	7	2	F	24	256	1.00	1400	0	0 0	647	0	0 0	0	0	0 0	0	0	0 0	0	0
142	79	58	7500	26	10	6	2	1	4	1	F	24	203	1.00	1245	57	0 0	817	0	0 0	0	0	0 0	0	0	0 0	0	0
59	80	19	10100	20	10	1	2	1	7	4	F	24	192	0.90	1176	0	0 0	882	0	0 0	0	0	0 0	0	18	0 0	882	0
179		418	5000	12	12	6	2	1	7	4	F	21	299	0.10	1400	0	0 0	1137	0	0 0	0	0	0 0	0	19	0 0	1137	0
50	100	411	1750	12	12	2	2	1	4	3	F	31	171	1.00	1344	0	0 0	433	0	0 0	0	0	0 0	0	9	1 00	433	0
44	101	11	10250	12	12	2	1	1	7	4	F	17	346	1.00	1490	10	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
46	102	11	9400	11	11	2	1	1	7	4	F	31	172	1.00	1358	0	0 0	1058	0	0 0	0	0	0 0	0	0	0 0	0	0
29	103	12	10650	12	12	5	1	1	7	2	F	38	161	1.00	1400	8	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
13	104	4	16950	12	12	4	1	1	7	4	F	38	160	1.00	1400	120	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
9	105	45	4400	11	11	2	1	1	7	1	F	38	141	1.00	1358	801	0 0	1058	0	0 0	0	0	0 0	0	0	0 0	0	0
153	106	42	32000	12	12	2	1	1	7	4	F	31	192	1.00	1400	121	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
3	107	1	13520	12	12	4	1	1	7	4	F	38	160	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	2	0 64	1137	0
2	108	1	6750	10	10	2	1	1	7	4	F	35	136	1.00	1190	2	0 36	980	0	0 0	0	0	0 0	0	0	0 0	0	0
22	109	802	1000	15	14	6	1	1	7	2	F	38	195	1.00	1400	0	0 0	1372	0	0 0	0	0	0 0	0	0	0 0	0	0
36	110	803	1000	12	12	6	1	1	7	2	F	33	163	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
42	111	410	500	20	10	6	2	1	1	4	F	21	243	1.00	1274	0	0 0	798	0	0 0	0	0	0 0	0	9	0 0	798	0
25	112	13	11800	12	12	6	1	1	4	3	F	38	145	1.00	1400	103	0 0	866	0	0 0	0	0	0 0	0	0	0 0	0	0
76	113	405	500	12	10	6	1	1	1	4	F	21	243	0.95	1274	0	0 0	924	0	0 0	0	0	0 0	0	114	0 0	924	0
183		503	500	20	13	6	1	1	1	4	F	21	275	0.05	1400	0	0 0	1400	0	0 0	0	0	0 0	0	111	0 0	1400	0
78	114	406	500	12	10	6	1	1	1	4	F	21	243	0.95	1274	0	0 0	924	0	0 0	0	0	0 0	0	434	0 0	924	0
185		822	1000	24	12	6	2	1	6	1	F	38	145	0.05	1400	0	0 0	1073	0	0 0	0	0	0 0	0	0	0 0	0	0
11	116	45	18050	10	16	2	1	1	7	4	F	31	151	1.00	1190	0	0 0	980	0	0 0	0	801	0 0	0	0	0 0	0	0
18	117	5	8900	9	9	2	1	1	7	4	F	28	146	1.00	1022	0	0 0	902	0	0 0	0	0	0 0	0	6	0 0	902	0
28	118	122	2400	24	12	6	2	1	4	1	F	28	200	0.95	1400	0	0 0	749	0	0 0	0	0	0 0	0	119	0 0	749	0
189		103	2100	24	12	6	2	1	4	1	F	28	200	0.05	1400	0	0 0	749	0	0 0	0	0	0 0	0	12	0 38	749	0
38	119	14	15500	11	11	2	1	1	4	2	F	38	132	1.00	1274	128	0 0	783	0	0 0	0	0	0 0	0	0	0 0	0	0
16	120	5	9600	12	12	6	1	1	7	3	F	38	161	1.00	1400	6	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
156	121	813	1000	11	11	6	1	1	7	4	F	35	162	1.00	1400	0	0 0	1058	0	0 0	0	0	0 0	0	0	0 0	0	0
27	122	119	2900	15	14	2	1	1	4	1	F	21	283	1.00	1400	14	0 0	892	0	0 0	0	0	0 0	0	0	0 0	0	0
77	126	434	1000	12	12	6	1	1	4	2	F	21	267	1.00	1400	0	0 0	866	0	0 0	0	0	0 0	0	406	0 0	1500	0

