TRAVEL DEMAND ANALYSIS FOR THE PROPOSED I-476 PARK-AND-RIDE LOTS

SUPPLEMENT NO. 2

April 1996

Delaware Valley Regional Planning Commission

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The Bourse Building
111 South Independence Mall East
Philadelphia, PA 19106

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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

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ABSTRACT

This supplement contains parking demand forecasts for new alternative configurations of the Wallingford and Baldwin park-and-ride facilities presented in the October, 1991 DVRPC report entitled "Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots". At Wallingford, the results of a survey by SEPTA is presented as are the results of a traffic study performed in the station area. The additional forecasts for the Baldwin site reflect different station operating scenarios. Forecasts of parking demand are presented given for each of these new alternatives.

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I. INTRODUCTION

Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots, published in October 1991, examined the parking demand at six park-and-ride locations within the I-476 corridor. Supplement 1 to the report reexamined the Radnor facility in light of information gathered by SEPTA regarding mode of arrival and presented forecasts for an additional alternative station configuration. The supplement was published in December, 1992, with a revised version released in April, 1993. Various meetings were held with government officials and the public.

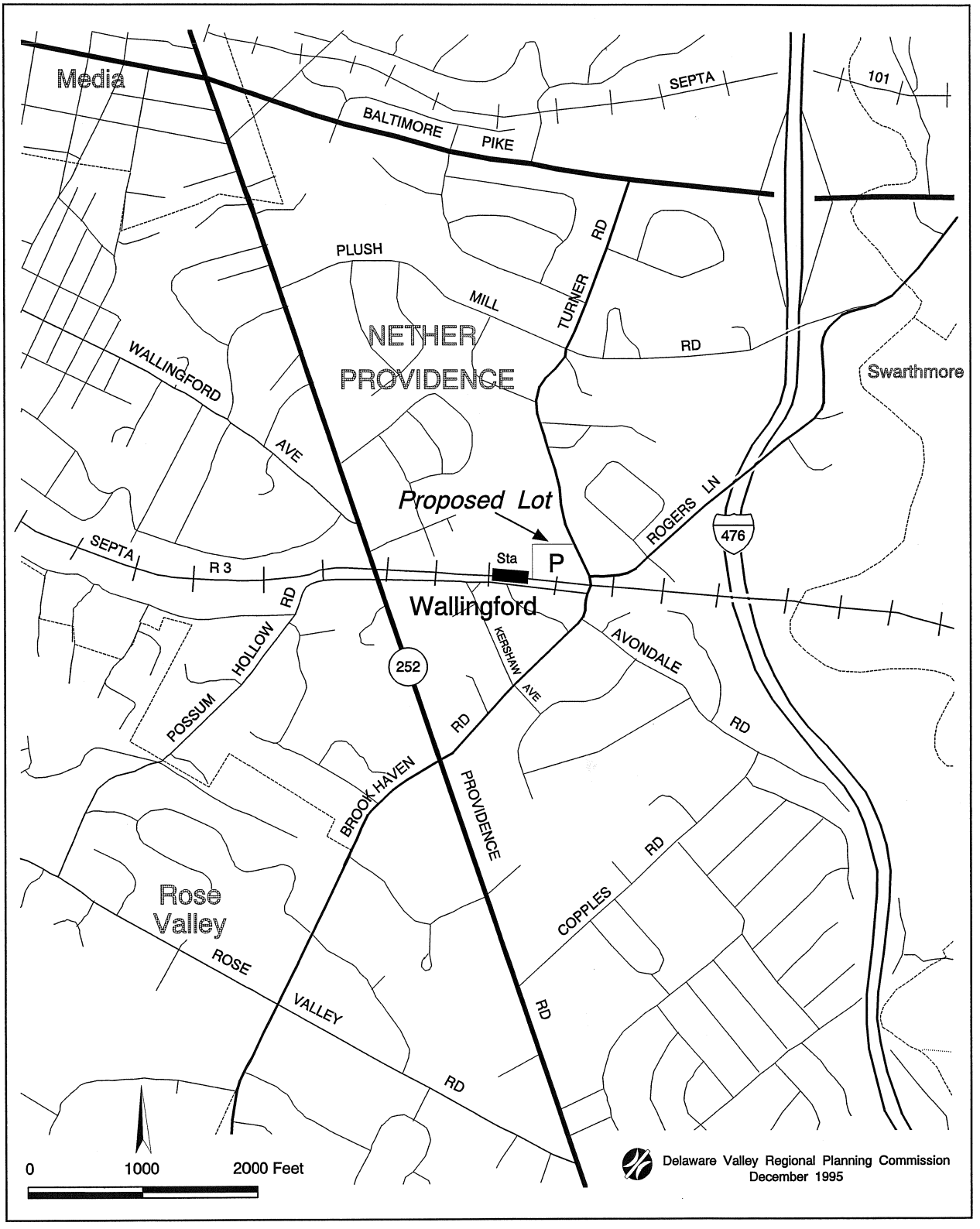
The meeting process led to design changes in the facility at Wallingford - direct access to the Blue Route via ramps to the expressway was dropped from consideration; the current station was retained, but a new lot providing additional parking would be located at a site north of the rail alignment and east of the station. Although direct ramp access to I-476 would be lost, the lot would accommodate carpool and vanpool formation activity from the surrounding area.

The Baldwin scenario presented in the original report included dedicated ramps to and from I-95 and the closing of the current Crum Lynne station. The new alternatives do not involve the construction of dedicated ramps; instead they focus on the demand obtained under different operating scenarios. These involve various combinations of the reactivated Baldwin station and continuing or discontinuing service at Eddystone and Crum Lynne.

