Newark Train Station Study
Final Report

WILMAPCO

PB PARSONS BRINCKERHOFF 125 YEARS

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Executive Summary

Introduction

At 272 acres, the Chrysler Assembly Plant represents one of the largest contiguous developable land parcels adjacent to a rail station on the entire Northeast Corridor (NEC). Close to residential neighborhoods and existing university facilities, the site is within walking distance of the downtown/historic district of the City of Newark. The University of Delaware plans to develop this parcel as a regional asset and include transit-oriented development to maximize opportunities for integrated transportation and pedestrian networks.

The goal of this feasibility study was to establish the physical and operational feasibility of redeveloping a passenger rail station at the Chrysler site on the west side of College Avenue. In order to be considered feasible, the station would need to meet the following objectives:

a. Create a Regional Rail Center consistent with the State of Delaware's transportation and economic development objectives
b. Resolve the existing operating conflicts between freight and commuter rail while expanding passenger services at the station
c. Enable expansion of passenger rail services including Amtrak, SEPTA, MARC, as well as future downstate intercity or commuter rail service
d. Preserve and create opportunities for expanding statewide rail freight operations.

The scope was limited to producing concepts with commuter service remaining at the existing location. This study was intended to develop the concept plan for a station at the Chrysler site that could be compared with the previous plans for a station relocated to the SR 72 site. This scope of the current study does not include a comparative evaluation of the two potential passenger station sites in the greater Newark area.

The study also considered alternative locations for an overnight storage yard for commuter rail trains in the Newark vicinity.

The Current Bottleneck at Newark Station

Norfolk Southern's (NS) Newark Yard plays a strategically important role supporting efficient freight deliveries to the region, including the Port of Wilmington and the Delmarva Peninsula. Tail tracks in the Newark Yard are available for NS access to the NEC at any time, but NS cannot work the east end of the yard while SEPTA trains occupy Track A at the station; furthermore, Amtrak limits freight service to only the overnight hours. This freight-commuter conflict prevents freight from operating at Newark and on the Delmarva Branch independent of passenger operations at Newark.

Potential Future Conditions

The Northeast Corridor Infrastructure Master Plan provides a context for future growth throughout the NEC. Growth in all passenger services is anticipated throughout the corridor, including Delaware, and reflects both Amtrak and commuter projections. In the case of passenger service at Newark, the vision is to link the MARC and SEPTA-operated commuter services that heretofore have not offered connections to each other. This plan entails filling the 20-mile gap in commuter service that currently exists between Perryville, MD and Newark, DE.

Throughout the study, NS stressed the importance of the Newark Yard and its future use for staging of service to/from Port of Wilmington and Delmarva Peninsula. As the railroad grows its market share in the region, it will continue to rely on the facility to serve as the primary yard for the Delmarva Business Unit operations.

Preferred Solution

A series of improvements was investigated that would preserve and enhance the passenger and freight rail operations in this area as well as would facilitate and enhance the University's plans for the site. Throughout the process, the study advisory group recommended that the improvements be grouped such that they could be implemented in phases.

Of primary interest, a viable solution was developed that provides separation of freight and passenger train movements via a new dedicated freight track (Track F) between NS' Newark Yard and Davis interlocking. This fifth track would be for dedicated use by NS and would relieve the existing bottleneck at the north end of Newark Yard.

The proposed station location is located approximately 1,000 feet west of the current commuter rail platform. In a location sited to serve development at the former Chrysler site, it provides convenient car, bicycle and pedestrian access from College Avenue. It also allows for flexibility to accommodate various combinations of current and future potential rail service (e.g., SEPTA, Amtrak, MARC).

The third requirement of the study was to investigate potential locations for overnight storage of commuter rail trainsets to support the Newark terminus for the SEPTA Wilmington Newark line, the MARC Penn line, or both. The intent of utilizing a commuter yard in the Newark area is to support planned growth in SEPTA and MARC traffic as well as reduce costs for non-revenue ("deadhead") mileage. Of the three locations identified, the preferred location for consideration by the study stakeholders was at Davis Wye.