NETWORK LISTING

LINK	FRM	TO	LEN	AW	LW	SW	L	PR	LT	AT	PK	SPD	JAM	PRF	FCAP	STR	SPLT	CAP	RGT	SPLT	CAP	LFT	SPLT	CAP	DIAG	SPLT	CAP	FLOW
41	128	111	11300	24	12	2	2	1	7	2	F	28	216	1.00	1400	0	0 0	1073	0	0 0	0	0	0 0	0	410	0 0	1073	0
86	130	21	6000	9	9	6	1	1	7	4	F	21	295	1.00	1078	0	0 0	902	0	0 0	0	0	0 0	0	22	0 0	902	0
84	131	20	9200	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	21	0 59	980	0
105	132	501	12300	10	10	6	1	1	7	4	F	21	237	1.00	1246	23	0 0	980	820	0 0	0	0	0 0	0	0	0 0	0	0
101	133	24	8300	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	60	0 0	980	0
93	134	27	16000	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	26	0 0	1137	0
114	135	28	8100	14	14	6	1	1	7	4	F	21	357	1.00	1400	0	0 0	1294	0	0 0	0	0	0 0	0	66	0 0	1294	0
112	136	29	8500	24	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1400	0	0 0	0	0	0 0	0	47	1 00	1400	0
108	137	30	9700	20	10	6	2	1	7	4	F	21	237	1.00	1246	0	0 0	882	0	0 0	0	0	0 0	0	29	0 0	882	0
110	138	30	11300	20	12	6	2	1	7	4	F	21	299	1.00	1400	29	0 0	882	0	0 0	0	0	0 0	0	0	0 0	0	0
119	139	59	5800	12	12	6	1	1	7	4	F	21	299	1.00	1400	33	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
127	140	35	6800	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	36	0 0	980	0
128	141	35	6000	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	36	0 0	980	0
139	142	402	4800	12	12	6	1	1	4	4	F	21	267	1.00	1400	0	0 0	866	0	0 0	0	0	0 0	0	44	0 0	866	0
134	143	39	6600	12	12	6	1	1	7	4	F	21	299	1.00	1400	43	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
135	144	39	2500	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	43	0 0	1137	0
131	145	40	11800	9	9	6	1	1	7	4	F	21	295	1.00	1078	0	0 0	902	0	0 0	0	0	0 0	0	43	0 0	902	0
147	146	32	4900	10	10	6	1	1	4	4	F	21	237	1.00	1246	0	0 0	766	0	0 0	0	0	0 0	0	504	0 30	766	0
132	147	40	6500	12	12	6	1	1	7	4	F	21	299	1.00	1400	43	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
149	148	41	5100	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	812	0 0	980	0
154	149	42	6700	11	11	6	1	1	7	4	F	21	269	1.00	1400	0	0 0	1058	0	0 0	0	0	0 0	0	121	0 0	1058	0
151	150	31	7200	11	11	6	1	1	4	4	F	21	253	1.00	1330	106	0 0	783	0	0 0	0	0	0 0	0	0	0 0	0	0
7	151	3	7600	11	11	6	1	1	7	4	F	21	269	1.00	1400	0	0 0	1058	0	0 0	0	0	0 0	0	105	0 0	1058	0
5	152	2	5400	9	9	6	1	1	7	4	F	21	295	1.00	1078	0	0 0	902	0	0 0	0	0	0 0	0	3	0 0	902	0
1	153	108	14200	11	11	6	1	1	7	4	F	21	269	1.00	1400	1	0 0	1058	0	0 0	0	0	0 0	0	0	0 0	0	0
14	154	4	5750	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0 0	980	0	0 0	0	0	0 0	0	120	0 0	980	0
10	155	116	21300	11	11	6	1	1	7	4	F	21	269	1.00	1400	45	0 0	1058	0	0 0	0	0	0 0	0	0	0 0	0	0
20	156	6	6000	11	11	6	1	1	7	4	F	21	269	1.00	1400	0	0 0	1058	0	0 0	0	0	0 0	0	109	0 0	1058	0
17	157	117	17850	9	9	6	1	1	7	4	F	21	295	1.00	1078	5	0 0	902	0	0 0	0	0	0 0	0	0	0 0	0	0
32	158	8	5800	11	11	6	1	1	7	4	F	21	269	1.00	1400	0	0 0	1058	0	0 0	0	0	0 0	0	7	0 0	1058	0
34	159	7	5550	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	110	0 20	1137	0
30	160	12	5400	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	8	0 0	1137	0
45	161	102	19000	12	12	6	1	1	7	4	F	21	299	1.00	1400	11	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
48	162	10	9300	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0 0	1137	0	0 0	0	0	0 0	0	100	0 0	1137	0
39	163	14	7500	10	10	6	1	1	4	4	F	21	237	1.00	1246	0	0 0	766	0	0 0	0	0	0 0	0	128	0 0	766	0
71	164	16	8000	24	12	6	1	1	7	4	F	21	229	0.95	1400	0	0 0	1073	0	0 0	0	0	0 0	0	15	0 0	1073	0
181		420	5000	12	12	6	1	1	7	4	F	21	299	0.05	1400	0	0 0	1137	0	0 0	0	78	0 0	0	0	0 0	0	0
163	165	419	4500	14	14	6	2	1	7	2	F	24	306	1.00	1400	78	0 0	647	0	0 0	0	0	0 0	0	0	0 0	0	0
62	166	17	4100	18	9	6	2	1	4	4	F	21	295	0.90	1078	0	0 0	682	0	0 0	0	0	0 0	0	50	0 0	682	0
180		51	4000	12	12	6	1	1	4	4	F	21	267	0.10	1400	0	0 0	866	0	0 0	0	0	0 0	0	52	0 0	866	0
61	167	18	3600	9	9	6	1	1	4	4	F	21	295	1.00	1078	0	0 0	617	0	0 0	0	0	0 0	0	15	0 0	617	0
53	168	68	7000	20	10	6	2	1	4	4	F	21	237	1.00	1246	418	0 0	766	0	0 0	0	0	0 0	0	0	0 0	0	0
26	169	13	15500	24	12	6	2	1	4	4	F	21	267	1.00	1400	0	0 0	936	0	0 0	0	0	0 0	0	103	0 0	936	0
81	400	416	500	12	10	6	1	1	7	4	F	21	243	1.00	1274	0	0 0	924	0	0 0	0	0	0 0	0	895	0 0	1500	0
83	401	20	5900	12	12	6	1	1	7	4	F	21	299	1.00	1400	21	0 41	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
140	402	44	43100	12	12	4	2	1	7	4	F	38	160	1.00	1400	811	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
79	403	436	13850	24	12	6	2	1	7	4	F	31	199	1.00	1400	0	0 0	1073	0	0 0	0	0	0 0	0	437	0 0	1073	0
158	404	33	10000	12	12	6	1	1	7	4	F	38	163	1.00	1400	408	0 0	1137	0	0 0	0	0	0 0	0	0	0 0	0	0
77	405	114	1000	24	12	6	2	1	6	1	F	38	145	1.00	1400	822	0 0	1073	0	0 0	0	0	0 0	0	406	0 0	1073	0
79	406	434	2800	24	12	6	2	1	4	1	F	24	229	1.00	1400	400	0 0	749	0	0 0	0	0	0 0	0	0	0 0	0	0
109	407	56	1600	20	10	6	2	1	4	1	F	24	203	1.00	1246	55	0 0	612	0	0 0	0	0	0 0	0	0	0 0	0	0
122	408	409	16100	24	12	6	2	1	7	4	F	38	163	1.00	1400	37	0 0	1073	0	0 0	0	0	0 0	0	0	0 0	0	0
125	409	37	6300	24	12	6	2	1	7	4	F	38	163	1.00	1400	36	0 0	1073	0	0 0	0	0	0 0	0	0	0 0	0	0
43	410	9	20300	24	12	6	2	1	6	2	F	38	145	1.00	1400	804	0 0	1073	0	0 0	0	0	0 0	0	0	0 0	0	0
51	411	9	500	20	10	6	2	1	1	4	F	21	243	1.00	1274	0	0 0	798	0	0 0	0	0	0 0	0	864	0 0	798	0