After a meeting with Greiner, Inc., SEPTA and DVRPC, PennDOT requested that the new alternatives be reviewed by the Delaware Valley Regional Planning Commission (DVRPC). To address the concerns expressed at the Wallingford public meeting, a traffic study was initiated for the station area. Additionally, SEPTA had conducted a survey of arriving passengers' starting points and wished to have its findings presented.

Supplement 2 to the original *Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots* presents the forecasts for the Wallingford and Baldwin lots. Section II presents the analysis of the Wallingford station; included are a description of the current proposal, a review of the findings of the SEPTA surveys, a traffic study of the station area and a forecast of parking needs under the current alternative. Section III examines the parking requirements for the Baldwin lot under different alternatives involving suspending operation of either or both the Eddystone and Crum Lynne stations. An in-depth discussion of the station sites, forecasting procedures and scenario descriptions may be found in the original report.

Figure 1: PROPOSED PARK-AND-RIDE LOT AT WALLINGFORD STATION



II. WALLINGFORD PARK-AND-RIDE LOT

1. Background

Map I shows the location of the proposed Wallingford park-and-ride facility in Nether Providence Township. The current station location, on Possum Hollow Rd, is just west of Turner Rd. Parking for approximately 60 vehicles is provided in the station vicinity. Access to the station area is provided by two major highway facilities, both with a general north-south orientation - Providence Rd (PA 252) lies to the west and Brookhaven Rd/Turner Rd is immediately east of the station. Additional access to the site is provided by Rogers Ln, Avondale Rd and Possum Hollow Rd. An interchange between I-476 and Baltimore Pike is located approximately one-half mile to the northeast of the site. The alternative examined in *Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots* involved moving the station to a site immediately west of I-476. That site could physically accommodate approximately 350 vehicles. Dedicated ramps to and from I-476 would provide expressway access.

The new alternative analyzed in this report proposes retaining the current station site and its adjacent parking. Additional parking would be provided by a lot to be constructed on a wooded piece of land bounded by Turner Rd to the east, the railroad alignment to the south, and a tributary to Dicks Run to the west and north. Access to the lot would be provided by an entrance from Turner Rd. Parking demand under this scenario was briefly examined by DVRPC prior to the public officials and public meeting held on March 29, 1995. At the meeting, a forecast of 88 spaces was presented for discussion.

In response to comments at the public meeting, PennDOT and their consultant, Greiner, Inc. - Mid Atlantic asked DVRPC to formally reexamine the demand forecasts for the Wallingford station and present the findings in a supplement to the original report. In addition, it was recommended that a traffic study be conducted in the Wallingford station vicinity to present a context for examining the effects of the lot and background traffic. To address concerns over the catchment area for lot patrons, SEPTA conducted a Wallingford access mode and point of origin survey and a licence plate survey of automobiles parked at the Swarthmore station. The survey findings are presented below.

2. SEPTA Surveys

On May 24, 1995 SEPTA staff surveyed passengers arriving at the Wallingford station during the morning peak period. Patrons were questioned as to the nearest intersection to the starting point of their trip, as well as the mode used to approach the station. Not all people parking at the station were included in the survey as the survey was limited to the peak hour and some persons did not respond to the survey questions. Responses are summarized in Table 1 and displayed in Figure 2.

Table 1: Arrival Mode of AM Peak Hour Passengers at the Wallingford station

Mode of Arrival	Number of Responses	Percent of Total
Walked	39	29.5
Park-and-Ride	55	41.7
Kiss-and-Ride	35	26.5
Carpool	0	N/A
Bicycle	3	2.3
Other	0	N/A

As displayed in Table 1, the largest share (41.7%) of patrons using Wallingford drive to the station and park. The remaining passengers are split between walk access (29.5%) and those persons being dropped off (26.5%). A small number (2.3%) ride bicycles to the train.

Figure 2 plots the nearest intersection to the trip origin as given by the survey respondents. As persons were queried for the nearest major intersection, most responses are clustered along the major roadways in the station catchment area. These include PA 252-Providence Rd and Brookhaven Rd. As expected, those who reported walking to the station are concentrated nearby, primarily on PA 252 at Wallingford Ave, Possum Hollow Rd and Brookhaven Rd. The outlying observations are more evenly divided between drive access and persons dropped off (kiss-and-ride). Numbers of responses are grouped at Brookhaven Rd and PA 352, Moore Rd, and Rose Valley Rd, as well as at the divergence of PA 252 and PA 320 and at PA 252 and Baltimore Pike. Five persons driving to the station reported a starting point north of PA 252 and Baltimore Pike.

In response to concerns expressed at the Wallingford public meeting, a license plate survey was used to determine the catchment area of patrons driving to the Swarthmore station. In such a survey, the license plate numbers of all vehicles in the station lot are recorded, and then checked with the Department of Motor Vehicles to ascertain the zip code of the location where the vehicles are registered. This method is inferior to questioning approaching patrons for several reasons. First, only those patrons who park at the station lot are considered. This tends to distort the overall catchment area, as persons in the immediate area who may walk or bicycle to the station are not considered. In addition, there is no information on those who are dropped off at the station. Finally, small errors are introduced by instances of people who may have moved since last renewing their registration, or who may have the vehicle registered to an address other than the starting point of their trip. With these limitations in mind, the results from the Swarthmore license plate survey are presented in Table 2 below.

