

**AMTRAK SERVICE**  
at **CHESTER**  
**TRANSPORTATION CENTER**  
Feasibility Study



DELAWARE VALLEY  
**dvrpc**  
REGIONAL  
PLANNING COMMISSION

2009



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## EXECUTIVE SUMMARY

Recent developments, such as Harrah's Chester Casino and Racetrack and the Wharf at Rivertown office development (mixed uses are proposed for the future), stand as new attractors both to and within the City of Chester. Currently, Amtrak service on the Northeast Corridor (NEC) rail right-of-way bypasses Chester City. In response to a request from the County of Delaware, the feasibility of Amtrak service to the Chester Transportation Center (CTC), along with the potential improvement of access to Chester City attractions are explored in this report.

This study examines three interrelated questions regarding Amtrak service provision to Chester City:

1. What is the context for providing new interstate rail service to Chester City?
2. What are the capital and operational constraints to an Amtrak stop at the Chester Transportation Center?
3. What are the potential capital and operational alternatives for serving the emerging destinations in Chester City?

Analysis shows that Amtrak inter-city passenger rail service to the Chester Transportation Center is feasible, assuming capital and operational concerns are met. Assuming permissions could be negotiated with Amtrak, trains would need to switch tracks using interlockings to the north and south of the station. New train movements and the additional time required for such movements, would add time to Amtrak, SEPTA, and freight train service along the NEC. Other issues such as the need for expanded parking and whether Chester City is an interstate generator/attractor of sufficient strength to warrant Amtrak service, make it difficult to recommend new Amtrak service at the CTC at this time.

The station is not a destination in itself, but a transfer point for access to the targeted destinations. Alternate analysis of the connections to Chester Transportation Center suggest that current SEPTA R2 service to Wilmington and a new express bus service along I-476 may capture the desired flows of people to the CTC. Coach bus service from interstate hubs like 30<sup>th</sup> Street Station and the Philadelphia International Airport might best serve the burgeoning entertainment industry in Chester. Further enhancement of this transfer connection, be it to employment, the emerging recreation locations, or the airport may be better served through privately operated coach buses or shuttles.

As it currently stands and into the foreseeable future, visions for interstate rail service to the Chester Transportation Center and Chester City may be best realized through the enhancement and marketing of other transportation services (such as coach bus) connecting the Philadelphia International Airport or 30<sup>th</sup> Street Station to specific destinations like Harrah's Chester Casino and Racetrack or the planned professional soccer stadium.

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## 1.0 INTRODUCTION

There has been recent growth in economic development in the City of Chester including the conversion of a former power station into offices (the Wharf at Rivertown), the completion of University Technology Park, the creation of the Chester Riverwalk, and the construction of Harrah's Casino and Racetrack and the new soccer stadium. Other major destinations, such as Crozer-Chester Medical Center, Widener University, Kimberly Clark, and Boeing Helicopters, are also located nearby, though none of the major destinations are next to the Chester Transportation Center (CTC).

As shown in Figure 1 on the next page, the Chester Transportation Center lies in the eastern end of the city, located on the shore of the Delaware River in the County of Delaware. Accompanying this development, there has been a call to examine whether Amtrak interstate rail service to the CTC is viable with the emergence of new industries and revival of the Chester waterfront. It is the hope of civic leaders that interstate rail travel may now, after many years, have a reason to return to Chester City.

This study examines three elements of Amtrak service provision to Chester City in order to assess the reality of possible Amtrak investment:

1. What is the context for providing new interstate rail service to Chester City?
2. What are the capital and operational constraints to an Amtrak stop at the Chester Transportation Center?
3. What are the potential capital and operational alternatives for serving the emerging destinations in Chester City?

First is an overview of Chester City's demographics, employment, and current transit service, highlighting the pattern of movement to and from Chester City. These indicators are important in order to determine whether there is or would be enough demand for interstate service to warrant pursuing a new stop.

Second is an examination of physical or operational limitations for Amtrak service. Current AMTRAK service on the Northeast Corridor (NEC) stops at Philadelphia 30<sup>th</sup> Street Station and Wilmington Delaware, bypassing Chester City. Altering traffic patterns on the NEC will raise physical and operational issues for both Amtrak and SEPTA train service at Chester.

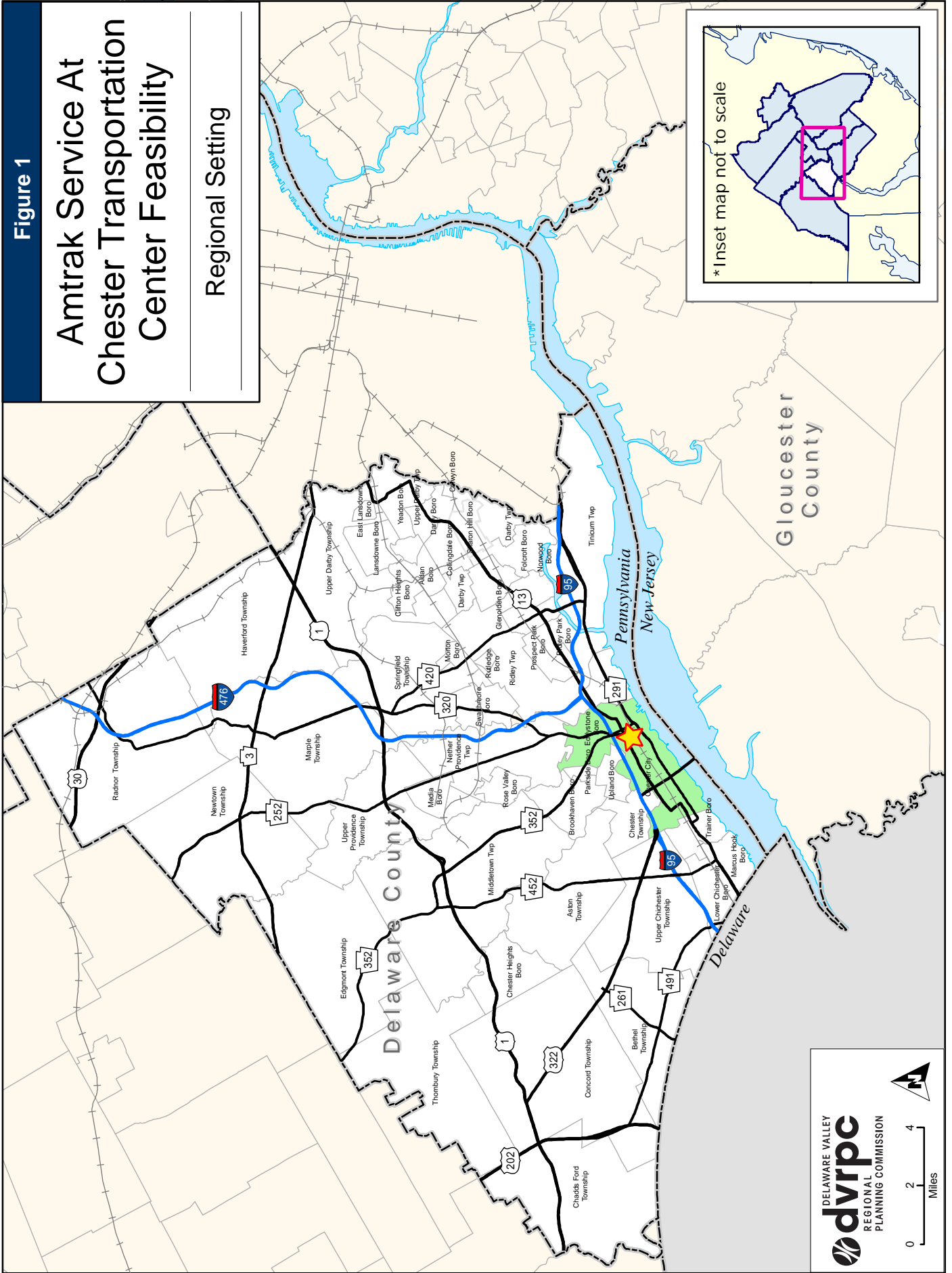
Finally, plans for other connective services such as SEPTA regional rail, bus routes, and shuttles will be examined for their provision of mobility and connection from the Transportation Center to destination activities. It may be that rail transit is not the best mode to move people into and out of Chester City.

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Figure 1

# Amtrak Service At Chester Transportation Center Feasibility

Regional Setting





## 2.0 STUDY AREA ANALYSIS

This study area demographic analysis is centered on the Chester Transportation Center (CTC) and bounded by the limits of Chester City. Figure 1, shown on the opposite page, locates Chester City and the Transportation Center (shown with a yellow star) in southern Delaware County along the Delaware River. The city is at the crossroads of Interstate 95 and Interstate 476, which connects I-95 to the north and west parts of the region. Bisecting Chester is 2<sup>nd</sup> / 4<sup>th</sup> Street / PA 291 which historically served as a highway linking the industries along the waterfront, and now provides access to re-development in Chester City.

Table 1 below shows the DVRPC forecasts for population and employment for Chester City. County of Delaware statistics are included as a point of comparison. Population growth in the county between 2000 and 2030 may be characterized as flat with a projected increase of about one percent. This reflects a continuation of the trend of westward population relocation from the eastern portions of the County rather than migration into the county. There is a projected population increase between 2000 and 2030 of about 400 people in Chester City which mirrors the County's increase of about one percent.