Capital Cost Estimate

An estimate of the capital costs associated with these improvements was prepared, based on cost factors for comparable projects elsewhere. Costs were estimated for five primary elements of work:

1. Passenger station
2. Station parking and access
3. Main line rail infrastructure to support station
4. Rail freight track improvements
5. New commuter rail storage yard

Order-of-magnitude costs were developed and include contingencies and allowances for engineering design, construction management, and program administration. The following table summarizes these costs by phase, in 2010 million dollars.

Estimated Capital Costs

	Phase 1	Phase 2	TOTAL
Newark Station	$20.3	$15.2	$35.5
Station Parking & Access (optional)	$8.2 500 surface spaces	$25.4 500 structured spaces	$33.6
Main Line Rail Infrastructure*	$50.2	$8.9	$59.1
Freight Rail Infrastructure**	$16.3	TBD	TBD
Commuter Yard***	--	$20.5	$20.5
TOTAL	$95.0	$69.9	$164.9

** Includes new station tracks, Track A upgrade and interlocking improvements at Otts, Newark and Davis.*
*** Includes new Track F between Otts and Davis; track configuration within Newark Yard to be determined.*
**** Commuter Yard Option 1, Davis Wye site.*

Next Steps

At the suggestion of the study advisory group, it was recommended that a lower-cost initial implementation be developed, with a reduced scope. A potential preliminary phase was proposed that would allow for:

- Track 'F' providing freight-passenger separation
- Short island platform serving Tracks 1 and A, with pedestrian underpass to existing parking lot
- Expanded SEPTA service to Newark
- Extended MARC service and station upgrades to meet Amtrak intercity passenger needs

The initial capital cost for this reduced-scope option is approximately $30M, however it is recommended that preliminary engineering investigations take place to resolve technical issues and obtain a refined capital cost estimate. It is also recommended that the outcomes of these engineering activities be incorporated with any refinements to the Chrysler Site Plan as well as a station area TOD plan. Public involvement will also need to be considered as part of the station site selection process. These efforts should also be coordinated with the Downstate Intercity Rail Study and any additional efforts that would help solidify the Newark Station site selection decision and result in a final memorandum of understanding among the project's stakeholders.

Chapter 1 – Existing Conditions

1.1 Introduction and Background

The Newark Train Station is located along the Northeast Corridor (NEC) in the City of Newark, Delaware, just west of South College Avenue/SR 896. Auto access is from South College Avenue via a signalized intersection, with a 285-space parking lot, a ticket sales booth, and a DART bus stop. The station currently functions as a single-track operation, with trains serving at low-level platform and laying over on Track A of the NEC. This configuration limits the station to accommodating only one train at a time. It also creates a conflict with freight access to the Delmarva Secondary Rail Line, which is accessed via Track A and is the primary entry point for all rail movement to the Delmarva Peninsula.

In 2004, DelDOT completed a study to expand passenger rail service to the Newark Train Station and eliminate the conflict with freight movement. It was found that there was no room on the current site for expansion of services, and no room to expand off-site due to the adjacent Chrysler Assembly Plant to the west, and the University of Delaware's agricultural complex to the east. The result of the study was the selection of a new location for the Newark Train Station, one mile to the east, after the wye to the Delmarva Secondary, at the location of a concrete plant. Access to this station location would be from SR 72/Library Avenue.

In January 2009, the Chrysler Assembly Plant ceased operations in Newark, and the site became available for purchase. The University of Delaware (UD) signed a purchase agreement for the site in October 2009 and has prepared a series of development strategies for a new academic and technical campus. Part of this plan includes Transit-Oriented Development (TOD) and land has been set aside in these concepts to provide for the expansion of the train station at the current site. In conjunction with this plan, the City of Newark has given its support to UD's plan and renewed its request to expand the train station at the current site.

An ad-hoc working group was formed with representation from DelDOT, University of Delaware, the City of Newark, New Castle County, the Delaware Economic Development Office, Norfolk Southern, and WILMAPCO. This group met with representatives from the offices of U.S. Senators Thomas Carper and Ted Kaufman, and U.S. Representative Mike Castle to discuss this issue and find a solution. The result of these meetings is the commissioning of this feasibility study. The timing of this study is opportune, given the University of Delaware's plans and intent to begin developing the Chrysler site. This study represents the first step needed to preserve and enhance passenger and freight rail in this area.