Figure 2: DISTRIBUTION OF TRIP ORIGINS FOR PERSONS USING THE WALLINGFORD STATION

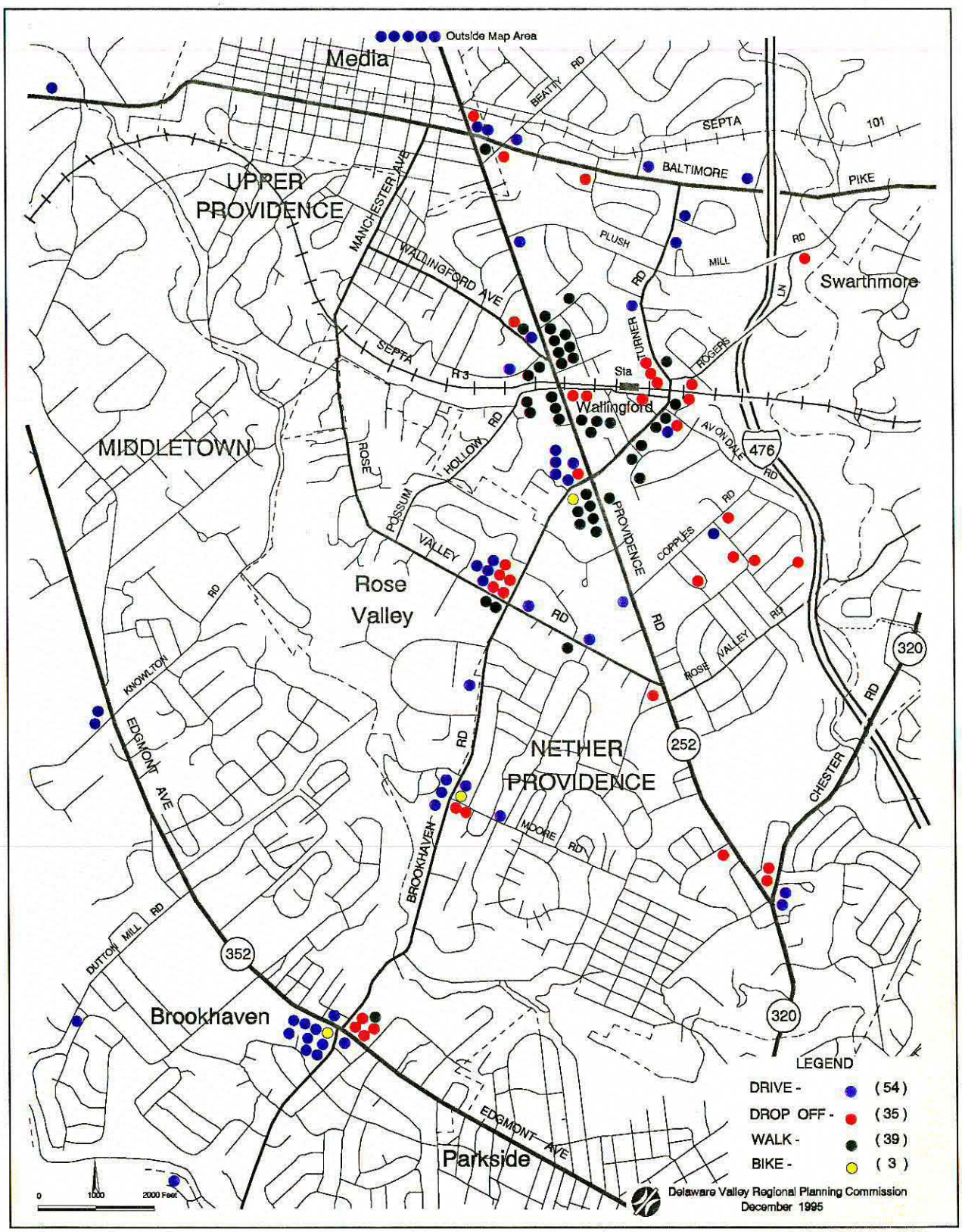


Table 2: Zip Code of Vehicle Registration for Patrons Driving to the Swarthmore station

ZIP Code	Post Office	Observations
19086	Nether Providence	38
19081	Swarthmore	24
19063	Middletown	10
19064	Springfield	9
19015	Brookhaven	7
19013	Chester	4
19014	Aston	3
19008	Marple	3

In analyzing the above results, it is important to note that zip code boundaries do not always follow municipal divisions. Hence, the area served by the 19063 post office encompasses Media, Rose Valley, most of Middletown and Upper Providence townships, and parts of Edgmont, Marple and Nether Providence townships.

The largest number (38) of vehicles were registered in the zip code comprising most of Nether Providence Twp. This is understandable, as PA 320 offers direct access from the southern part of the zip code to the Swarthmore station. The borough of Swarthmore provides the second largest number (24) of vehicles. Ten vehicles were registered in the 19063 zip code, but geographically this is a large area to the northwest of the station encompassing several boroughs and townships, as described above. Nine vehicles were from Springfield Twp, to the north of the station and also accessed by PA 320. Brookhaven's zip code, which also includes Parkside and much of Upland, contributed 7 vehicles to the total; as in the case of the southern portion of Nether Providence, access to the station is provided by PA 320. A smaller number of vehicles were registered in Chester (4), while Aston and Marple each added 3 observations.

2. Traffic Analysis

At the Wallingford public meeting, particular concern was expressed over traffic volumes on Brookhaven/Turner Rds. After meeting with PennDOT, Greiner Inc. - Mid Atlantic and SEPTA, it was agreed that DVRPC would analyze mainline and turning volumes at selected locations within the study area. The current situation would be presented, as would traffic volumes in the forecast year.

Figure 3 displays the Average Annual Daily Traffic for selected roadway segments in the study area. The number below the line indicates the current count, while the number above the line is the volume for the forecast year (2010). Of the selected roadways, the greatest traffic volume was recorded on Brookhaven Rd south of Possum Hollow Rd - 8,600 vehicles were tallied at this location. Most of this traffic continues on Turner Rd or Rogers Lane. The count on Turner Rd just north of Rogers Lane is 4,500 vehicles per day (vpd), declining only slightly to 4,400 vpd on the south side of Baltimore Pike. Rogers Lane carries 3,200 vpd just northeast of Turner Rd. Thirty-three hundred vehicles were counted on Possum Hollow Rd, the site of the Wallingford station.