NETWORK LISTING

LINK	FRM	TO	LEN	AW	LW	SW	L	PR	LT	AT	PK	SPD	JAM	PRF	FCAP	STR	SPLT	CAP	RGT	SPLT	CAP	LFT	SPLT	CAP	DIAG	SPLT	CAP	FL
4	1	2	7700	11	11	5	1	1	7	4	F	38	145	1.00	1400	3	0.0	1058	0	0	0	0	0	0	0	0	0	
6	2	3	10700	11	11	5	1	1	7	4	F	38	145	1.00	1400	105	0.0	1058	0	0	0	0	0	0	0	0	0	
8	3	105	28300	11	11	2	1	1	7	3	F	38	141	1.00	1358	45	0.0	1058	0	0	0	0	0	0	0	0	0	
15	4	120	5400	12	12	4	1	1	7	3	F	38	160	1.00	1400	5	0.0	1137	0	0	0	0	0	0	0	0	0	
19	5	6	4750	12	12	2	1	1	7	3	F	38	157	1.00	1400	109	0.0	1137	0	0	0	0	0	0	0	0	0	
21	6	109	11600	12	12	4	1	1	7	3	F	38	160	1.00	1400	0	0.0	1137	0	0	0	0	0	0	802	0	1137	
35	7	110	10400	12	12	2	1	1	7	2	F	38	157	1.00	1400	803	0.0	1137	0	0	0	0	0	0	0	0	0	
33	8	7	7750	12	12	6	1	1	7	4	F	38	153	1.00	1400	110	0.80	1137	0	0	0	0	0	0	0	0	0	
52	9	804	1000	24	12	6	2	1	6	3	F	38	145	1.00	1400	0	0.0	1073	0	0	0	0	0	0	0	0	0	
49	10	100	7250	12	12	2	1	1	4	4	F	35	154	1.00	1344	411	0.60	866	0	0	0	0	0	0	0	0	0	
47	11	10	1300	12	12	2	1	1	7	3	F	31	192	1.00	1400	100	0.0	1137	0	0	0	0	0	0	0	0	0	
31	12	8	17500	12	12	6	1	1	7	4	F	35	179	1.00	1400	7	0.0	1137	0	0	0	0	0	0	0	0	0	
27	13	103	3700	12	12	2	1	1	4	3	F	31	171	1.00	1344	0	0.0	866	0	0	0	0	0	0	12	0.70	866	
40	14	128	3250	11	11	2	1	1	7	4	F	28	194	1.00	1358	0	0.0	1058	0	0	0	0	0	0	111	1.00	1058	
74	15	420	7000	24	12	6	2	1	4	2	F	24	229	0.95	1400	78	0.0	936	0	0	0	0	0	0	0	0	0	
176		433	800	24	12	6	2	1	7	4	F	24	256	0.95	1400	0	0.0	1073	0	0	0	0	0	0	435	0	1073	
72	16	15	8400	10	10	2	1	1	7	4	F	24	194	1.00	1190	0	0.0	980	0	0	0	420	0	0	433	0	980	
64	17	59	2500	15	12	2	1	1	7	4	F	17	346	1.00	1400	51	0.0	1372	0	0	0	0	0	0	0	0	0	
62	18	17	4700	12	12	2	1	1	7	4	F	28	216	1.00	1400	50	0.0	1137	0	0	0	0	0	0	0	0	0	
60	19	18	10100	11	11	2	1	1	7	4	F	28	194	1.00	1358	17	0.0	1058	0	0	0	0	0	0	0	0	0	
85	20	21	12700	10	10	1	1	1	7	4	F	24	192	1.00	1176	22	0.0	980	0	0	0	0	0	0	0	0	0	
87	21	22	4600	12	12	1	1	1	7	4	F	28	214	1.00	1400	0	0.0	1137	54	1.00	840	0	0	0	0	0	0	
90	22	64	22200	12	12	1	1	1	7	4	F	31	190	1.00	1400	807	0.0	1137	0	0	0	0	0	0	0	0	0	
106	23	76	19700	20	12	6	1	1	7	4	F	38	163	1.00	1400	808	0.0	1400	0	0	0	0	0	0	0	0	0	
102	24	60	8950	24	12	3	1	1	7	4	F	31	194	1.00	1400	501	0.0	1400	0	0	0	23	0	0	0	0	0	
99	25	61	3550	12	12	2	1	1	7	4	F	31	192	1.00	1400	24	0.0	1137	0	0	0	0	0	0	0	0	0	
98	26	25	2500	12	12	2	1	1	4	4	F	24	229	1.00	1400	61	0.0	866	0	0	0	0	0	0	0	0	0	
94	27	26	8600	9	9	3	1	1	7	4	F	21	197	1.00	1036	0	0.0	902	25	0.0	0	0	0	0	0	0	0	
115	28	66	12300	12	12	2	1	1	7	4	F	31	192	1.00	1400	65	0.0	1137	0	0	0	0	0	0	0	0	0	
113	29	47	7900	10	10	6	1	1	7	4	F	31	158	1.00	1246	0	0.0	980	28	0.0	0	0	0	0	0	0	0	
111	30	29	9000	24	12	6	1	1	7	4	F	31	152	1.00	1400	47	0.60	1400	0	0	0	0	0	0	0	0	0	
152	31	108	1800	24	12	6	2	1	4	4	F	28	200	1.00	1400	42	0.0	936	0	0	0	0	0	0	0	0	0	
146	32	504	16550	24	12	6	2	1	7	4	F	38	163	1.00	1400	41	0.0	1073	147	0.0	0	0	0	0	0	0	0	
121	33	408	500	20	10	6	2	1	4	4	F	21	243	1.00	1274	0	0.0	798	0	0	0	0	0	0	409	0	798	
124	34	409	500	20	10	6	2	1	4	4	F	21	243	1.00	1274	0	0.0	798	0	0	0	0	0	0	37	0	798	
129	35	36	4900	10	10	6	1	1	7	4	F	24	203	1.00	1246	0	0.0	980	810	0.0	0	0	0	0	0	0	0	
130	36	810	1900	12	12	6	1	1	7	4	F	24	256	1.00	1400	0	0.0	1137	0	0	0	0	0	0	0	0	0	
126	37	36	13550	12	12	6	2	1	7	4	F	38	163	1.00	1400	810	0.0	568	0	0	0	0	0	0	0	0	0	
138	38	402	5800	12	12	6	1	1	4	4	F	21	267	1.00	1400	44	0.0	866	0	0	0	0	0	0	0	0	0	
136	39	43	17200	10	10	2	1	1	7	4	F	28	170	1.00	1190	0	0.0	980	44	0.0	0	0	0	0	0	0	0	
133	40	43	13200	40	12	6	1	1	7	4	F	28	224	1.00	1400	44	0.0	1400	0	0	0	0	0	0	0	0	0	
150	41	812	1900	24	12	6	2	1	7	4	F	38	163	1.00	1400	0	0.0	1073	0	0	0	0	0	0	0	0	0	
155	42	121	12900	11	11	4	1	1	7	4	F	35	158	1.00	1386	813	0.0	1058	0	0	0	0	0	0	0	0	0	
137	43	44	23800	12	12	3	1	1	7	4	F	35	174	1.00	1400	0	0.0	1137	0	0	0	811	0	0	0	0	0	
141	44	811	1000	12	12	6	1	1	7	4	F	38	163	1.00	1400	0	0.0	1137	0	0	0	0	0	0	0	0	0	
12	45	801	1000	11	11	6	1	1	7	4	F	31	180	1.00	1400	0	0.0	1058	0	0	0	0	0	0	0	0	0	
57	46	70	1000	14	14	6	1	1	4	4	F	17	333	1.00	1400	0	0.0	1032	0	0	0	80	0	61	840	0	0	
157	47	28	1000	14	14	6	1	1	7	4	F	31	238	1.00	1400	0	0.0	1294	0	0	0	66	0	0	0	0	0	
65	50	51	500	15	12	2	1	1	7	4	F	17	346	1.00	1400	0	0.0	1372	0	0	0	0	0	0	52	0	1372	
66	51	52	1000	12	12	2	1	1	7	4	F	24	247	1.00	1400	53	0.0	1137	0	0	0	0	0	0	165	0	1137	
67	52	53	20100	12	12	2	1	1	7	4	F	24	247	0.95	1400	806	0.0	1137	0	0	0	0	0	0	0	0	0	
195		165	2900	14	14	6	2	1	7	2	F	24	306	0.55	1400	419	0.0	647	0	0	0	0	0	0	0	0	0	
68	53	806	1000	12	12	6	1	1	7	4	F	24	256	1.00	1400	0	0.0	1137	0	0	0	0	0	0	0	0	0	
91	54	807	1000	12	12	6	1	1	7	4	F	31	199	1.00	1400	0	0.0	1137	0	0	0	0	0	0	0	0	0	