The goal of this feasibility study was to establish the physical and operational feasibility of redeveloping a passenger rail station at the Chrysler site on the west side of College Avenue. In order to be considered feasible, the station would need to meet the following objectives:

a. Create a Regional Rail Center consistent with the State of Delaware's transportation and economic development objectives
b. Resolve the existing operating conflicts between freight and commuter rail while expanding passenger services at the station
c. Enable expansion of passenger rail services including Amtrak, SEPTA, MARC, as well as future downstate intercity or commuter rail service
d. Preserve and create opportunities for expanding statewide rail freight operations.

The scope was limited to producing concepts with commuter service remaining at the existing location. This study was intended to develop the concept plan for a station at the Chrysler site that could be compared with the previous plans for a station relocated to the SR 72 site. This scope of the current study does not include a comparative evaluation of the two potential passenger station sites in the greater Newark area.

The study also considered alternative locations for an overnight storage yard for commuter rail trains in the Newark vicinity.

1.2 Existing Site Conditions

The Newark, Delaware train station is located 47 miles south of Philadelphia and 105 miles north of Washington DC on Amtrak's Northeast Corridor (NEC) rail line. The study area for this project encompasses the existing Newark Train Station and the land immediately adjacent to it as well as a portion of the Amtrak NEC in this area.

At 272 acres, the Chrysler site represents one of the largest contiguous developable land parcels adjacent to a rail station on the entire NEC. Close to residential neighborhoods and existing university facilities, the site is within walking distance of the downtown/historic district of the City of Newark. The site is also adjacent to existing pedestrian and bicycling links, including sidewalks along College Avenue (for pedestrian/bike access over the railroad) and the City of Newark's paved James F. Hall trail located along the north side of the rail right-of-way. Norfolk Southern's Newark Yard is also adjacent to the Chrysler site.