Moderate growth in traffic volumes is forecast for these facilities. Brookhaven Rd is forecast to have the largest growth, adding 2,300 vehicles to its daily total (10,900). Rogers Lane will grow to 4,100 vehicles per day, the largest increase in percentage terms (28.1%). Approximately one thousand additional vehicles are forecast for Turner Rd by the year 2010. The smallest growth occurs on Possum Hollow Rd; an additional 700 vehicles are forecast.

Current and forecasted 2010 turning movements are displayed on Figure 4. Currently the volume of turning movements reveal a major flow between Brookhaven Rd and Rogers Ln. Additional large volumes move from Turner Rd to Baltimore Pike eastbound. The complementary movement - Baltimore Pike westbound to Turner Road - reveals approximately one-third less volume. This is probably due to the long delay created by the need to cross eastbound Baltimore Pike traffic at this unsignalized intersection. Somewhat smaller volumes are observed between Possum Hollow Rd and Brookhaven Rd and turning from eastbound Brookhaven Rd to Kershaw Ave. Relatively few vehicles are observed turning from eastbound Baltimore Pike to Turner Rd; from southbound Turner Rd to Rogers Lane; from westbound Brookhaven Rd to Kershaw Ave; and from Kershaw Ave to Brookhaven Rd.

The pattern of turning movements is forecast not to vary significantly in the future, although the street and turning volumes will increase. The largest turning volumes continue to occur between Brookhaven Rd and Rogers Lane and at the intersection of Baltimore Pike and Turner Rd. Conversely, turning volumes at Kershaw Ave remain modest.

The impact of parking patrons on total peak hour traffic and turning volumes is insignificant, representing less than 10 percent of peak hour volume.