**Table 1. Chester City Population and Employment Forecasts, 2000-2030**

	2000	2010	2020	2030	Absolute Change 2000-2030	Percent Change 2000-2030
Delaware County Population	551,974	556,117	557,795	559,288	7,314	1.3%
Chester City Population	36,855	37,079	37,171	37,253	398	1.1%
Delaware County Employment	238,164	238,728	240,833	242,708	4,544	1.9%
Chester City Employment	11,191	11,316	11,607	11,866	675	6.0%

Source: DVRPC's Analytical Data Report #14, *Regional, County, and Municipal Population and Employment Forecasts, 2005-2035*, August 2007.

Employment in the County of Delaware, as shown in Table 1, is forecast to increase between 2000 and 2030 by about two percent. Chester City employment is forecast to increase at a rate of six percent, thus exceeding the County growth rate. The forecast increase in Chester employment of 675 represents about 15 percent of the gains in the county. The increase in employment, even if relatively small, is greater than the forecast population gain in Chester. Chester City and its adjacent municipalities have an employment base highlighted by a number of industries shown in Table 2 below.

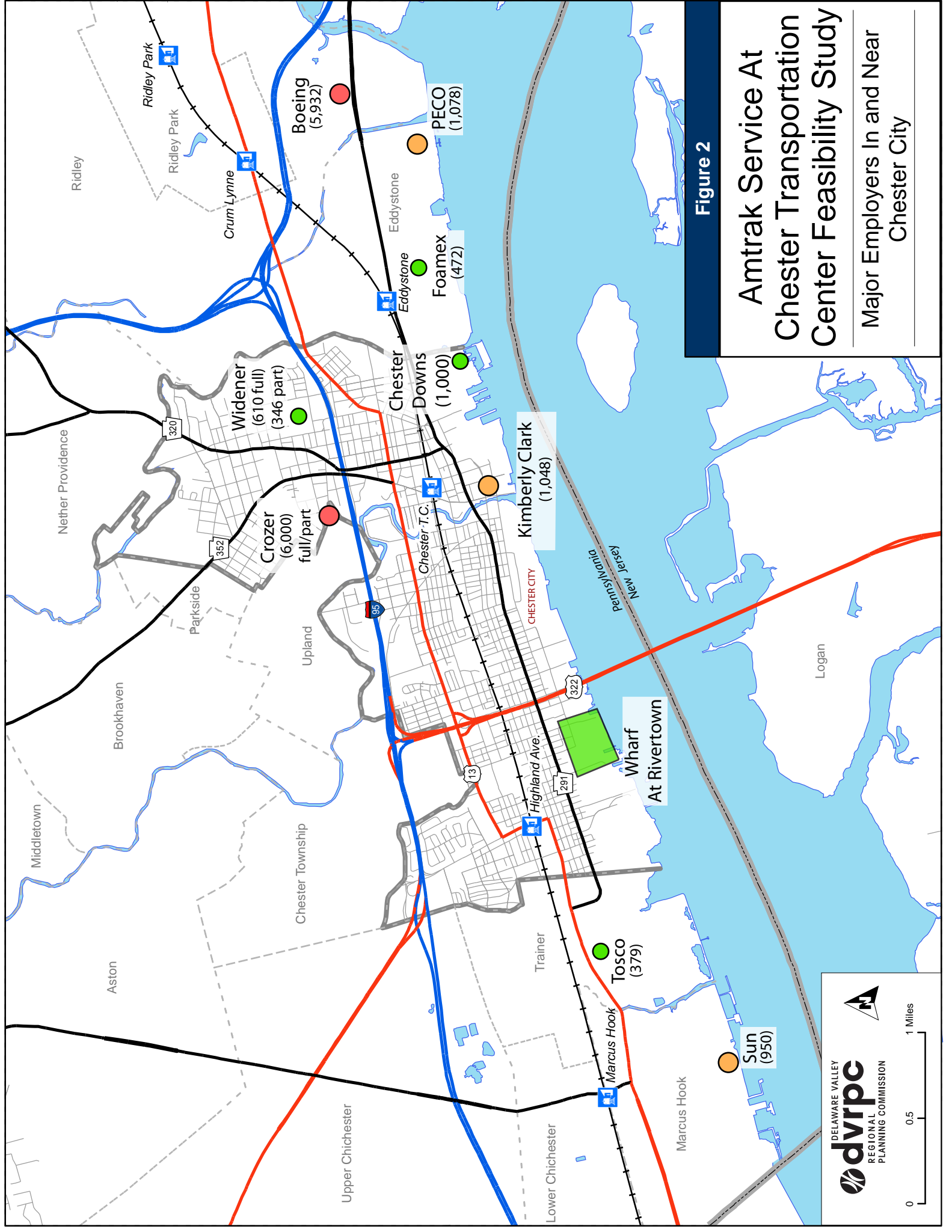
**Table 2. Major Employers in the City of Chester and Nearby Municipalities**

Company	Number of Employees	City or Municipality
Widener University	610 full, 346 part	Chester City
Kimberly Clark	1,048 full	Chester City
Harrah's Casino and Racetrack	1,000 full/part	Chester City
Wells Fargo	900 full time	Chester City
AdminServer	325 full	Chester City
Boeing	5,932 full	Ridley
Crozer-Chester Medical Center	6,000 full/part	Upland
PECO	1,078 full	Eddystone
Foamex	472 full	Eddystone
Tosco	379 full	Trainer
Sun	950 full	Marcus Hook

Source: Delaware County Chamber of Commerce, 2007

Table 2 summarizes the largest employers with full and part-time positions in Chester City and in the adjoining municipalities. Kimberly Clark and the Harrah's Chester Casino and Racetrack are two of the largest major employers in Chester City, with Harrah's as the newest employment addition. A number of employers are not located in Chester City, but nearby, like Boeing and Crozer-Chester Medical Center. Boeing offers plentiful parking and is transit accessible via the Route 37 bus including bus stops with a passenger shelter. Crozer has recently expanded parking and is also accessible with the Route 117 bus.

Figure 2 on the next page provides a geographic context for these employers, largely clustered along PA 291, with the parallel NEC rail line and SEPTA's stations in the area shown, including CTC nearly at the center. Included on the map is the Wharf at Rivertown which is an office development on the waterfront. Future development plans envision establishing new residential properties surrounding the location. No rail stations directly serve any of the destinations. Rail access to any of the major employers is a two seat ride necessitating a transfer from the regional rail system to a bus or shuttle to complete the trip. Shown on Figure 2 are the intersecting bus routes which provide access along this corridor.



**Figure 2**  
**Amtrak Service At**  
**Chester Transportation**  
**Center Feasibility Study**  
 Major Employers In and Near  
 Chester City

## 2.1 Journey to Work Travel Profile of Chester City

Another way to describe the study area is to examine the journey to work (JTW) data from the Year 2000 census. Table 3 shows the number of workers commuting inbound to Chester City, by county of origin. Included for comparison is the number of people who both live and work in Chester City, though these are not included in the percent totals.

**Table 3. Reside Elsewhere-Work in Chester City**

Residential Origin	Number of Workers	Percent of Total
Live/work in Chester City	2,946	NA
Delaware Co. (not Chester City)	4,118	55%
Bucks Co.	94	1%
Chester Co.	680	9%
Montgomery Co.	243	3%
Philadelphia Co.	851	11%
Burlington Co.	21	0%
Camden Co.	142	2%
Gloucester Co.	246	3%
Mercer Co.	0	0%
New Castle County	826	11%
New Jersey State (excluding above)	119	1%
Pennsylvania State (excluding above)	76	1%
Other	62	1%
<b>Subtotal</b>	<b>7,478</b>	<b>100%</b>
<b>Total w/Chester City</b>	<b>10,424</b>	<b>NA</b>

Source: Year 2000 United States Census Journey to Work

Table 3 shows that about 55 percent of workers (4,118) originate within Delaware County. This does not include workers living and working within Chester City (2,946). The greatest movements of workers into Chester City come from Ridley (364), Upper Chichester (351), and Upper Darby Townships (322). These commutes are reflected in the ridership of SEPTA bus routes 109 and 119 passing through the municipalities.

Figure 3 on the next page illustrates the major commuting flows into Chester, which are dominated by the City of Philadelphia (851) and the State of Delaware (826). The flows originating from Philadelphia and New Castle County are shown with red arrows. Both of these adjacent areas have connections into Chester City by SEPTA R2 Regional Rail and I-95 which makes the commute relatively easy and convenient. The secondary flows originate from Ridley, Upper Chichester, and Upper Darby Townships in Delaware County and are shown with an orange arrow.