Figure 1. Aerial Image of the Current Newark Train Station

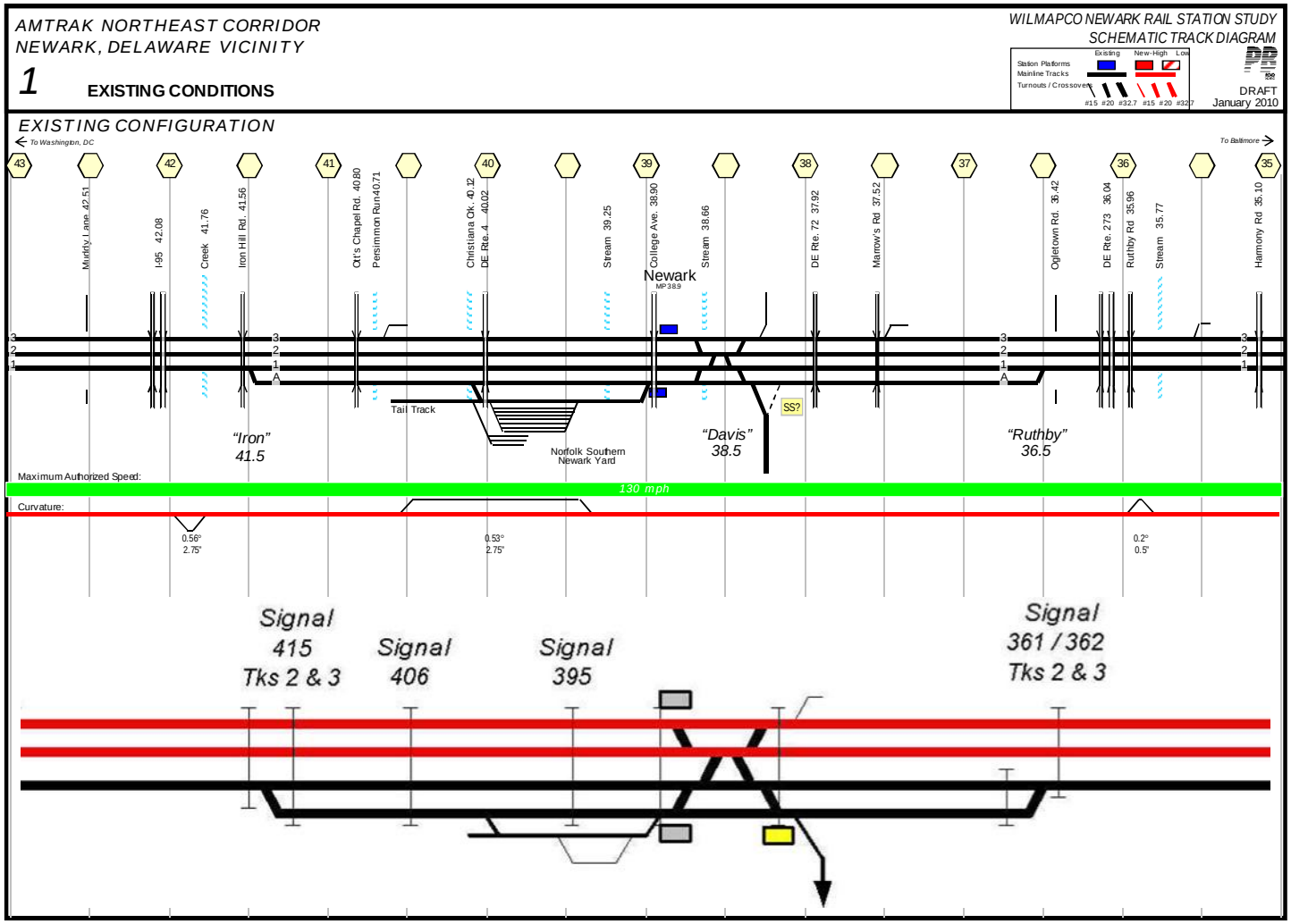
1.3 Existing Railroad Configuration

The railroad at the station site has four main line tracks; these are labeled Tracks A, 1, 2, and 3 from south to north. These four tracks are located between MP[1] 38.5 and MP 39.5 on the NEC. This is a short five-mile stretch of four-track railroad between Iron Hill Road (near the Maryland state line) and Ruthby Road (east of Newark). On either side of this four-track segment, the NEC has three main tracks.

Figure 2 below shows the general configuration of tracks along the NEC in this territory.

[1] Mile Post

Figure 2. Schematic Track Diagram for Newark, DE



The Newark train station is located at MP 38.9. Low-level side platforms are provided on the outside tracks (Tracks 3 and A). The Track A platform is approximately 310 feet long, sufficient for handling trains of up to three car lengths. SEPTA commuter trains use only the Track A platform, which is directly connected to the station parking lot by a passenger walkway. The Track A platform has a mini-high platform for level boarding of mobility-impaired passengers and DTC operates a ticket office adjacent to the passenger walkway for Track A.