Figure 3: CURRENT AND 2010 AADT FOR SELECTED ROADWAYS IN THE WALLINGFORD STATION STUDY AREA

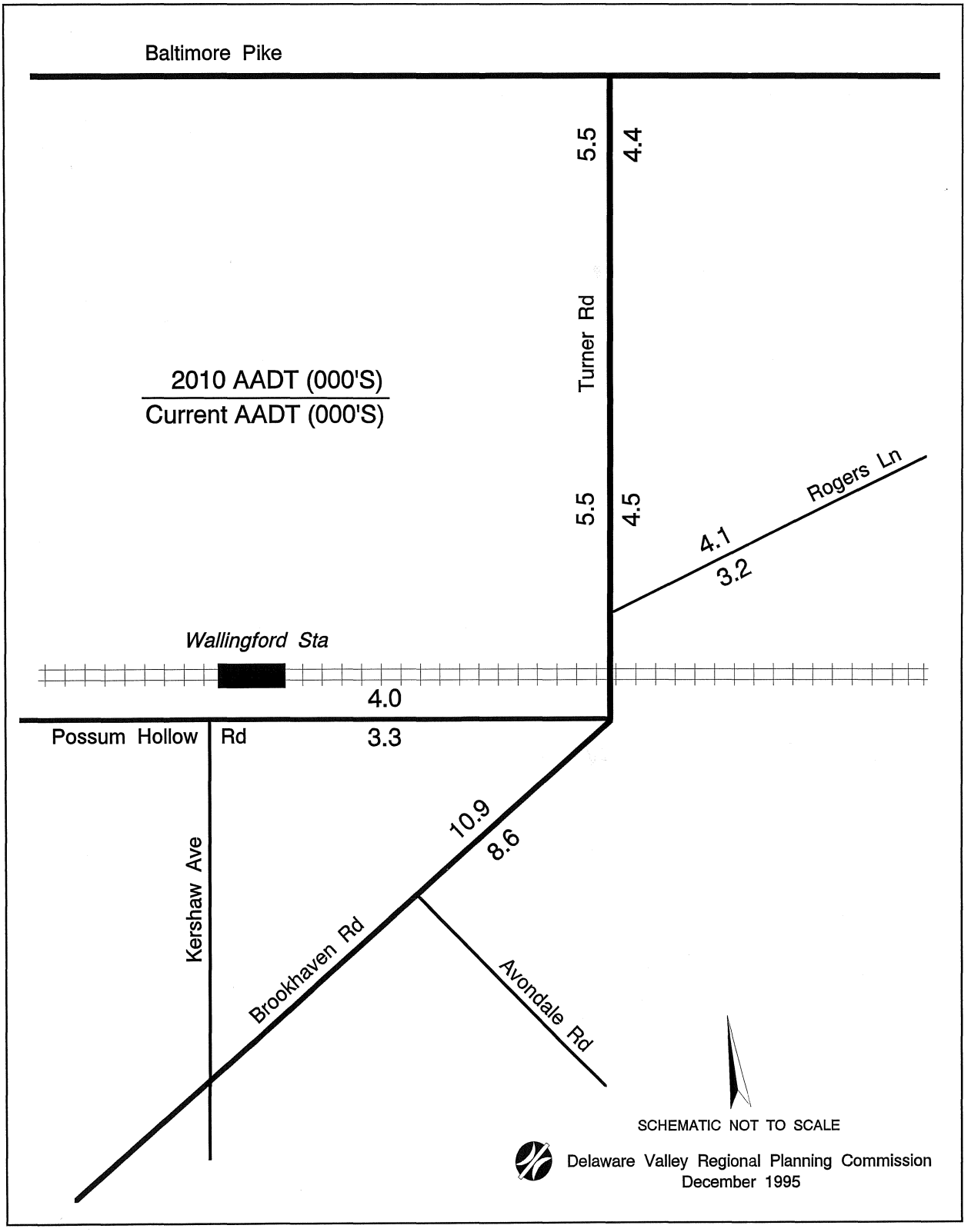
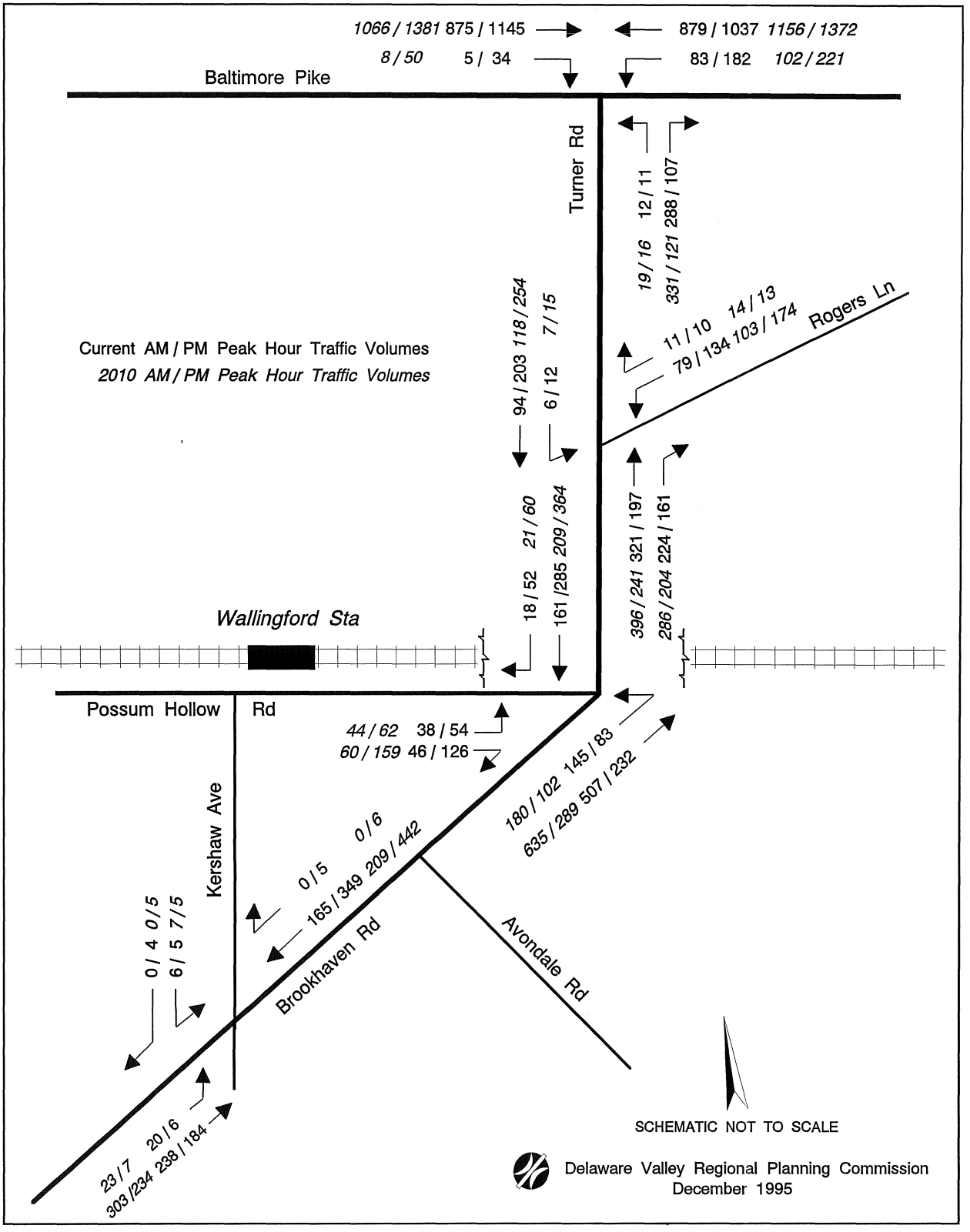


Figure 4: CURRENT AND 2010 TURNING MOVEMENTS FOR SELECTED ROADWAYS IN THE WALLINGFORD STATION STUDY AREA



3. Parking Space Requirements

For the analysis of parking space requirements at the Wallingford station, *Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots* presented two scenarios. Both scenarios assumed implementation of projects contained in the DVRPC Transportation Improvement Program (TIP) and long range plan. The difference in the two scenarios centered on the relationship between highway/transit service levels and costs. In the original build alternative, current transit service levels and fares, as well as auto operating costs, were held constant in 1991 dollars when forecasting transit trips. The additional alternative, titled as the enhanced transit service scenario, included certain assumptions relative to the auto-transit relationship. These included:

- o Fares are 5% lower than in the first build alternative
- o Center City parking costs are 15% higher
- o Highway travel times are 10% greater
- o R3 headway is reduced to 10 minutes peak and 30 minutes off-peak
- o R3 travel time is reduced by 10%

Current Ridership and Parking Spaces

Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots presented a daily boarding figure of 201 for the Wallingford station. This figure was taken from the Regional Rail Ridership Census (1990-1991). Ridership tends to vary, sometimes significantly, and the census taken in the fall of 1993 shows that the boardings have increased to 223.

Currently, the Wallingford R3 station is provided with approximately 60 parking spaces. These are located in the vicinity of the inbound platform/station building and across Possum Hollow Rd.