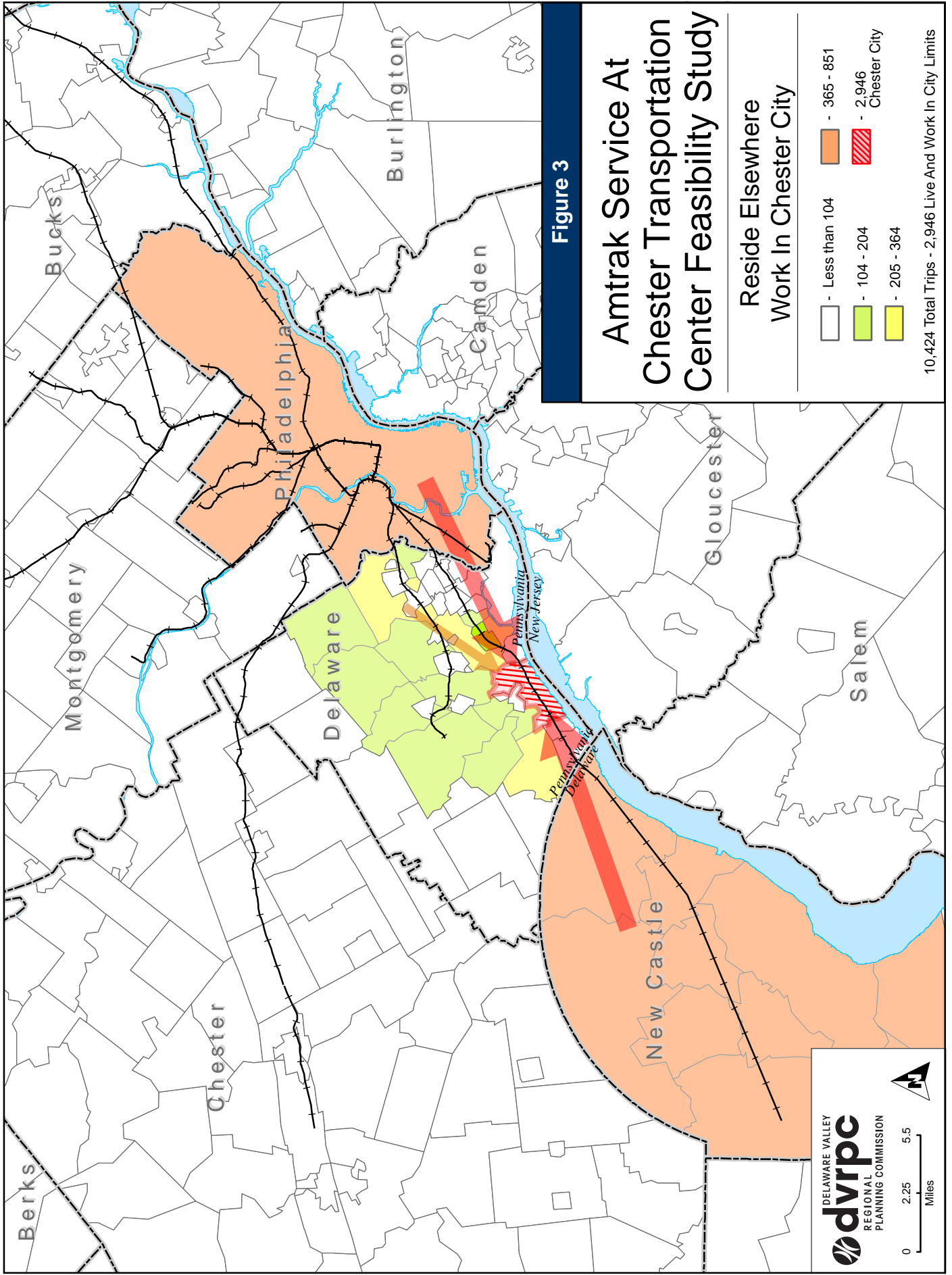


Table 4 summarizes the outbound flow of workers originating in Chester, but working outside the city. Included for comparison is the number of people who live and work in Chester City.

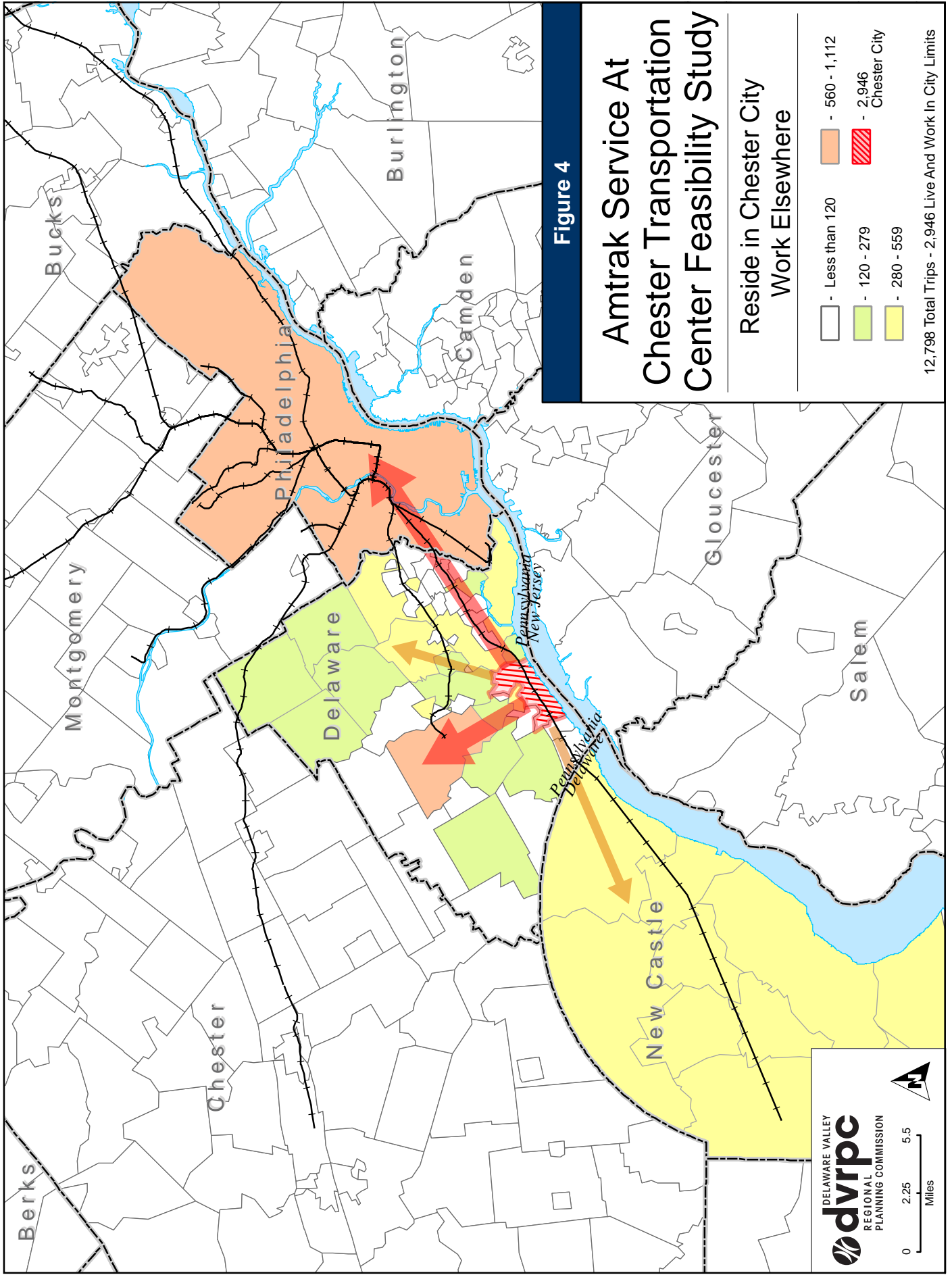
**Table 4. Reside in Chester City-Work Elsewhere**

Work Destination	Number of Workers	Percent of Total
Live/work in Chester City	2,946	NA
Delaware Co. (not Chester City)	7,193	73%
Bucks Co.	13	0%
Chester Co.	513	5%
Montgomery Co.	339	3%
Philadelphia Co.	1,020	10%
Burlington Co.	21	0%
Camden Co.	51	1%
Gloucester Co.	47	0%
Mercer Co.	10	0%
New Castle County	522	5%
New Jersey State (excluding above)	21	0%
Pennsylvania State (excluding above)	50	1%
Other	52	1%
<b>Subtotal</b>	<b>9,852</b>	<b>100%</b>
<b>Total w/Chester City</b>	<b>12,798</b>	NA

Source: Year 2000 United States Census Journey to Work

Table 4 shows the majority of commuter trips from Chester City (73%) are into the County of Delaware. The greatest destinations include Middletown (1,112) and Springfield (559) Townships, and Media Borough (551). About 10 percent of Chester residents work in Philadelphia (1,020) and 5 percent work in New Castle County (522).

Figure 4 on the next page illustrates the commuting flows out of Chester City. The greatest flows towards Philadelphia and Middletown Township are shown with red arrows. The secondary flows going to New Castle County in Delaware State and municipalities just east of the I-476 freeway in Delaware County are shown with orange arrows. The major destinations are relatively close to Chester and in the case of New Castle and Philadelphia, already served by SEPTA rail service to/from Chester.



## Summary

Population and employment in Chester City are both forecast to grow, with employment increasing at a faster rate than population. There are about 3,000 persons who live and work in the City, about 7,500 people who work in Chester but reside elsewhere, and about 10,000 Chester residents who commute to work outside the City. The largest employers in Chester are Kimberly Clark and Harrah's Chester Casino and Racetrack. Rail transit connects Chester City with the two large work origins and destinations of Philadelphia and New Castle County. Other areas within Delaware County act as major origins and destinations that are served by bus service along the Route 291, 322, and other corridors into nearby municipalities.

## 2.2 The Chester Transportation Center and Transit Service

The Chester Transportation Center is located in the eastern portion of Chester City and is the nexus for seven SEPTA bus routes and the R2 Wilmington regional rail line which runs on Amtrak's NEC rail facility. The 93-year-old Classical Revival/Beaux Arts rail station is a multimodal transportation center restored to its original condition for \$7.5 million, features weather-protected bus berths and train platforms, pedestrian canopies, a new public entrance plaza, improved signage and lighting, and improved security.

The boards on these routes are listed in Table 5, and are shown in Figure 5 on the next page. The table shows 2003, 2005, and 2007 ridership by route. The bus figures are aggregate numbers reflecting the overall strength of the route rather than specific boards in Chester, though the R2 railroad boarding numbers originate at the CTC.