LINK	FRM	TO	LEN	AW	LW	SW	L	PR	LT	AT	PK	SPD	JAM	PRF	FCAP	STR	SPLT	CAP	RGT	SPLT	CAP	LFT	SPLT	CAP	DIAG	SPLT	CAP	FL
23	412	112	1000	12	12	6	1	1	4	1	F	21	267	1.00	1400	0	0.0	693	0	0.0	0	0	0.0	0	13	0.0	693	
24	413	112	1000	24	12	6	2	1	4	1	F	21	267	1.00	1400	0	0.0	749	0	0.0	0	0	0.0	0	13	0.0	749	
104	414	132	1000	12	12	6	1	1	7	4	F	21	299	1.00	1400	0	0.0	1137	0	0.0	0	0	0.0	0	501	0.0	1137	
159	415	422	1000	10	10	6	1	1	7	4	F	21	237	1.00	1246	0	0.0	980	0	0.0	0	0	0.0	0	37	0.0	980	
82	416	805	10350	24	12	6	2	1	8	1	F	38	145	1.00	1400	0	0.0	1400	0	0.0	0	0	0.0	0	0	0.0	0	
161	417	122	3900	22	11	6	2	1	4	1	F	21	253	1.00	1330	0	0.0	681	0	0.0	0	0	0.0	0	119	0.0	681	
55	418	19	5000	26	13	2	2	1	7	4	F	24	212	1.00	1400	18	0.0	1169	0	0.0	0	0	0.0	0	0	0.0	0	
73	419	78	10000	14	14	6	2	1	7	2	F	24	306	1.00	1400	821	0.80	647	0	0.0	0	0	0.0	0	0	0.0	0	
164	420	78	5800	24	12	6	2	1	4	2	F	24	229	1.00	1400	0	0.0	936	821	1.00	840	0	0.0	0	0	0.0	0	
165	421	57	3000	21	10	6	2	1	4	1	F	21	237	1.00	1246	31	0.0	647	407	0.0	0	0	0.0	0	0	0.0	0	
160	422	37	500	20	10	6	2	1	1	4	F	35	146	1.00	1271	0	0.0	798	0	0.0	0	0	0.0	0	36	0.0	798	
166	423	161	1000	24	12	6	2	1	7	4	F	21	299	1.00	1400	102	0.0	1073	0	0.0	0	0	0.0	0	0	0.0	0	
175	424	71	3000	24	12	6	2	1	4	4	F	21	267	1.00	1400	0	0.0	936	0	0.0	0	0	0.0	0	168	0.0	936	
167	425	402	14000	12	12	6	1	1	4	4	F	21	267	1.00	1400	44	0.0	866	0	0.0	0	0	0.0	0	0	0.0	0	
168	426	402	18600	12	12	6	1	1	4	4	F	21	267	1.00	1400	44	0.0	866	0	0.0	0	0	0.0	0	0	0.0	0	
169	427	142	9700	12	12	6	1	1	4	4	F	21	267	1.00	1400	402	0.0	866	0	0.0	0	0	0.0	0	0	0.0	0	
170	428	142	9900	12	12	6	1	1	4	4	F	21	267	1.00	1400	402	0.0	866	0	0.0	0	0	0.0	0	0	0.0	0	
171	429	121	22800	11	11	4	1	1	7	4	F	28	198	1.00	1386	813	0.0	1058	0	0.0	0	0	0.0	0	0	0.0	0	
172	430	119	20200	12	12	6	1	1	7	4	F	31	299	1.00	1400	59	0.0	1137	0	0.0	0	0	0.0	0	0	0.0	0	
173	431	113	25900	24	12	6	1	1	4	4	F	21	267	1.00	1400	0	0.0	1400	0	0.0	0	0	0.0	0	496	0.0	1400	
174	432	136	9200	12	12	6	1	1	7	4	F	21	299	1.00	1400	29	0.0	1137	0	0.0	0	0	0.0	0	0	0.0	0	
178	433	435	500	12	10	6	1	1	1	4	F	21	243	1.00	1274	0	0.0	924	0	0.0	0	0	0.0	0	113	0.0	924	
80	434	400	8800	24	12	6	2	1	8	4	F	24	229	1.00	1400	0	0.0	1400	0	0.0	0	0	0.0	0	416	0.0	1400	
75	435	113	7650	24	12	6	2	1	1	4	F	24	229	1.00	1400	503	0.0	966	0	0.0	0	0	0.0	0	485	0.0	966	
193	436	437	500	20	10	6	2	1	1	4	F	21	243	1.00	1274	435	0.0	798	0	0.0	0	0	0.0	0	0	0.0	0	
194	437	435	20300	24	12	6	2	1	6	4	F	24	229	1.00	1400	113	0.0	1073	0	0.0	0	0	0.0	0	0	0.0	0	
191	501	829	1000	12	12	3	1	1	7	4	F	31	194	0.95	1400	0	0.0	1137	0	0.0	0	0	0.0	0	0	0.0	0	
192		23	6100	10	10	6	1	1	7	4	F	21	237	0.95	1246	0	0.0	980	0	0.0	0	0	0.0	0	76	0.0	980	
184	503	111	7900	24	12	6	2	1	6	2	F	38	145	1.00	1400	410	0.0	1073	0	0.0	0	0	0.0	0	0	0.0	0	
187	504	147	7900	12	12	6	1	1	7	4	F	21	299	0.95	1400	0	0.0	1137	0	0.0	0	0	0.0	0	40	0.0	1137	
188		41	6300	24	12	6	2	1	7	4	F	38	163	0.95	1400	812	0.0	1073	0	0.0	0	0	0.0	0	0	0.0	0	

```
RUN =    T  =T TO PERFORM A SIMULATION
CHECK =  T  =T TO CHECK INPUT DATA
ECHO =   T  =T TO LIST ALL INPUT DATA
LISTNT = T  =T TO LIST OUT THE NETWORK
EXIT =   T  =T TO LIST ENTRY NODE SPILLBACKS AND DISCHARGES AT EXIT NODES AT REPORTING INTERVALS
FLOWS =  T  =T TO LIST NETWORK DATA AT REPORTING INTERVALS
ALL =    T  =T TO INCLUDE ALL LINKS IN LINK TABLE
SIG =    T  =F TO MAKE ALL INTERSECTIONS UNSIGNALIZED
LIST1 =  F  TO LIST CARS ON A LINK IN LINK TABLE
LIST2 =  T  TO LIST DISCHARGE FROM LINK OVER REPORTING INTERVAL IN LINK TABLE


MAXDEN = 225
TSIM =     0.10
REPORT =  10
INIT =     0.0
TMAX =   600
MLOAD =    1
ADVERS =   0.70
```