Future Ridership and Parking Space Requirements

The 2010 forecast published in the I-476 Park-and-Ride Report contained relatively flat ridership growth for the no-build alternative. Maintaining the previous forecast of 215 daily boardings yields an increase of seven percent over the 1990 boardings on the R3 line. The build alternative was forecast to generate 292 daily boardings, or 35.8 percent more than in the no-build. This translated to a need for 118 parking spaces for R3 patrons. In addition, it was estimated that 30 parking spaces would be required for carpool/vanpool formation. The enhanced service scenario was forecast to require 146 spaces for users of public transportation and 40 spaces for persons wishing to carpool or vanpool.

As stated earlier, the scope of the new alternative is different from what was formerly envisioned. The current station site is retained and direct access to I-476 is no longer provided. These changes require that the forecasts previously published be reexamined.

Table 3 presents both the build and enhanced service scenarios under the previously published report, and the new alternative examined in this supplement. The original build alternative forecast a need for 118 parking spaces for transit users by the year 2010. Subtracting the currently available 60 spaces from this total yields an increase of 58 spaces. The original simulation estimated that 22 percent (26 spaces) of the public transportation demand for the lot would come from persons using I-476. Without direct access to the expressway, this number will fall by approximately three-quarters to seven spaces. Without constrained parking it is estimated that some kiss-and-ride patrons would shift to park-and-ride, adding 15 spaces to the forecast need. An additional 25 spaces would accomodate patrons who currently use the Swarthmore station because of inadequate parking at Wallingford. Seven spaces are necessary for carpool/vanpool formation. The sum of transit and carpool/vanpool requirements yields a total demand of 151 parking spaces.

TABLE 3: 2010 PARKING SPACE REQUIREMENTS BY ALTERNATIVE

	Previously Published			New Build Alternatives	
	No-Build (spaces)	Build (spaces)	Enhanced (spaces)	Build (spaces)	Enhanced (spaces)
Transit	75	118	146	151	166
Carpool/Vanpool	---	30	40	7	10
Total	75	148	186	158	176

Under the enhanced service alternative, 166 spaces are needed for patrons boarding the R3 at Wallingford. An additional 10 spaces would be required by those seeking to pool. This yields a total forecast of 176 spaces, of which 60 spaces are currently available and 116 spaces would have to be provided.

III. BALDWIN PARK-AND-RIDE LOT

1. Background

Map 2 locates the proposed site for the Baldwin station and park-and-ride facility. Located on the R2 Regional Rail Line, the project involves reactivating a closed station at the site of the former Baldwin Locomotive Works. Access to the site is provided by US 13, Chester Pike, an east-west oriented roadway running along the north side of the site. The terminal interchange of I-476 at I-95 is located approximately one-half mile to the north of the closed station. The original assumptions explored in *Travel Demand Analysis for the Proposed I-476 Park-and-Ride Lots* included a lot north of Crum Creek contiguous to I-95 and served by ramps directly from that facility to the expressway portion of the park-and-ride lot. It was also assumed that the Baldwin station would replace the current station stop at Crum Lynne.

Since the original report was published, private developers have remodeled and leased the Baldwin Tower. Additional plans are in place for a small strip mall. Although the station site itself is owned by AMTRAK, no land is available for the construction of a park-and-ride facility. However, the developers of the Baldwin Towers have offered to enter a long term lease with PennDOT for a portion of a lot to be developed near the station. No direct access to the lot from the expressways is envisioned. Persons traveling on either I-95 or I-476 who wished to use the facility would use the Stewart Ave exit from I-95 and US 13 for access.

Four operating scenarios are considered in this supplement:

I. Reactivating Baldwin while maintaining service at the Eddystone and Crum Lynne stations.

II. Closing Eddystone and having trains stop at Baldwin and Crum Lynne stations.

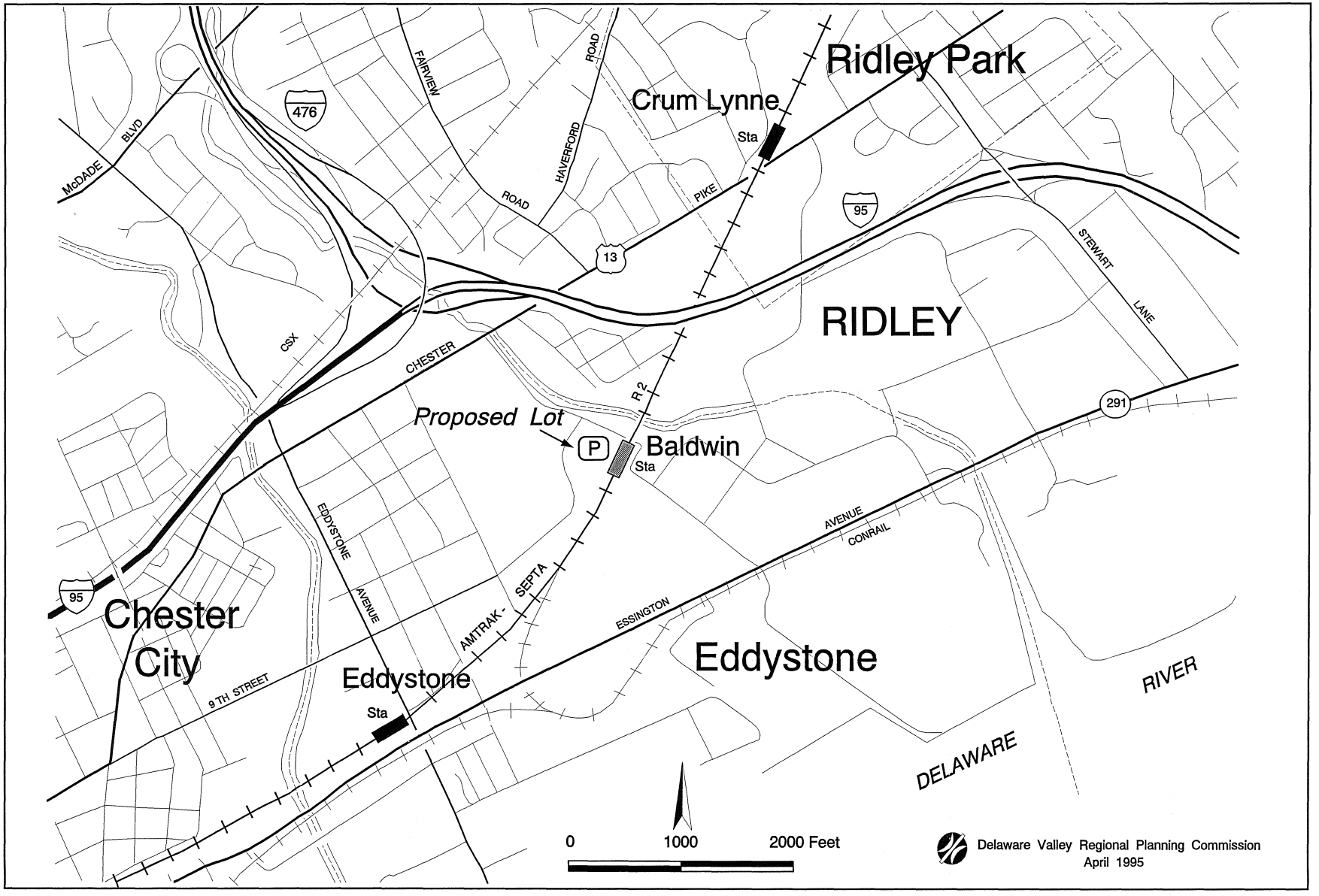
III. As in the previously published scenario, station stops at Eddystone and Baldwin while closing Crum Lynne.