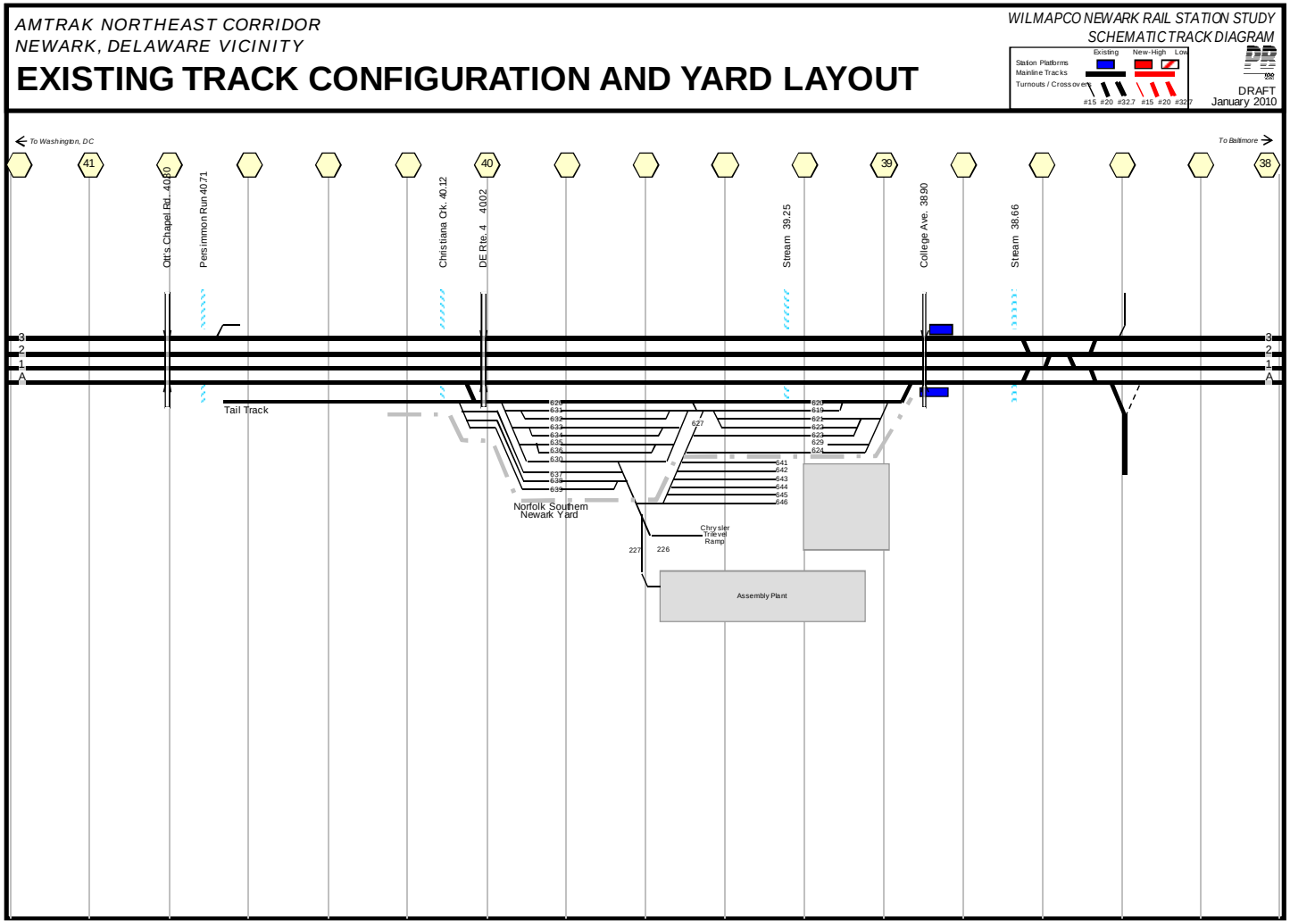
A limited number of Amtrak Regional trains also stop at the station. Southbound trains use the Track 3 platform. Northbound stopping trains generally use Track 1, and passengers typically walk across Track A to get between the Track A platform and the trains stopped on Track 1.

The original Newark Train Station building is located alongside the Track 3 platform and owned by the City of Newark. It is not currently available for passenger use. Amtrak does not provide any station staff or passenger amenities at the Newark Station.

Tracks 1, 2 and 3 are capable of 150+ mph operations while the existing speed limit is 130 mph. Track A, which is used predominantly by Norfolk Southern, has a lower speed limit. Track A and the associated traction power and signaling systems have been upgraded to the east of Newark Station to support SEPTA commuter service. Track A to the west of the Newark station would require upgrading in order to be usable for regular passenger service.

Figure 3 presents a schematic representation of the main line, branch line and yard tracks in the Newark area, including the Norfolk Southern Newark Yard and the track connections at Davis Interlocking to and from the NS Delmarva Secondary.

Figure 3. Schematic Diagram of Passenger and Freight Trackage in Vicinity of Newark, DE



1.4 Current Train Operations

Currently, train service through the Newark Train Station operates on four tracks on Amtrak's NEC. Tracks A and 1 are used by Norfolk Southern freight trains, which use the Northeast Corridor to travel between their Newark Yard and Harrisburg, PA, and also to access the Port of Baltimore. Per Amtrak regulations, freight service is constrained to operating between 10 p.m. and 6 a.m. on the two-track section of the NEC between Perryville and Northeast, Maryland (Bacon Interlocking). This also affects freight movement at the Newark Yard.