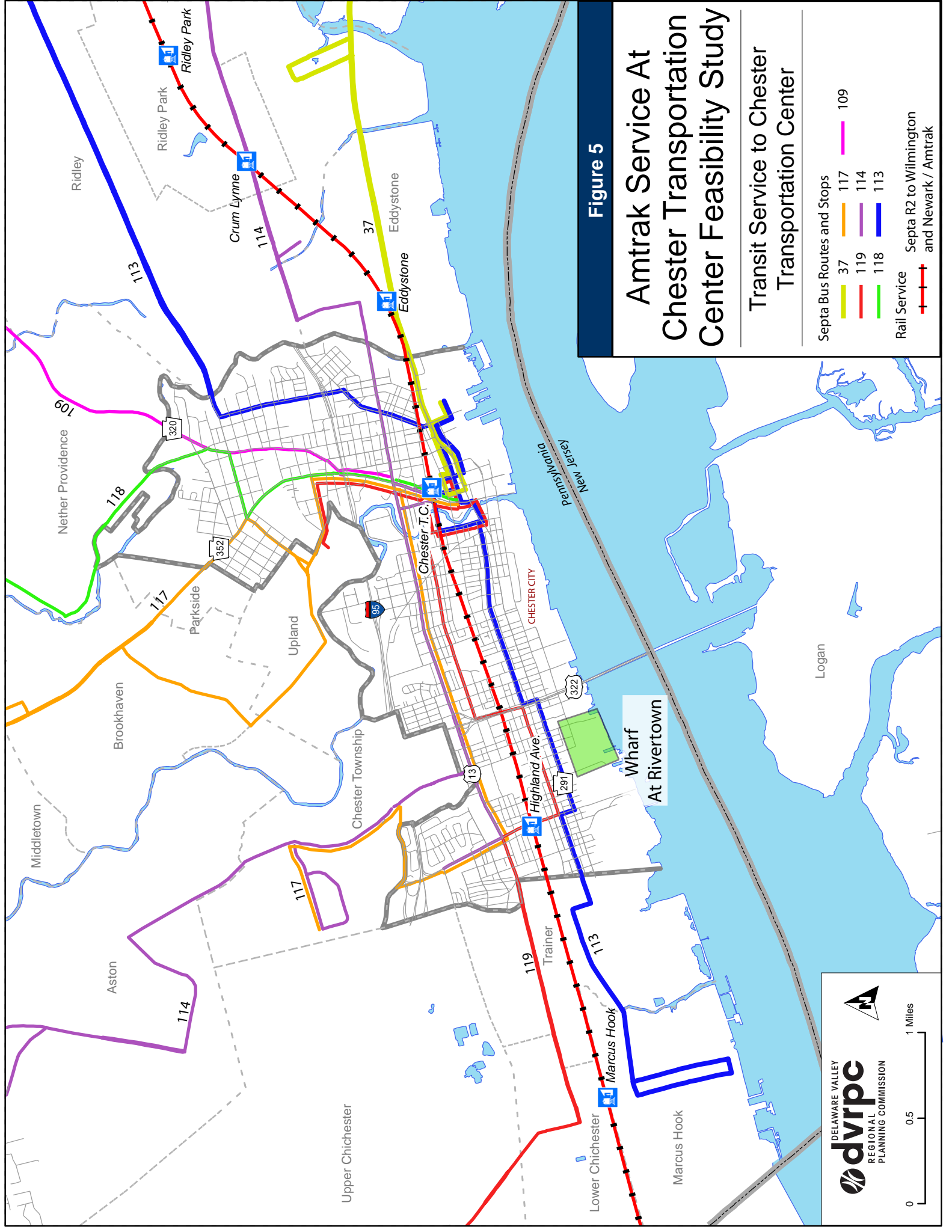
**Table 5. Chester Transportation Center Transit Routes**

Bus/Train Route	2003 Boards	2005 Boards	2007 Boards	Total Change 2003-07	Percent Change 2003-07
37	2,703	3,241	3,541	838	31%
109	4,228	4,190	4,192	-36	-1%
113	4,605	5,277	5,423	818	18%
114	2,111	1,918	1,859	-252	-12%
117	1,182	2,520	2,386	1,204	102%
118	707	622	630	-77	-11%
119	860	641	640	-220	-26%
R2	236	345	345	109	46%

Source: SEPTA 2003, 2005, 2007 Route Mile Reports; SEPTA 2007 Regional Rail Ridership Census.

Total bus ridership has grown since 2003 and generally remained steady since 2005, reinforcing many of the journey to work flows shown in Figures 3 and 4. Rail boards at the CTC have also grown again, remaining steady over the last few years.





**Figure 5**  
**Amtrak Service At**  
**Chester Transportation**  
**Center Feasibility Study**  
 Transit Service to Chester  
 Transportation Center

- Septa Bus Routes and Stops
- 37
  - 117
  - 109
  - 119
  - 114
  - 118
  - 113
- Rail Service
- Septa R2 to Wilmington and Newark / Amtrak

**Bus Service**

There are seven SEPTA bus routes which currently serve the City of Chester and make connections at the Transportation Center: Routes 37, 109, 113, 114, 117, 118, and 119. Harrah's Casino and Racetrack is approximately one-half mile from the CTC and two routes, 37 and 113, were recently re-routed to provide specific access to the new casino.

Route 37 begins in South Philadelphia at Snyder Station on the Broad Street Subway and travels to the Chester Transportation Center, with service through Philadelphia International Airport, as well as Girard Estates, Elmwood, Eastwick, Lester, and Essington. The route was amended so that buses now turn onto Morton Avenue and continue onto the casino before returning to 4<sup>th</sup> Street/PA 291 (see Figure 6 for route detail).

Route 109 is the only route within the area that currently operates on a 24 hour schedule. This bus runs from 69<sup>th</sup> Street Terminal in Upper Darby to Chester Transportation Center serving East Lansdowne, Lansdowne, Clifton Heights, Springfield, and Swarthmore.

Route 113 extends from 69<sup>th</sup> Street Terminal to Marcus Hook Station on the R2 Line, with service through Darby, Lansdowne, Collingdale, Holmes, Folsom, Woodlyn, and Trainer. The 69<sup>th</sup> Street Terminal is the western terminus of the Market-Frankford Line, and is a hub for numerous bus lines as well as SEPTA's Route 100 Norristown High Speed Line. To extend the route to provide access to the casino, buses now continue further south on Morton Avenue before looping around back onto 4<sup>th</sup> Street (see Figure 7 for route detail).

Route 114 operates mostly along US 13 in the study area with a spur into the transportation center site. It begins its southbound run from Darby Transportation Center along US 13, Concord Road, and PA 452 then Baltimore Pike before it ends at the Granite Run Mall.

Routes 117, 118, and 119 also serve Chester Transportation Center. Route 117 begins its southbound run from Penn State – Delaware County Campus, serves Chester, and then goes on to Feltonville. Routes 118 and 119 both terminate their southbound run in Chester but begin at Newtown Square and Cheyney University, respectively.

Figures 6 and 7 on the following pages show recent changes to bus routes 37 and 113, respectively. These changes were accomplished through SEPTA's 2007 service planning process. Changes include extending service hours and routing to provide specific access to the new casino. Both changes were designed to facilitate greater access to Harrah's Chester Casino and Racetrack for employees working there and to improve access for patrons.

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## Rail Service

SEPTA's R2 Wilmington / Newark regional rail line provides rail service between Delaware State and Center City Philadelphia (continuing to Norristown), with its primary service corridor running through southeastern Delaware County. In addition to serving the Chester Transportation Center and Highland Avenue Station, it also makes stops at Eddystone Station at PA 291 and Saville Avenue in Eddystone Borough, which is close to Harrah's Chester Casino and Racetrack. The SEPTA R2 Wilmington line runs on the Northeast Corridor through a lease agreement with Amtrak. This agreement permits running on the outside of four tracks in the Amtrak right-of-way, with Amtrak running through trains on the middle two tracks.

Chester is served by 26 inbound SEPTA trains on a weekday between the hours of 5:56 a.m. and 12:46 a.m., and 27 outbound trains between the hours of 5:21 a.m. and 12:03 a.m. Weekend service is limited, with Saturdays having 17 inbound and 17 outbound trains between 6:23 a.m. and 11:24 p.m. and Sundays having 14 trains in each direction between 8:03 a.m. and 9:43 p.m.

Historic boards at the Chester Transportation Center have decreased from highs in the mid 500's in the late 1970s and have hovered in the mid 300's since 1995. By way of comparison, Table 6 below lists estimated Amtrak boards at other stations along the Northeast Corridor. The estimated annual numbers have been divided by 365 to obtain an average daily boarding figure. This method provides a general comparison, though using an annual average depresses the weekday numbers. Another caveat is that train service frequencies differ between stations, also affecting total ridership. Different stations with different services are not entirely compatible, but they do provide a gauge for considering service at Chester Transportation Center.