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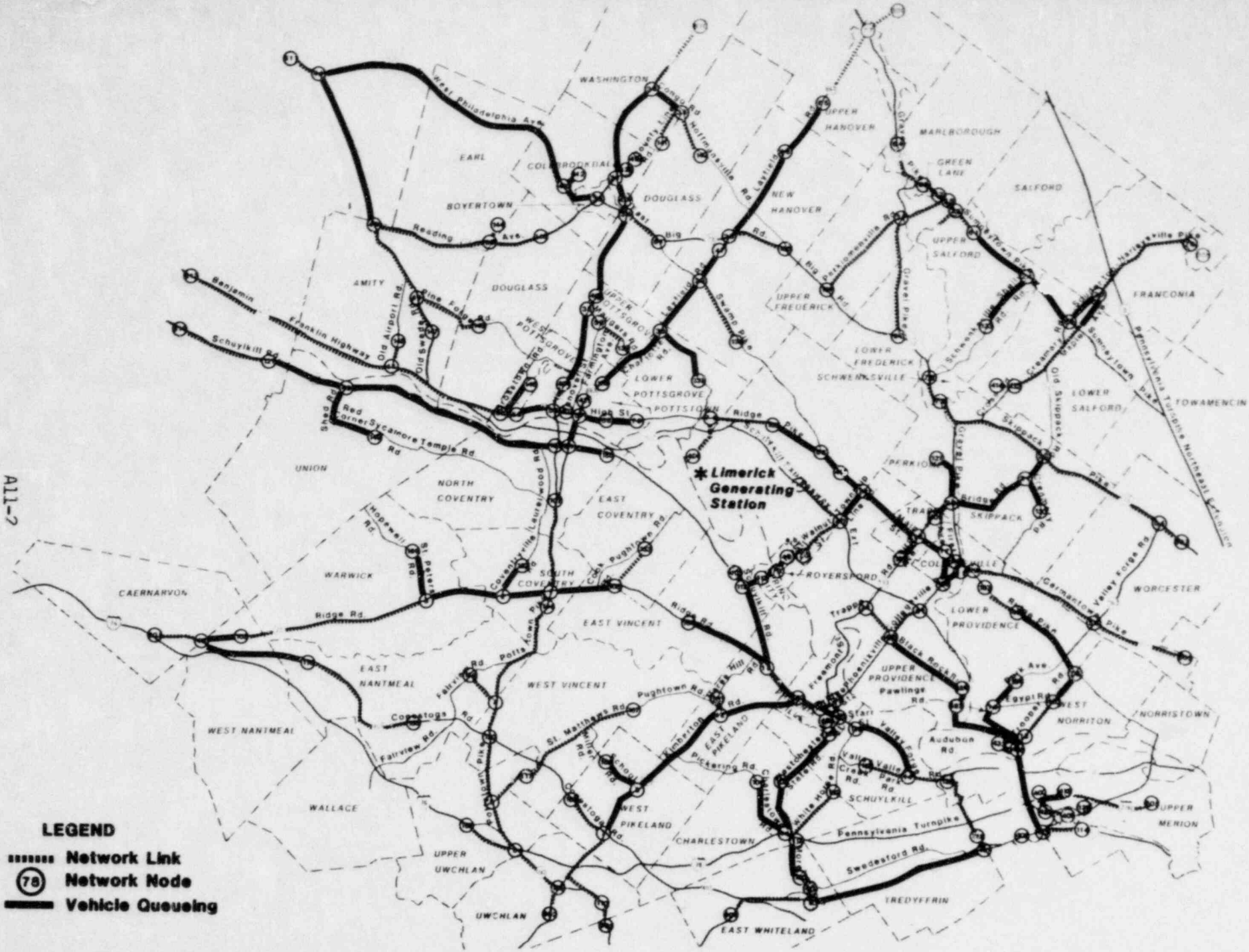
APPENDIX 11

VEHICLE QUEUEING DURING SELECTED PERIODS FOR EVACUATION OF THE LIMERICK GENERATING STATION EPZ UNDER WINTER WEEKDAY FAIR WEATHER CONDITIONS