IV. Service at the Baldwin station, closing both Eddystone and Crum Lynne.

2. Parking Space Requirements

Several assumptions guide the analysis of parking demand for the Baldwin operating scenarios. First, removing the dedicated ramps and requiring expressway traffic to exit I-95 at Stewart Ave and proceed via Chester Pike (US 13) to the lot adds 1.8 miles to the one-way access distance, lessening the attractiveness of the facility for expressway users. Second, it is assumed that parking demand at the three stations (Eddystone, Baldwin and Crum Lynne) is relatively constant, with the auto access patrons shifting from Eddystone or to a lesser extent, Crum Lynne, to Baldwin if either of those stations is closed. In the case of Crum Lynne it is assumed less than one-half would shift to Ridley Park due to parking constraints at that station.

Figure 5: PROPOSED BALDWIN STATION AND PARK-AND-RIDE LOT



As with the Wallingford analysis, the enhanced service scenario included assumptions about the relationship between the highway and transit networks. These assumptions are:

- Fares are 5% lower than in the first build alternative
- Center City parking costs are 15% higher
- Highway travel times are 10% greater
- R2 headway is reduced to 20 minutes peak
- R2 travel time is reduced by 15%

Current Ridership and Parking Spaces

The Regional Rail Ridership Census (1990-1991) reported 94 daily boardings at the Crum Lynne station and this figure was used in producing the forecast for the Baldwin station published in the original DVRPC report. Since publication, ridership has declined to 70 boardings at Crum Lynne (from the 1993-1994 ridership census). Although not published in the original report, the Eddystone station is reported to generate 48 daily boardings in the latest census.

The Crum Lynne station provides approximately 12 parking spaces. The number of parking spaces at Eddystone is 10. The arrival mode of passengers used in the original analysis is displayed in Table 4.

Table 4: Arrival Mode of AM Peak Hour Passengers at the Eddystone and Crum Lynne stations

Mode of Arrival	Percent of Total
Walked	60.0
Park-and-Ride	15.0
Kiss-and-Ride	20.0
Other	5.0

Future Ridership and Parking Space Requirements

As with the Wallingford station, the original report forecast Crum Lynne ridership to remain relatively flat, increasing from 94 to 100 daily patrons. The build alternative more than doubled this number (to 251 persons) or a need for 133 spaces for public transportation riders.

TABLE 5: 2010 PARKING SPACE REQUIREMENTS BY ALTERNATIVE

Alternatives	Crum Lynne (transit) (spaces)	Baldwin (transit) (spaces)	Baldwin (pool) (spaces)	Eddystone (transit) (spaces)	Total (spaces)
Previously Published:					
No-Build	13	--	--	N/A	13
Build	--	133	146	N/A	279
New Scenarios:					
I: (All Stations)	12	84	26	10	132
II: (Crum Lynne, Baldwin)	12	106	26	--	144
III: (Baldwin, Eddystone)	--	109	26	10	145
IV: (Baldwin)	--	131	26	--	157

Enhanced Service Alternatives	Crum Lynne (transit) (spaces)	Baldwin (transit) (spaces)	Baldwin (pool) (spaces)	Eddystone (transit) (spaces)	Total (spaces)
Previously Published:					
Build	--	167	194	N/A	361
New Scenarios:					
I: (All Stations)	15	106	35	13	169
II: (Crum Lynne, Baldwin)	15	134	35	--	184
III: (Baldwin, Eddystone)	--	144	35	13	192
IV: (Baldwin)	--	172	35	--	207

Pooling activity was forecast to be high, with the need for 146 parking spaces for carpool/vanpool patrons. Total parking demand at the Baldwin station was forecast at 279 spaces. Under the enhanced service assumptions, parking demand totaled 361 spaces, with 167 transit related spaces and 194 spaces required for carpool/vanpool usage.