**Table 6. Comparison of Amtrak/SEPTA Boardings by Station**

NEC Amtrak Station	2007 Estimated Annual Boards	2007 Estimated Daily Boards
New Rochelle, NY	79,100	216
New Brunswick, NJ	6,820	18
Princeton Junction, NJ	59,680	164
Cornwells Heights, PA	7,720	22
Newark, DE	7,182	20
Aberdeen, MD	38,702	106
Chester TC - SEPTA R2	NA	345
Newark, DE - SEPTA R2	NA	342

Source: Amtrak Government Affairs, 2008; SEPTA 2007 Regional Rail Ridership Census

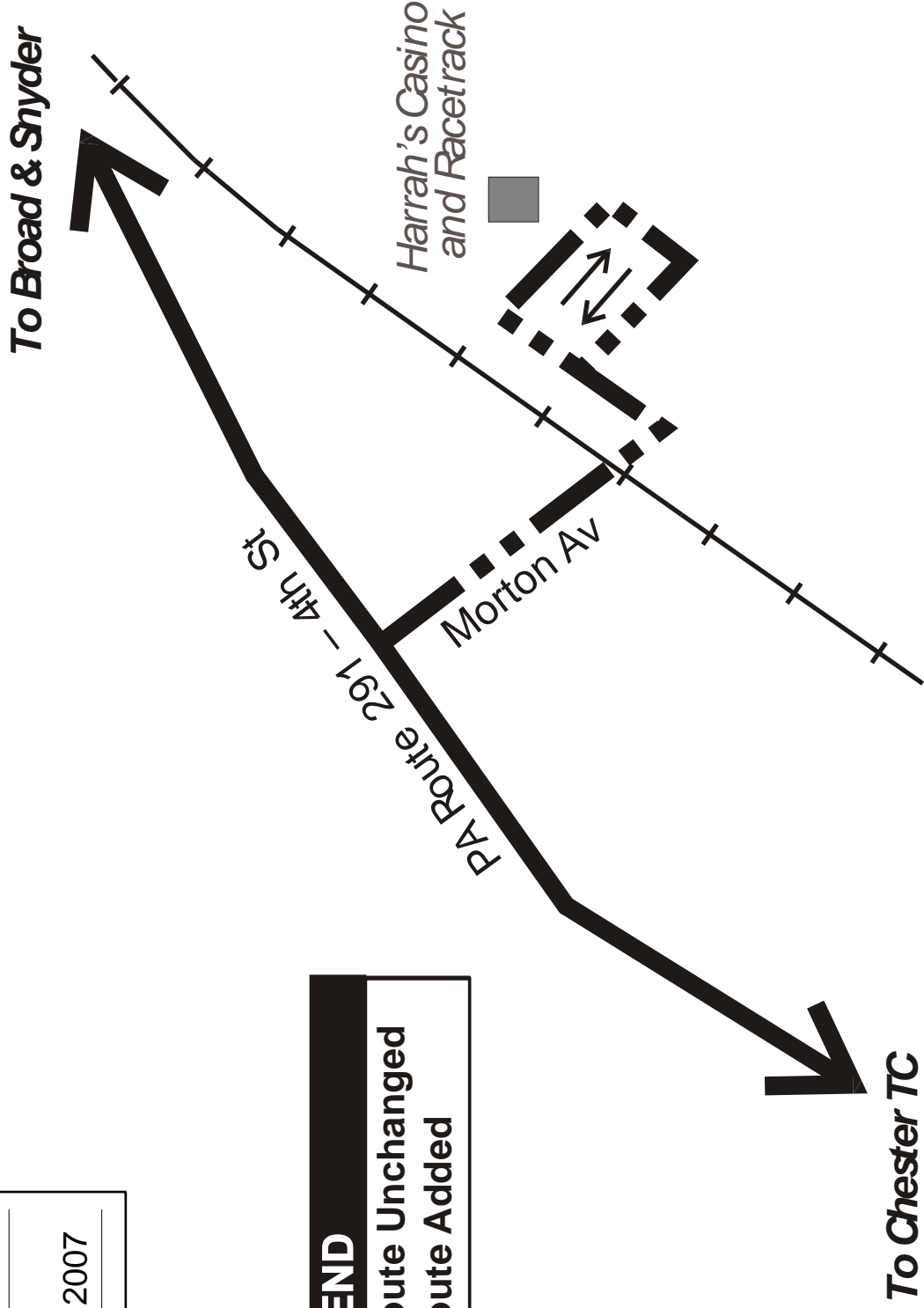
Figure 6

# Amtrak Service At Chester Transportation Center Feasibility Study

Route 37:  
SEPTA Service Planning 2007

## LEGEND

- Route Unchanged
- Route Added



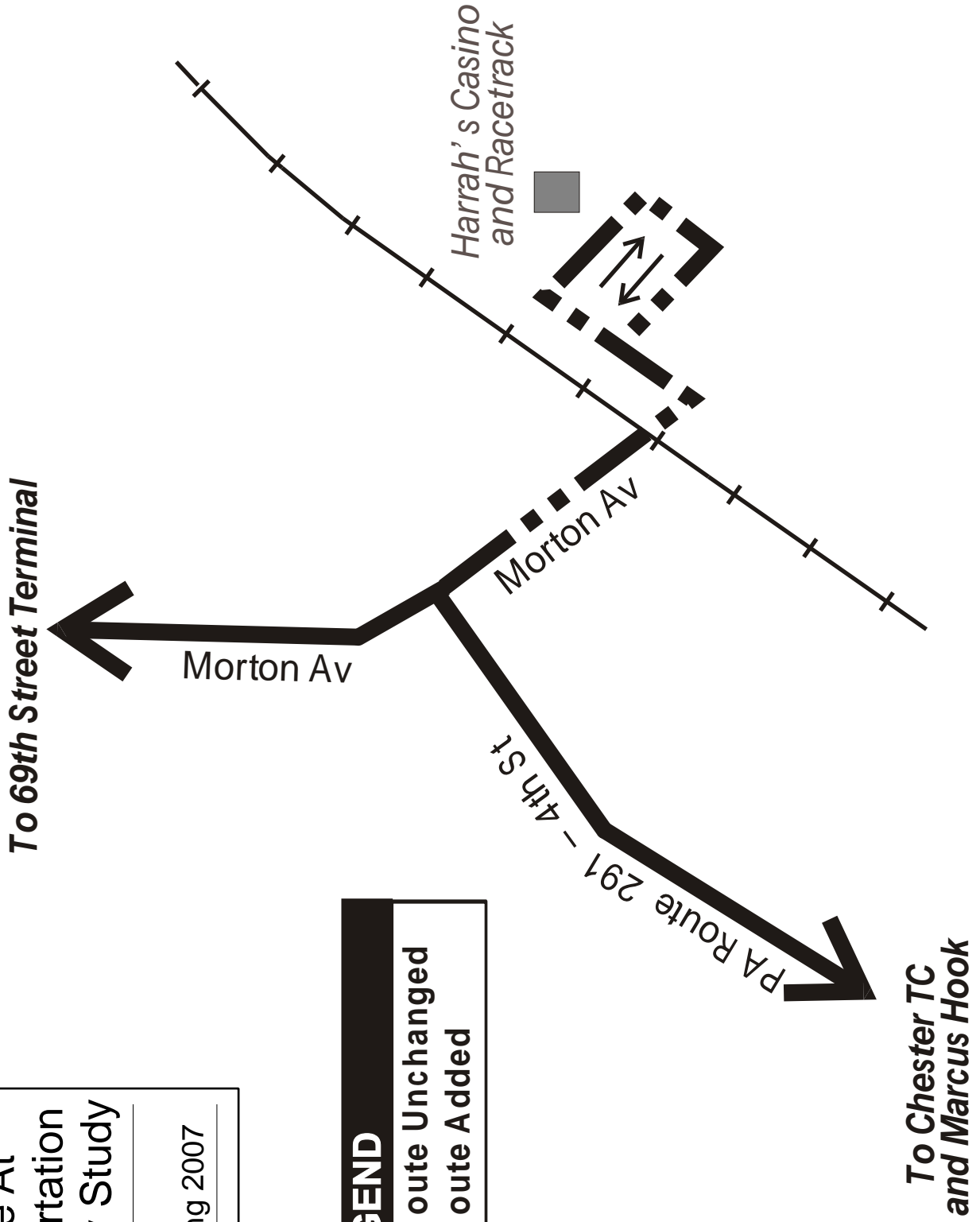
**Figure 7**

**Amtrak Service At  
Chester Transportation  
Center Feasibility Study**

Route 113:  
SEPTA Service Planning 2007

**LEGEND**

- Route Unchanged
- Route Added



One observation from Table 6 is that current SEPTA boards at Chester and at Newark stations exceed estimated daily boards at all the other Amtrak stations, in many cases by more than double. Even assuming that the estimated daily Amtrak numbers are low, they remain smaller than the SEPTA boarding counts at CTC. This may be a function of lesser frequencies at the smaller Amtrak station stops in comparison to the relatively high frequencies which SEPTA provides. This may suggest that the smaller NEC Amtrak stations are neither generators nor destinations of significant long distance interstate travel. This undermines, to some degree, an appeal for Amtrak service at Chester. While Amtrak policy towards the smaller volume stations remains cloudy, it is possible that any desire to speed Northeast Corridor service would seek to eliminate, rather than add these types of stations.

### **Summary**

A combination of local, regional and inter-regional public transportation service is staged from the Chester Transportation Center, though the station is not adjacent to any major destination activities. Bus routes provide connections throughout the County of Delaware to 69<sup>th</sup> Street Terminal, Granite Run Mall, and Penn State among others. Access to these destinations via train and bus requires a two-seat connection. Recent changes in bus routings and service time extensions to Harrah's Chester Casino and Racetrack serve riders who are a combination of local employees, customers, or people with other destinations in mind. Rail comparison with similar small stations suggests that the demand for interstate travel from these other smaller stations may not be particularly strong. As will be shown later, replicating SEPTA R2 frequencies to boost Amtrak ridership at Chester is at odds with safety, capacity, and speed issues.