All-7

VEHICLE QUEUEING AT T = 90 MINUTES UNDER WINTER WEEKDAY, FAIR WEATHER CONDITIONS

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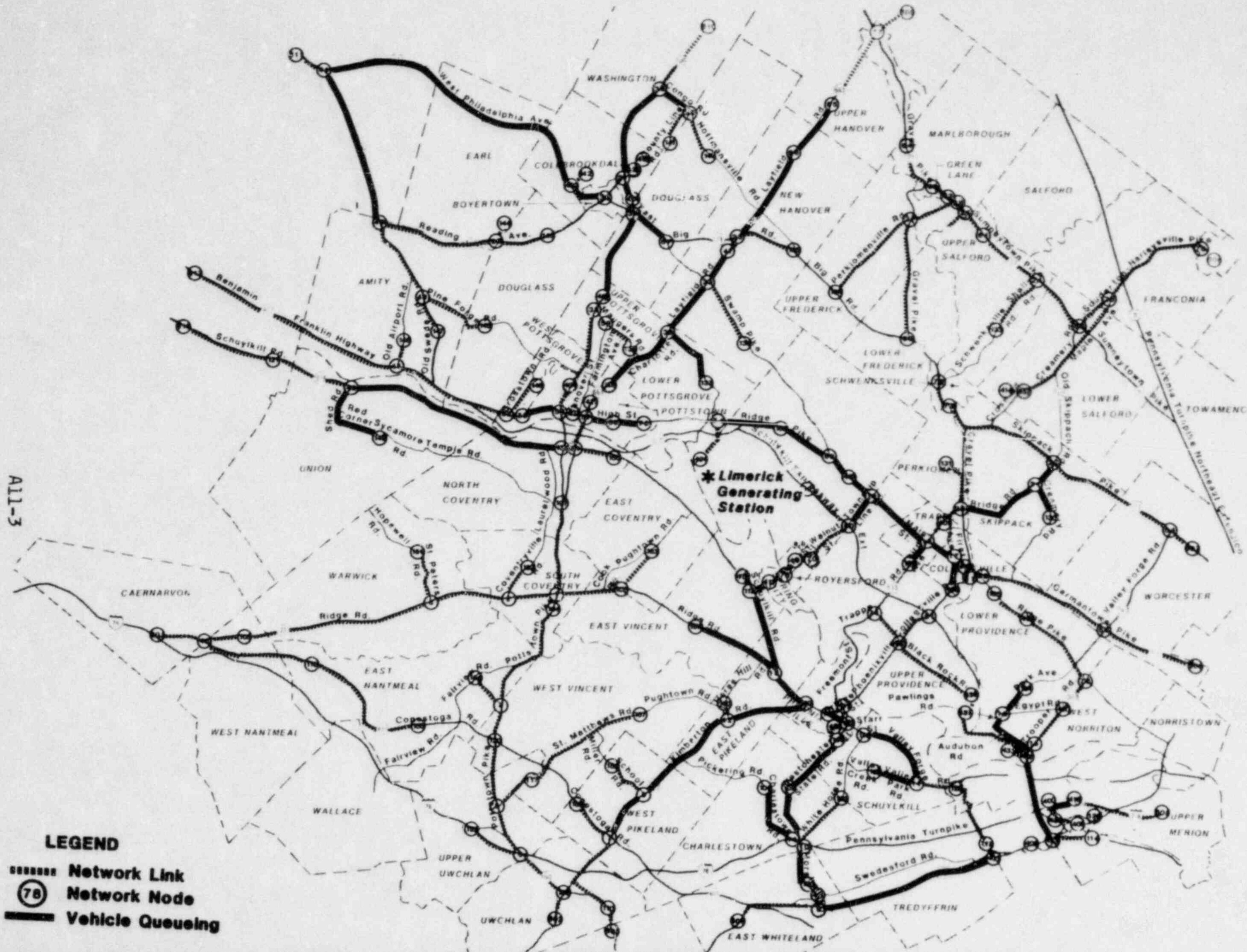
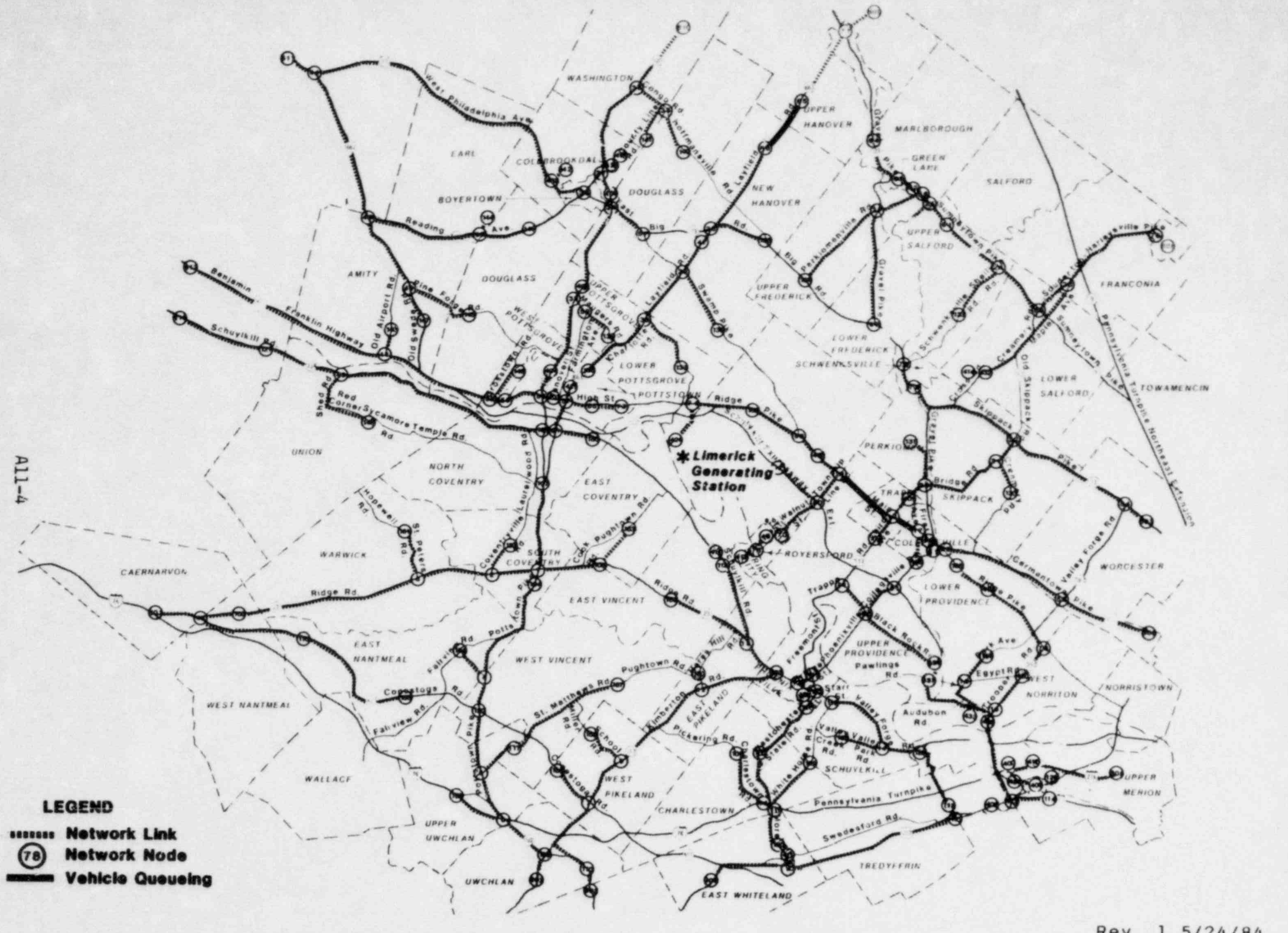
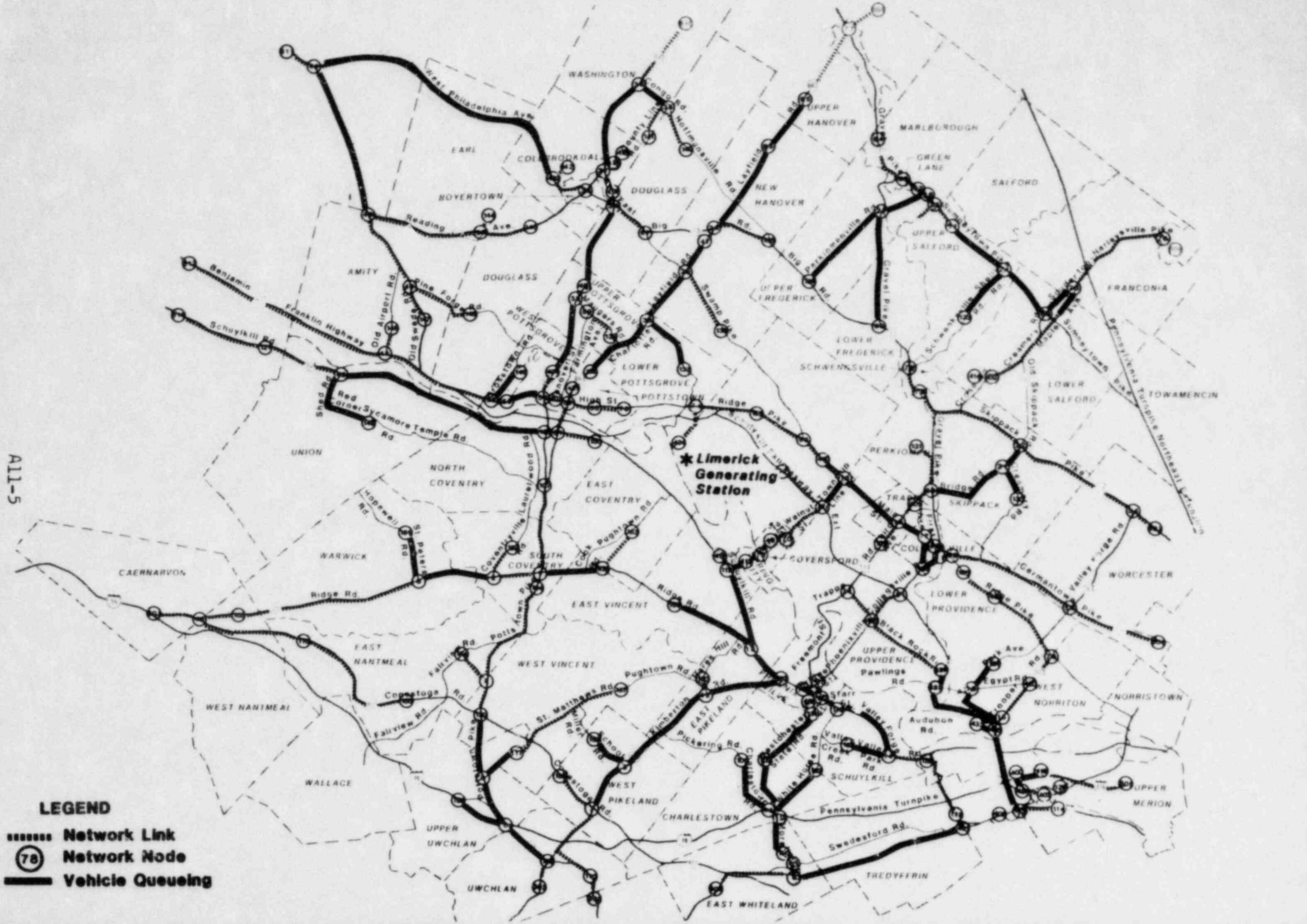