Table 5 presents the parking space requirements under the revised build alternatives; the lower portion of the table presents the same scenarios under the enhanced service assumptions. The forecast reflects the decrease in parking demand occassioned by the removal of the dedicated ramps from I-95. The circuity of the Stewart Ave/US 13 alternate route reduces demand by almost one-half for rail passengers coming from the expressway, while almost totally eliminating the expressway demand for carpool/vanpool formation. While rail passengers approaching the station from the former local side of the lot are unaffected by the removal of the I-95 ramps, the attractiveness for carpool/vanpool patrons of that lot is reduced by more than one-half, primarily because of reduced access to I-95 and I-476.

The result of these changes is that demand for 132 to 157 parking spaces is forecast, depending upon the combination of stations which is served. The base forecast for Baldwin (with Eddystone and Crum Lynne retaining service) is 84 spaces for transit patrons and 26 spaces for those wishing to pool. Together with the 12 spaces at Crum Lynne and 10 at Eddystone, the demand totals 132 spaces for the three station combination. In each of the scenarios, the number of carpool/vanpool spaces remains constant, as Baldwin is the only station accomodating this activity. As stated above, the scenarios which involve closing Eddystone shift the 10 existing park-and-ride patrons to Baldwin. In addition, twelve spaces are required for patrons who formerly walked to the Eddystone station, but who would now need to use the park-and-ride at Baldwin. Scenarios which examine closing Crum Lynne, on the other hand, shift only six existing park-and-ride patrons to Baldwin, as the other six may shift to Ridley Park. Nineteen additional spaces would be required at Baldwin to accomodate persons who shift from walking to the Crum Lynne station to driving to Baldwin.

The effect of the enhanced service scenario assumptions raises the demand for both transit and pool parking. Pool formation requires 35 parking spaces, versus 26 spaces forecast in the revised build, an increase of approximately one-third. Transit patronage also increases, although the effect on parking demand is more modest than on pooling activity. The base demand at Baldwin is for 106 spaces, versus 84 reported in the revised build alternative. This is modified by twenty-eight spaces in scenarios without Eddystone service and forty spaces in scenarios where Crum Lynne ceases operation. Total parking demand ranges from 169 to 207 spaces, depending upon the operating plan selected.

IV. SUMMARY

This supplement analyzes the year 2010 parking space requirements for the proposed Wallingford and Baldwin park-and-ride lots. At Wallingford, the effect of removing the dedicated ramps from I-476 and constructing an additional parking facility contiguous to the current station site is examined. At Baldwin, dedicated ramps to I-95 are removed from consideration and the analysis presents forecasts under different station operating scenarios involving Crum Lynne and Eddystone, as well as the Baldwin station. As in the original DVRPC report, both Wallingford and Baldwin accommodate carpool and vanpool formation.

In response to concerns expressed at a public meeting for the Wallingford lot, an origin survey of arriving passengers and traffic study were conducted. SEPTA interviewed passengers and found that the majority of rail patrons were coming from within a mile of the station. Smaller concentrations of passengers were identified from points along Brookhaven Rd, while only a few traveled from outside Nether Providence Twp, Rose Valley and Brookhaven boroughs. A much greater distribution of passenger origins was identified when SEPTA conducted a licence plate survey of patrons parking at the Swarthmore Station.

A traffic study in the station vicinity found the greatest volume on Brookhaven Rd south of Possum Hollow Rd (8,600 vehicles per day) and the smallest volume of the study roadways on Rogers Ln (3,200 vpd). These volumes are forecast to grow moderately into the future. Numerical growth is forecast to range from 700 vpd on Possum Hollow Rd to 2,300 vpd for Brookhaven Rd. In percentage terms, the highest growth is on Rogers Ln (28.1%), while the lowest growth is on Possum Hollow Rd (21.2%). The pattern of turning movements is forecast not to vary significantly in the future, although street and turning volumes will increase. The effect of the park-and-ride expansion on through and turning movements in the peak hour is insignificant, accounting for less than 10 percent of the peak hour volume.

The original DVRPC forecast for the Wallingford facility was 148 spaces, with 30 spaces dedicated to pooling formation and the remaining 118 necessary to accomodate SEPTA patrons. Parking demand under the revised build alternative at Wallingford is forecast to be 158 spaces, of which seven spaces are required for persons forming carpools/vanpools and 151 spaces are needed for those wishing to use public transit. The decrease in forecast demand is also reflected in the enhanced service scenario, as this scenario is based on adjusting the build alternative to account for various public policies. In this case, total demand decreased from 186 spaces in the original report to 176 spaces.

The original Baldwin alternative, envisioning closing the Crum Lynne station and constructing dedicated ramps from I-95 was forecast to require 279 parking spaces, of which 133 would be needed by SEPTA patrons and 146 by those wishing to form carpools/vanpools. Without dedicated ramps the demand for the three stations (Baldwin, Crum Lynne and Eddystone) is forecast to decline to a range of 132 to 157 spaces, depending upon the operating status of the latter two stations. Total carpool/vanpool demand requires 26 spaces, all of which

are at Baldwin. Under the enhanced service scenario, the range parking spaces required is 169 to 207, of which 35 are needed for pooling.

In conclusion, the new scenarios result in the following:

- Moderate growth in traffic volumes are forecast for roadway facilities in the vicinity of the Wallingford station. The effect of the additional parking facility with an entrance to Turner Rd is insignificant, accounting for less than 10 percent of through or turning movements in the peak hour.

- Parking demand for the Wallingford lot is 158 spaces, with 176 spaces required under the enhanced service scenario, including the 60 spaces currently available at the station.

- Parking demand for the Baldwin lot varies between 84 and 131 spaces, depending on whether Crum Lynne and Eddystone remain open or are closed. Under the enhanced service scenario, the range is 106 to 172 spaces.