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### 3.0 PLANNING ISSUES TO CONSIDER

A number of planning issues require examination in determining the feasibility of Amtrak service to Chester Transportation Center. The three most prominent are as follows:

- Amtrak owns the Northeast Corridor right-of-way which consists of a four track configuration with Amtrak, SEPTA, and freight traffic sharing the tracks. Train movements to permit access to the Chester station are limited due to track arrangement, scheduling, and safety concerns.
- The lack of parking at the station has been cited as a problem in attracting riders who reside outside the walking area of the station. Potential parking exists nearby, but would require negotiations with landowners.
- The justification for interstate rail service beyond trips to northern Delaware is not well-defined. As an origin, it is not clear to what extent the CTC has an advantage or built-in demand. As an interstate destination, it remains to be seen what attractors are in place to generate necessary demand.

Each issue presents challenges to be addressed if negotiations for Amtrak service at Chester Transportation Center should ever commence.

#### 3.1 Northeast Corridor Operations at the Chester Transportation Center

The Northeast Corridor is owned by Amtrak which leases rights to its tracks to SEPTA for passenger service and Norfolk Southern for freight service, as well as running its own passenger service. All service along the corridor is negotiated with Amtrak and is subject to their approval.

Currently, about 135 trains (82 Amtrak and 53 SEPTA) operate along the corridor shown on Figure 8. A total of 82 Amtrak trains pass Chester City traveling between Wilmington and Philadelphia each weekday (41 in each direction). Amtrak trains make scheduled stops at Philadelphia 30<sup>th</sup> Street Station to the northeast, and at Wilmington Station to the southwest. Of these, 8 are long distance through trains (4 in each direction), 30 are Acela high speed trains, and 44 are regional trains. Along with SEPTA's 53 weekday trains (26 in, 27 out) and other freight service, this is a heavily traveled section of rail.

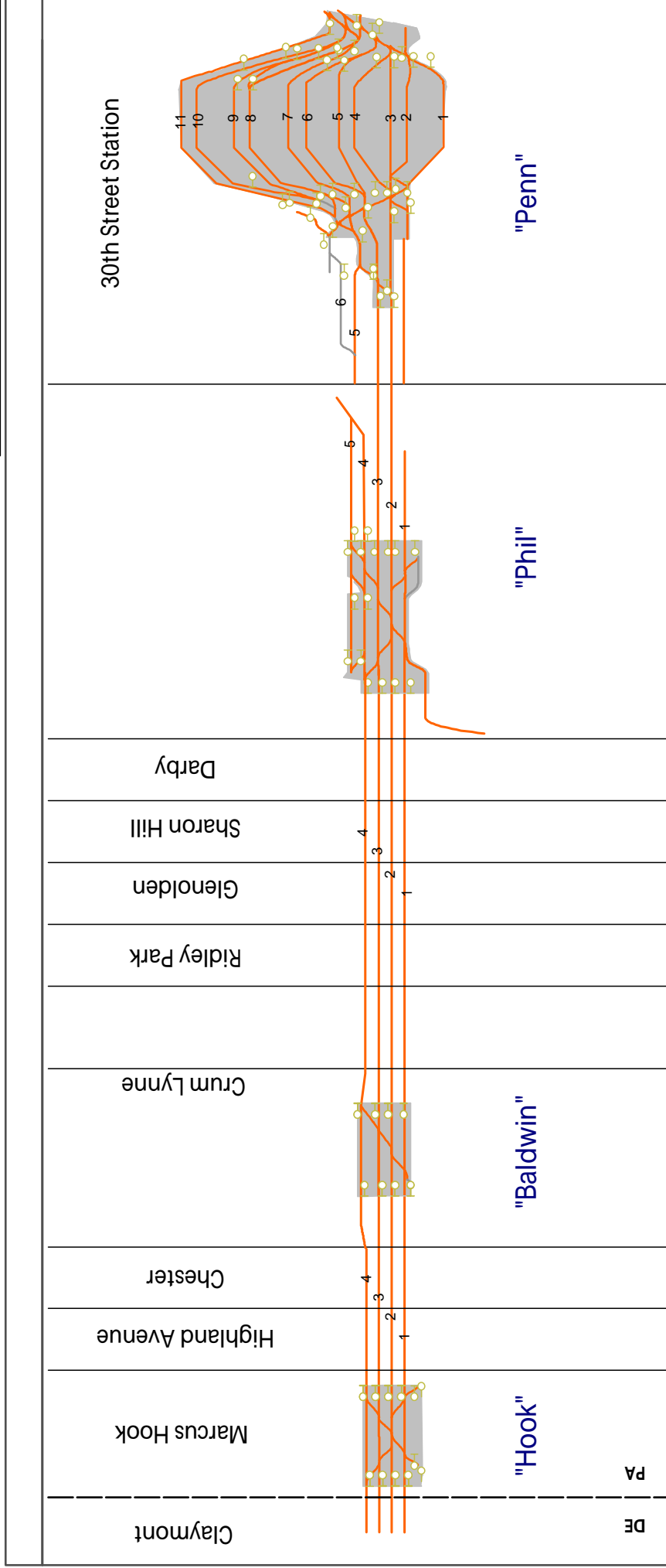
Operations along this east coast rail corridor are exceedingly complex and busy. The method of managing this traffic is by interlockings. In railway signaling, an interlocking is an arrangement of signal apparatus that prevents conflicting movements through an arrangement of tracks such as junctions or crossings. Figure 8 shows "Hook," "Baldwin," "Phil," and "Penn" interlockings in the study area. With the exception of the Baldwin interlocking, these are "universal" devices permitting a series of train movements between all the tracks.

Figure 8

# Amtrak Service At Chester Transportation Center Feasibility Study

Northeast Corridor Interlockings  
In The Study Area

## NORTHEAST CORRIDOR - MID-ATLANTIC DIVISION



Source: PennDOT Bureau of Public Transportation, 2006



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All southbound trains leave 30<sup>th</sup> Street Station confined to tracks 2 and 3 in the middle unless there is track work. SEPTA trains generally shift to tracks 1 and 4 on the outside, where station access is possible. Amtrak trains stay on tracks 2 and 3 to provide clear running. Looking at Figure 8, it is easy to visualize how multiple train services could have conflicting movements crossing between inner and outer tracks to access the station.

Under the proposal for Amtrak service to CTC, an Amtrak train heading south from Philadelphia 30<sup>th</sup> Street Station would have to cross over from the #3 track to operate on #4 track to access Chester Station. While on Track the #4 it would have to share trackage with R2 Marcus Hook-Newark trains and after picking up passengers would need to get back to the #3 track. Coming north, Amtrak would have to cross over to the #1 track to pick up passengers and share track with R2 trains through Chester and until it could cross back over to track #2 to continue the trip into 30th Street Station.

An extended staging area for train movements between “Penn” and “Hook” would be complicated by the time of day (peak versus off-peak) and other passenger and freight services operating at the same time on the same tracks. These movements would also affect travel times on trains with through service by requiring changes in the schedules to allow track sharing. Crossing active tracks with crosswalks, though done on a temporary basis when track work is being performed, is not considered viable for long-term operation. Scheduling minimal service stops during the day at CTC, would create potential blocking movements for both through Amtrak trains as well as SEPTA service.

Amtrak’s interstate service and SEPTA’s regional service provide different, though coordinated, operation plans from each other. Beyond concerns about safety and extended travel times, the bottom line is that Amtrak provides a through service which is best accomplished through segregated operations. A glitch at any section of the NEC has repercussions along the entire line. The interlockings at Hook and Phil, and others along the line are modern and capable of performing the movements, so train service is possible. Issues of Amtrak primacy over NEC operations may be the single biggest impediment to new Chester service.

### **3.2 Parking at Chester Transportation Center**

The lack of parking at the CTC limits the station from being a passenger generator. There is a private parking lot across Welsh Street from the station that R2 riders can use, but Chester remains one of the few SEPTA Zone 3 stations without any SEPTA on site parking. The availability of parking at nearby stations (such as Media or Swarthmore on the R3 line) attract those in the Chester ride shed towards a more auto-accessible train station. Available figures show that there were 345 total boards (inbound and outbound) at Chester Transportation Center in 2007. These would all appear to be a combination of drop offs, bus transfers, and walk ups.

The rule of thumb is that increasing parking increases ridership at outlying or suburban stations. Being situated in a fairly dense commercial area, the opportunities to expand

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Chester Transportation Center's available parking spaces are limited. Road access from the surrounding area to the station is also limited. There is no convenient access from either I-476 or I-95. There is a large lot one block east of the station near 6<sup>th</sup> and Welsh streets, but it is not available for daily or long-term train parking. There are no other opportunities for parking around the station.

New parking facilities in the vicinity would have to overcome the perception of crime and safety concerns for overnight or multi-day passengers. Any lot would need to be monitored for vandalism and other concerns drivers may have leaving a car for any length of time. Passengers on interstate trains who are leaving their car overnight need to feel confident that their car is safely parked. Safe access to the private lot, adjacent to the CTC, is also a necessity.

There are also physical constraints on the ability to expand nearby parking. Satellite lots located farther away, require shuttles, add another seat to the trip, and are not viewed favorably. Any arrangement of shared parking would benefit SEPTA commuters, though its value to Amtrak interstate ridership may be limited given the large alternate facilities such as 30<sup>th</sup> Street Station which are easily accessed by car.

If Harrah's Casino and Racetrack is the primary Chester destination for the interstate traveler, it makes sense to drive there directly. It already has a large parking capacity, and a recent gaming study (*Impacts of Gaming in Greater Philadelphia*, DVRPC, 2006, Publication #06042) suggests that transit has little attraction for the typical gamer. Employees are more likely to ride transit to the casino, and changes to local SEPTA routes 37 and 113 were made to account for extended employment hours and direct casino access.