Limerick Generating Station
WASHINGTON
UPPER HANOVER
MARLBOROUGH
GREEN LANE
SALFORD
EARL
COLEBROOKDALE
DOUGLASS
NEW HANOVER
BOYERTOWN
UPPER SALFORD
FRANCONIA
AMITY
DOUGLASS
UPPER FREDERICK
UPPER POTTSGROVE
WEST POTTSGROVE
LOWER POTTSGROVE
POTTSTOWN
LOWER FREDERICK
SCHWENKSVILLE
LOWER SALFORD
TOWAMENCIN
UNION
NORTH COVENTRY
EAST COVENTRY
PERKIOMEN
SKIPPACK
TRAPPE
WARWICK
SOUTH COVENTRY
ROYERSFORD
CAERNARVON
EAST VINCENT
LOWER PROVIDENCE
WORCESTER
EAST NANTMEAL
WEST VINCENT
UPPER PROVIDENCE
WEST NORRITON
NORRISTOWN
WEST NANTMEAL
EAST PIKELAND
SCHUYLKILL
WALLACE
WEST PIKELAND
UPPER MERION
CHARLESTOWN
UPPER UWCHLAN
TREDYFFRIN
UWCHLAN
EAST WHITELAND
West Philadelphia Ave.
Reading Ave.
Benjamin
Franklin Highway
Schuylkill Rd.
Pine Forge Rd.
Old Airport Rd.
Ridge Pike
Swamp Pike
Gravel Pike
Sumneytown Pike
Harleysville Pike
Skippack Pike
Pennsylvania Turnpike Northeast Extension
Germantown Pike
Valley Forge Rd.
Ridge Rd.
Conestoga Rd.
Fairview Rd.
Pughtown Rd.
St. Matthews Rd.
Kimberton Rd.
Pickering Rd.
Pennsylvania Turnpike
Swedesford Rd.
Black Rock Rd.
Pawlings Rd.
Audubon Rd.
Egypt Rd.
Sycamore Temple Rd.
Hopewell Rd.
St. Peters Rd.
Coventryville Rd.
Laurelwood Rd.
Potts Town Pike
LEGEND
Network Link
78 Network Node
Vehicle Queueing