### **3.3 Chester City as an Interstate Rail Destination**

Chester overall has seen major development in the last ten years, such as the new Wharf at Rivertown, and a brownfield conversion of the former PECO Chester Power Station into Class A office space. A new Municipal Building and Chester Community Charter School have been built in recent years and plans are underway for a soccer stadium to house a professional soccer franchise.

Perhaps the most heralded attraction is Harrah's Casino and Racetrack. This is a 5/8-mile harness racetrack and a 2,500-slot casino which opened in January of 2007. In addition to the racing facilities, 2,500 slot machines, an amphitheatre, a public promenade, and a variety of dining options are planned for this site. Parking is available in a garage with 2,598 self-park spaces and 575 valet spaces.

The casino operates 24 hours a day and harness races will be run 150 days a year. Employees will work one of three shifts: 200 employees for the midnight shift, 450 employees for the 8 a.m. day shift and 350 employees for the 4 p.m. swing shift. Harrah's Chester Casino and Racetrack officials indicate the casino and racetrack

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provides about 900 to 1,000 full/part-time positions (70 of which will be at the racetrack). Enhancements to SEPTA's Route 37 and 113 buses (described earlier) were designed to account for these shift changes and provide transportation to the CTC.

Philadelphia Park is a competing gaming establishment of comparable size and scale, located north and east in Bensalem, Pennsylvania. Philadelphia Park has roughly the same number of slot machines and horse races, as well as similar numbers of dining and entertainment options. Delaware Park, near Wilmington Delaware, is another larger gaming destination which is south of Chester City. Other gaming facilities are proposed for the Philadelphia waterfront and the central business district. The proximity of these gaming facilities within easy access to the NEC and I-95 corridor may dilute the interstate destination appeal of Harrah's Chester Casino and Racetrack and Chester City, reducing justification for a new interstate rail service.

Figure 9 on the next page, taken from the 2005 Orth-Rogers traffic analysis associated with the casino, shows regional automobile travel times to Harrah's Chester Casino and Racetrack. The two casinos mentioned previously, Philadelphia Park to the north and Delaware Park to the south, are outside the 30 minute peak time band shown in white. The 30 minute off-peak time band shown in light blue extend the coverage from Newark Delaware to near Bensalem, and north to the King of Prussia area. New casinos planned along the Philadelphia waterfront and potentially in Center City Philadelphia, under either peak or off-peak scenario would lie within the geography of Harrah's Chester Casino and Racetrack.

The map shows the influence of interstate I-95, I-476, I-295, and the New Jersey Turnpike as access corridors to Harrah's Chester Casino and Racetrack, though there is no direct access from the interstate highways. The I-476 highway corridor may be a better conduit for providing service to the casino than the NEC. While no trains run along I-476, this corridor does not have competing casinos located in the area, and so it may be a more natural core market for Harrah's Casino and Racetrack. The I-476 corridor also serves many employment locations such as King of Prussia and Plymouth Meeting (which is on the edge of the 30 minute boundary).

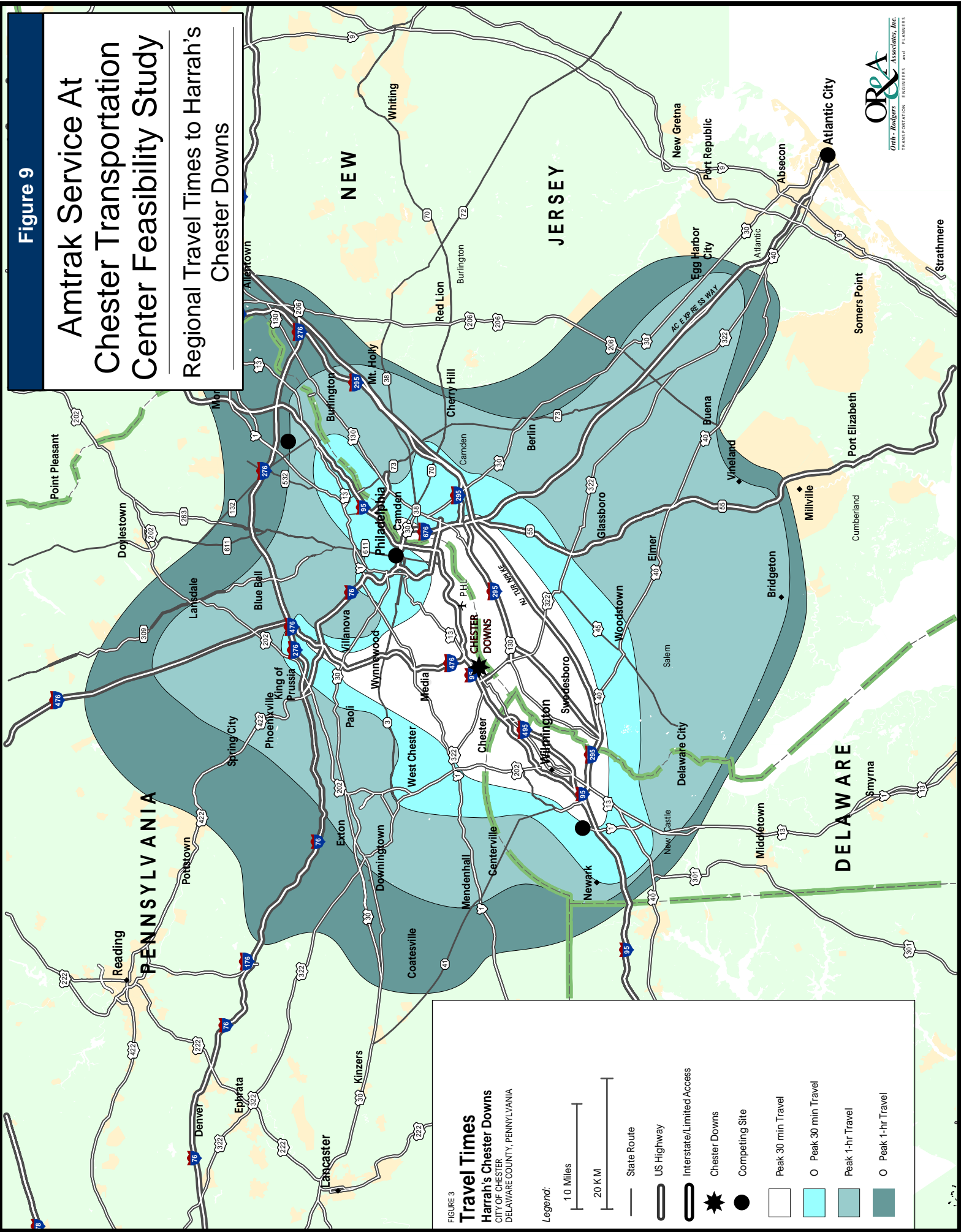
Current SEPTA service meets many of the interstate access requirements, as well as already stopping at Chester Transportation Center. Given the competing presence of gaming facilities to the north and south, the natural catchment area for Chester Downs would not appear to lie along the NEC, but north into Delaware County and across the Commodore Barry Bridge into New Jersey. SEPTA rail and bus service in the corridor is plentiful and well-used, but any connection at the CTC would require at least a two seat ride since the CTC is not adjacent to the new development.

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Figure 9

# Amtrak Service At Chester Transportation Center Feasibility Study

## Regional Travel Times to Harrah's Chester Downs



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## 4.0 SUMMARY

As stated in the beginning of this report, there are three issues defining the ability and utility of Amtrak service into Chester Transportation Center.

### 1. The Context

There are strong commuting patterns between New Castle County Delaware and both Chester City and Philadelphia. There is also patterning to the north to Middletown and Springfield Townships. Chester City employment is forecast to grow at a faster rate than the rest of Delaware County, and there is considerable employee movement in and out of Chester. These movements can be accomplished largely by the current rail and bus service into and out of Chester City. When these movements are viewed in terms of automobile travel time, rather than transit, a catchment area emerges following I-476 through the County of Delaware to employment and shopping areas of King of Prussia and Plymouth Meeting.

### 2. Potential Constraints and Planning Issues In The Study Area

The heavily scheduled traffic along the Northeast Corridor limits additional stops and increases the expense of any track switching which might disrupt or slow NEC service. Amtrak service to the CTC is possible, but would require strong justification to Amtrak to mix operations between inner and outer tracks. Any new agreement may require compensation for any "lost" service assumed by Amtrak.

Another issue is whether sufficient ridership would be generated at the Transportation Center to justify new service. Historic services at stations with limited service have a smaller number of boards compared to regional services provided by SEPTA at Chester. Even student generators at university stations like Princeton Junction and New Brunswick show small estimated daily numbers.

Lack of parking at the station constrains the number of train or bus boards to residents who are either close enough to walk or those who ride the bus. Any expansion of parking would likely benefit SEPTA ridership more than Amtrak.

### 3. Potential Alternatives for Serving the Emerging Destinations in Chester City

Harrah's Casino and Racetrack catchment area follows the Northeast Corridor and the region's interstate roads into New Jersey and Delaware. It bookends Chester City with two competing gaming sites and would be proximate with proposed gaming venues in Philadelphia. Given demographic flows and travel time geography, the connections along I-476 and Route 322 may be more important than the connections along the NEC and I-95. Since any rail trip to CTC necessitates a two seat ride to the casino anyway, regional coach bus shuttles from 30<sup>th</sup> Street station or King of Prussia Mall and other established interstate sites may yield a greater benefit than interstate Amtrak service, and be easier to implement.