VEHICLE QUEUEING AT T = 270 MINUTES UNDER WINTER WEEKDAY, FAIR WEATHER CONDITIONS

Rev. 1 5/24/84


WASHINGTON
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MARLBOROUGH
EARL
COLEBROOKDALE
DOUGLASS
NEW HANOVER
GREEN LANE
SALFORD
BOYERTOWN
UPPER SALFORD
FRANCONIA
AMITY
DOUGLASS
WEST POTTSGROVE
UPPER POTTSGROVE
UPPER FREDERICK
LOWER FREDERICK
SCHWENKSVILLE
LOWER POTTSGROVE
POTTSTOWN
LOWER SALFORD
TOWAMENCIN
UNION
NORTH COVENTRY
PERKIOMEN
EAST COVENTRY
SKIPPACK
WARWICK
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ROYERSFORD
WORCESTER
LOWER PROVIDENCE
EAST VINCENT
EAST NANTMEAL
WEST VINCENT
UPPER PROVIDENCE
WEST NORRITON
NORRISTOWN
WEST NANTMEAL
EAST PIKELAND
SCHUYLKILL
WALLACE
WEST PIKELAND
CHARLESTOWN
UPPER MERION
UPPER UWCHLAN
TREDYFFRIN
UWCHLAN
EAST WHITELAND
* Limerick Generating Station
West Philadelphia Ave
Reading Ave
Benjamin Franklin Highway
Schuylkill Rd
Pine Forge Rd
Old Airport Rd
Red Corner Sycamore Temple Rd
High St
Ridge Pike
Ridge Rd
Swamp Pike
Big Rd
Gravel Pike
Sumneytown Pike
Harleysville Pike
Skippack Pike
Pennsylvania Turnpike Northeast Extension
Germantown Pike
Black Rock Rd
Pawlings Rd
Egypt Rd
Audubon Rd
Valley Forge Rd
Pennsylvania Turnpike
Swedesford Rd
Pickering Rd
Kimberton Rd
Pughtown Rd
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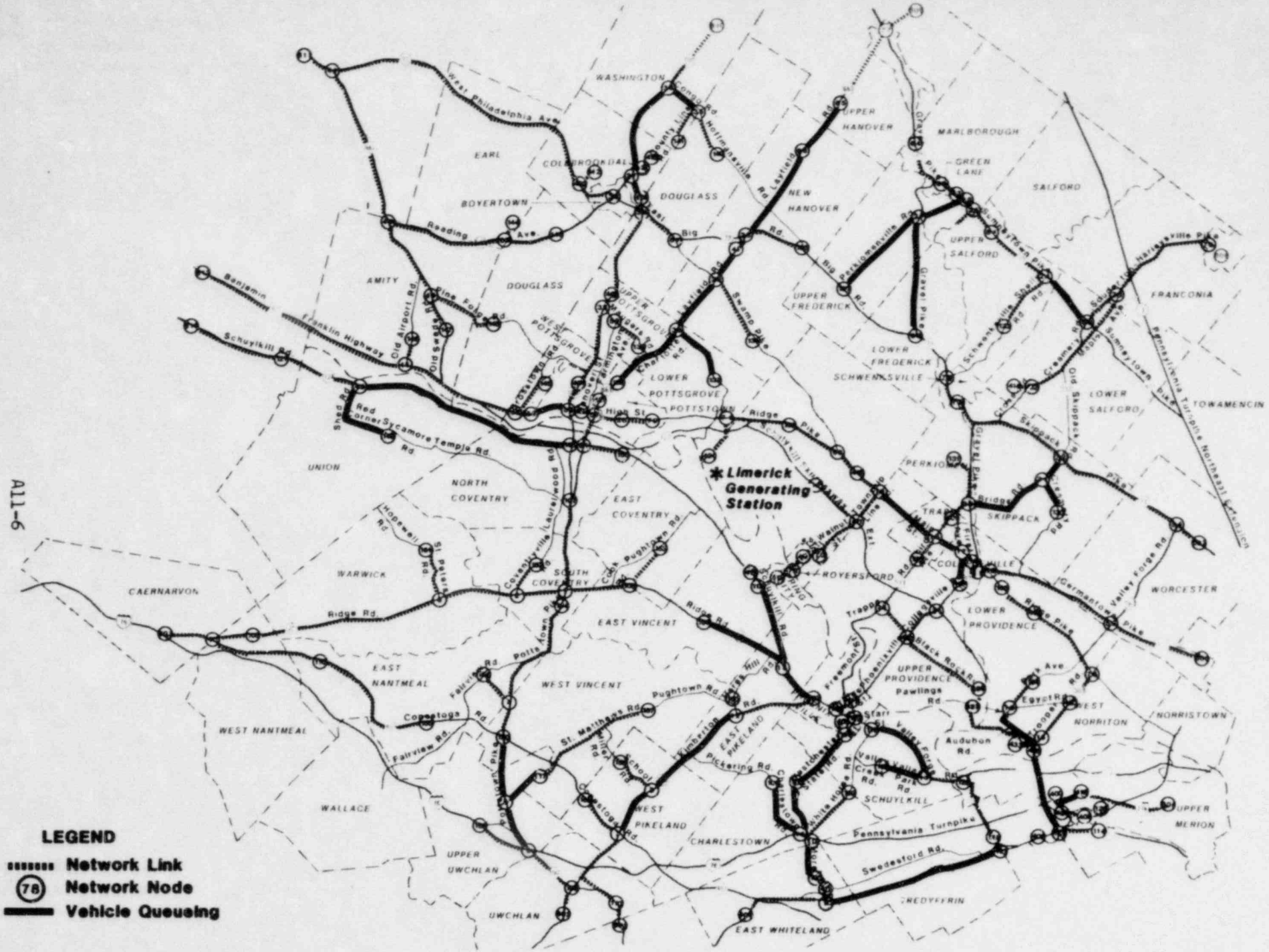
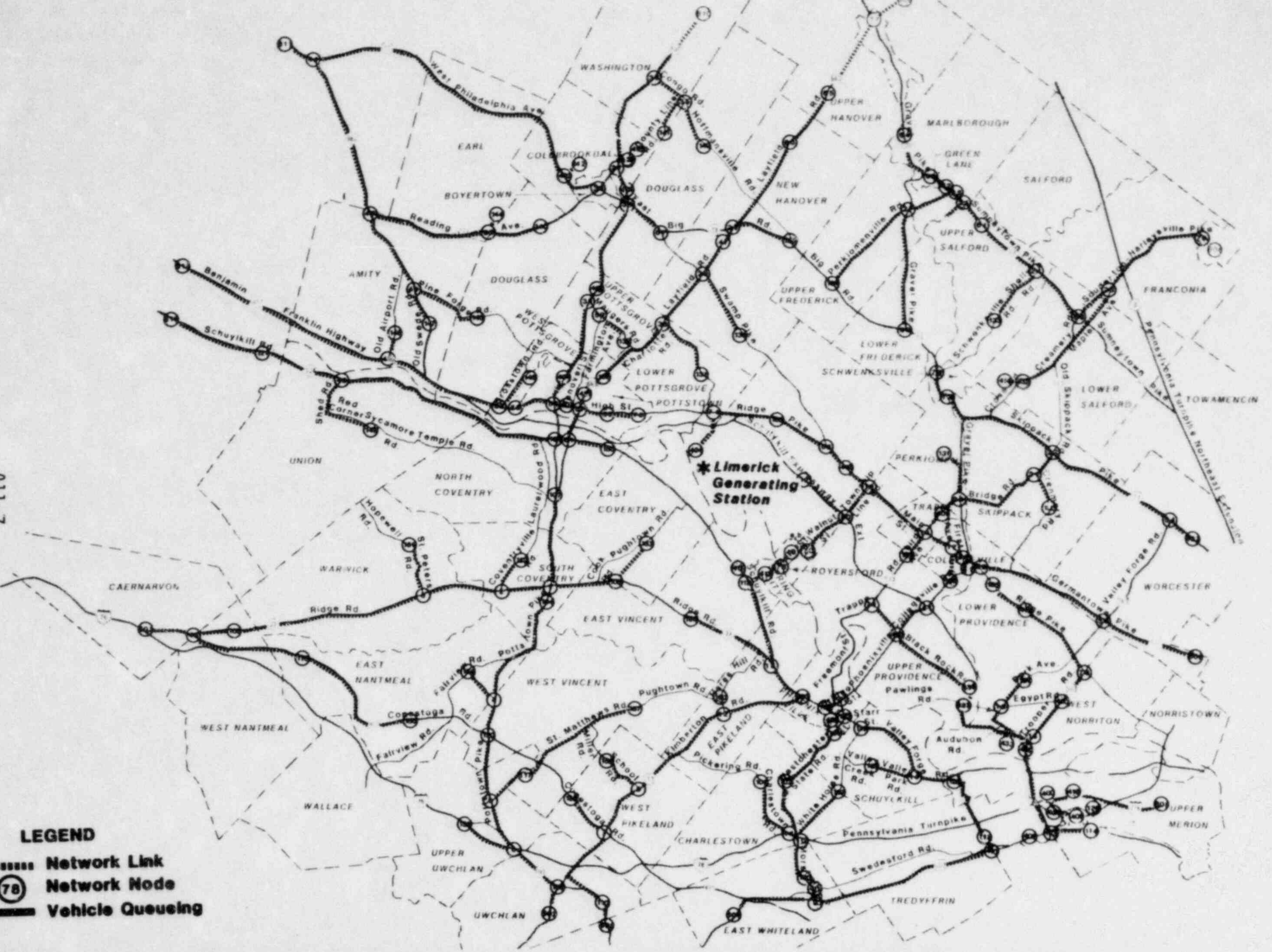
LEGEND
Network Link
78 Network Node
Vehicle Queueing



All-6

VEHICLE QUEUEING AT T = 180 MINUTES UNDER SUMMER, FAIR WEATHER CONDITIONS

Rev. 1 5/24/84


Limerick Generating Station
WASHINGTON
UPPER HANOVER
MARLBOROUGH
GREEN LANE
EARL
COLEBROOKDALE
DOUGLASS
NEW HANOVER
SALFORD
BOYERTOWN
UPPER SALFORD
AMITY
DOUGLASS
UPPER POTTSGROVE
WEST POTTSGROVE
UPPER FREDERICK
FRANCONIA
LOWER FREDERICK
LOWER POTTSGROVE
SCHWENKSVILLE
LOWER SALFORD
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WEST VINCENT
UPPER PROVIDENCE
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WEST NANTMEAL
EAST PIKELAND
WALLACE
WEST PIKELAND
SCHUYLKILL
UPPER MERION
CHARLESTOWN
UPPER UWCHLAN
UWCHLAN
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West Philadelphia Ave.
Reading Ave.
Benjamin Franklin Highway
Schuylkill Rd.
Old Airport Rd.
Pine Forge Rd.
Big Rd.
Laytield Rd.
Swamp Pike
Big Perkiomen Rd.
Gravel Pike
Ridge Pike
High St.
Sycamore Rd.
Temple Rd.
Shed Rd.
Hopewell Rd.
St. Peters Rd.
Coventryville Rd.
Laurelwood Rd.
Pughtown Rd.
Ridge Rd.
Pottstown Pike
Fairview Rd.
Conestoga Rd.
St. Matthews Rd.
Kimberton Rd.
Pickering Rd.
Black Rock Rd.
Pawlings Rd.
Egypt Rd.
Audubon Rd.
Valley Forge Rd.
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Bridge Rd.
Pennsylvania Turnpike
Pennsylvania Turnpike Northeast Extension
Swedesford Rd.
Sumneytown Pike
Harleysville Pike
Old Skippack Rd.
LEGEND
Network Link
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