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#### 4.1 Additional Ideas for Creating Connections to Chester City

Enhancing the connections to Chester City and its burgeoning attractions could catalyze Chester City becoming a feasible site for future Amtrak service. What follows is a list of some possible ways to facilitate access from the Chester Transportation Center to Harrah's Casino and Racetrack and the broader developments in Chester City.

- Direct Coach Service from 30<sup>th</sup> Street Station

One idea is to provide direct coach bus service to pick up interstate travelers from the 30<sup>th</sup> Street Amtrak station and deliver them directly to a preferred destination in Chester City. In this scenario, interstate passengers would be picked up to go directly to Harrah's Casino and Racetrack. Casinos, such as Delaware Park near Wilmington, multitudes of Atlantic City casinos, and the Mohegan Sun and Foxwoods in Connecticut, commonly operate such services. A luxury coach bus, appropriately decorated and identifiable, collecting interstate passengers at specified areas at existent Amtrak train stations, provides an interface with the gaming venue preparing passengers for the experience which awaits them.

- Ferry Boat Service

Harrah's Casino and Racetrack is situated on the Delaware River Waterfront, as are other Chester City attractions such as the Riverwalk and the planned soccer stadium. Partnering with an area boat tour company would enable yet another mode of access to the casino. Perhaps a novelty service such as Center City Philadelphia's amphibious "Ducks" tours could be amended to pick up passengers on land and move them across or down the river from Philadelphia's waterfront or Navy Yard Areas to destinations in Chester. While this would not improve access to the Transportation Center, it would help connect Philadelphia's ample tourist population to the casino or transport people from points in New Jersey.

- I-476 Express Bus Service

The feasibility of an I-476 express bus should be considered to both improve access to Chester Transportation Center and other Chester City attractions as well as to allow Chester City residents better access to job opportunities in southern Montgomery County. I-476 connects with major destinations such as the King of Prussia Mall, located west via I-76 and the Plymouth Meeting Mall, located at the junction of I-476 and I-276 (see Map 9). A 2003 DVRPC study (*Mid-County Expressway I-476 Express Bus Feasibility Study*, Publication #03008) examined this idea, using the Matson Ford Park-and-Ride as an intermediate pick-up location.

At the time of this study, SEPTA Bus Route 118 connected Chester City to King of Prussia. The long headways (around 80 minutes round-trip from Chester Transportation Center to King of Prussia) and the hours of operation made it an impractical work journey for Chester City residents, and because of a lack of ridership through to King of Prussia, the route was eventually amended to travel only so far as Newtown Square, via Media.

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Estimated ridership between 5,000 and 8,000 annual riders for the conceived I-476 express bus was roughly equivalent to a number of Transportation Management Association shuttle services such as the Community Coaster and the Quicksilver IV. This connection would require working with Montgomery and Delaware County Transportation Management Associations to coordinate the specialized service.

In the long-term, the creation of an I-476 express bus could also enhance Chester City's potential for Amtrak service, because it would connect potential users in northern Delaware and southern Montgomery counties with the Chester Transportation Center. The express bus would be an attractive alternative to driving and parking at 30<sup>th</sup> Street Station.

- **Chester Municipal Lot Shuttle**

With the opportunities to expand parking at the Transportation Center limited, a free shuttle service making stops at city-owned lots in Chester might be considered to attract more ridership. It could potentially pull in riders from the wider ridership shed who live nearby, but commute to another station with its own parking. Though this strategy would not necessarily add riders, but merely displace them, and it would still require enhanced security at the respective locations. If parking could be expanded at the Transportation Center, another option for the shuttle would be express service to and from the Philadelphia International Airport. This alternative, however, does nothing to enhance Chester City as a destination nor boost the rail and bus ridership at CTC.

## **4.2 Current/Future Transportation Projects**

Several projects are currently programmed on DVRPC's FY 2007 Transportation Improvement Program (TIP) for FY2007-2010 that could potentially enhance mobility in the study area, and also strengthen Chester City as a destination. The TIP operates on a federal fiscal year which starts on October 1 and ends on September 30. Funding programmed in a particular year of the TIP indicates that a phase is expected to advance during the fiscal year, and does not reflect whether that phase has begun or if it is complete. The list below, along with the assigned MPMS number provides an overview of known funded projects in the study area.

**MPMS# 65127: Chester Waterfront Development/Streetscape** – funds streetscape improvements and enhancements along Highland Avenue and Flower Street, in support of the Wharf at Rivertown brownfield redevelopment project along the Delaware River.

**MPMS# 65912: Chester City Riverwalk** - creates a bike and pedestrian facility along the Delaware River from Flower Street to the end of the old Chester Generating Plant near Highland Avenue, adjacent to Seaport Drive.

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**MPMS #65923: Chester City East Coast Greenway** – construction of a portion of the East Coast Greenway in Chester City. The project will consist of a twelve foot wide bicycle/pedestrian path paralleling a new Seaport Drive roadway south of PA 291 from Barry Bridge Park to Highland Avenue. See companion projects MPMS #65912 and 71202. \$500,000 TE funds were approved during the project selection process, to be programmed at the appropriate time, drawing funds from MPMS #64984.

**MPMS #70245: Chester City Access Improvements II** - This project will provide for the widening of Chestnut Street from 10th Street to 12th Street without adding additional travel lanes, and the reconfiguration of the intersection at Chestnut St./10th St./ Morton Ave. (SR 0013). This project was broken out from MPMS # 57780/TIP #7915. This road segment is proposed for inclusion in the Delaware County Bicycle Plan. SAFETEA DEMO #868 - \$2.4 million SAFETEA DEMO #4813 - \$1 million is on MPMS #57780 SAFETEA DEMO #4735 - \$5 million is on MPMS #57780.

**MPMS# 71202: East Coast Greenway/Chester Riverfront Phase II** – connects portions of the East Coast Greenway/Riverwalk with PA 291 along Flower Street and Highland Avenue. \$517,500 in TE funds were approved during the FY2004 project selection process, to be programmed at the appropriate time, drawing funds from MPMS #64984: Highway Transportation Enhancements project. Companion projects also include MPMS #65912: Chester City Riverwalk and MPMS #65923: Chester City East Coast Greenway.

**MPMS #72913: Chester Commercial Business District** - This is a Hometown Streets streetscape project for the central business district adjacent to the Transportation Center. It is funded by the Hometown Streets/Safe Routes to School program. Funding will be drawn down at the appropriate time for the construction.

**MPMS# 57780: Rt. 322/Comm Barry Bridge/I-95 2nd St. Interchange** - Construction of a new off-ramp from US 322 eastbound, and a new on-ramp to US 322 westbound. Construction of this new 2nd Street Interchange from the Commordore Barry Bridge/ US 322 to Route 291/2nd Street in the City of Chester will provide more direct access to the Chester waterfront and will include new lighting, signing, drainage, and traffic signal installations.

While none of these are specifically transit related, taken together they are indicative of a climate of enhanced accessibility and mobility in order to bolster Chester City as a destination.

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## 5.0 CONCLUSIONS

Analysis shows that Amtrak inter-city passenger rail service to the Chester Transportation Center is operationally feasible, but requiring the use of interlockings for trains to switch between inner and outer tracks to the north and south of the station. Assuming permissions could be negotiated with Amtrak, new train movements would increase the time required to operate those trains and would affect service for Amtrak, SEPTA, and all trains along the Northeast Corridor. It is difficult at this time to recommend Chester City Amtrak service given the need for expanded parking and whether Chester City is an interstate generator/attractor of sufficient strength to warrant Amtrak service.

As it currently stands and into the foreseeable future, visions for interstate rail service to the Chester Transportation Center and Chester City may be best realized through the enhancement and marketing of coach buses connecting the Philadelphia International Airport or 30<sup>th</sup> Street Station or King of Prussia Mall to specific destinations in Chester City. To that end, creating connections to the region via coach buses rather than rail transit would facilitate outside interest in Chester City and its emerging attractions. Private funding for these coach bus services may also be possible, reducing costs for the County.

Alternate analysis of the connections to Chester Transportation Center suggests that current SEPTA R2 service to Wilmington and express bus service along I-476 may best capture the natural flows of people to the CTC. The station is not a destination in itself, but a transfer point for access to the targeted destinations. Further enhancement of this transfer connection to employment locations, emerging recreation locations, and the airport may be better served through privately owned and operated coach buses or shuttles.

Interstate Amtrak service to Chester, though technically feasible, poses significant operational challenges including the issues with mixing train movements, the lack of station parking, and the lack of inter-regional 'destination appeal' in Chester City. While Harrah's Chester Casino and Racetrack and other city developments are major steps forward in Chester's revitalization, they do not justify providing Amtrak service at this time. New extra-regional attractions such as the proposed major league soccer facility could, however, change this equation in the future.

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## Amtrak Service at Chester Transportation Center Feasibility Study

**Publication No.:** # 09003

**Date Published:** June 2009

**Geographic Area Covered:** Chester City, Delaware County, Northeast Corridor

**Key Words:** SEPTA, Amtrak, Northeast Corridor, Chester City, Harrah's Chester Casino and Racetrack

**Abstract:** This study examines the feasibility of providing Amtrak service to the Chester Transportation Center. Elements of rail operations, parking, and interstate destination appeal were examined for issues impeding service, as well as enabling solutions. While the addition of Amtrak station service is technically feasible, Northeast Corridor traffic scheduling would be affected. Comparisons with other stations suggest that a limited interstate station stop may not generate many boards, especially in such close proximity to major Amtrak stations with full services. It was suggested that benefits would accrue through the provision of coach style buses providing direct service from established major interstate hubs such as 30<sup>th</sup> Street Station and the Philadelphia International Airport.

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