Track A is also used by SEPTA during the a.m. and p.m. peak periods for commuter service to Philadelphia, with 17 trains serving the Newark station each weekday. Tracks 1, 2, and 3 are used by Amtrak. Amtrak's high-speed Acela trains operate on Tracks 2 and 3 (northbound and southbound, respectively). Most Amtrak regional and long-distance trains also use Tracks 2 and 3. Northbound Amtrak Regional trains stopping at Newark generally use either Track 1 or Track 2. Track 1 sometimes is also used by Amtrak long-distance trains when they need to be passed or "overtaken" by faster Acela Express or Regional trains.

Amtrak operates on average two northbound Amtrak Acela and Northeast Regional trains per hour, with one Northeast Regional train in each direction stopping at Newark each weekday. Two Northeast Regional trains per day in each direction stop at Newark on weekends. In addition, Amtrak operates six northbound and six southbound long distance trains per day that do not stop at the Newark station.

SEPTA operates nine commuter train round trips on the Wilmington Newark[2] service between Newark and Philadelphia on weekdays. SEPTA trains use the Track A platform at Newark Station as the layover point for southbound trains that arrive at the station from Wilmington and Philadelphia and turn for subsequent departing northbound trains.

The Track A platform is utilized by both Amtrak (for northbound service) and SEPTA, as its Wilmington Newark terminus. DTC has constructed a station agent booth, bike racks, bus shelter and parking at this location, but there are no other amenities. SEPTA trains heading southbound towards Newark from Wilmington and Philadelphia must cross over Track A in the face of northbound traffic, a maneuver that currently can be made with little interference, but which slows down the approach to Newark.

Maryland MTA currently provides rail commuter service between points in Maryland and Washington, DC under the MARC brand name. MARC does not currently serve the Newark Station, but there are plans in the MARC Growth and Investment Plan (2007) to extend service peak service north from Perryville with a new station at Elkton, MD and track improvements to Newark by 2015.

[2] Starting July 2010, SEPTA will refer to the R2 service as Wilmington Newark trains

1.5 The Current Railroad Bottleneck Condition at Newark Station

Norfolk Southern's (NS) Newark Yard plays a strategically important role supporting efficient freight deliveries to the region, including the Port of Wilmington and the Delmarva Peninsula. The yard is vital to freight operations because of its strategic location: it is here where the NEC intersects with the Delmarva Secondary, the primary freight route. The facility's function is to support operations for the NS Delmarva Business Unit. Train crews operating out of Newark Yard serve a number of important industries in the New Castle County region including the Port of Wilmington, and the growing Auto Port facility. NS plans to expand operations as traffic grows in this area.

Tail tracks in the Newark Yard (see figure 3) are available for NS access to the NEC at any time, but NS cannot work the east end of the yard while SEPTA trains occupy Track A at the station; furthermore, Amtrak limits freight service to only the overnight hours. This freight-commuter conflict prevents freight from operating at Newark and on the Delmarva Branch independent of passenger operations at Newark.
In an attempt to recommend solutions to this conflict, in 2004, DTC prepared a report on expansion of train service to Newark. One of the options was analysis of a "No Build" scenario, and it resulted in the plan for the proposed relocation of the Newark Station. A No Build concept would not accommodate separation of passenger and freight operations, nor would it allow an increase in passenger rail services, including SEPTA, MARC or Downstate Rail. The report also produced a plan to relocate the commuter train station from its current site on SR 896/S College Avenue to the site of the Newark Concrete Plant along SR 72/Library Avenue.

For purposes of this study, No Build is not considered a viable option – because of the serious existing conflict between SEPTA and rail freight operations at the north end of Newark Yard. To be considered feasible, any concept plan for a redeveloped passenger station at College Avenue or the Chrysler site needs to provide for separate passenger and freight access at this location.

1.6 Current Rail Passenger Operations at Newark

With 7,883 boardings/alightings in FY08, Newark is one of Amtrak's lowest-volume stations on the NEC. There are no station facilities, amenities, train information or ticket vending machines for Amtrak passengers at this location and the station is unstaffed by Amtrak. Passengers use sidewalks on the College Avenue bridge to access either platform.

SEPTA's ridership at Newark continues to grow, with 162,868 boardings/alightings in FY08, which averages out to 638 riders per day. DTC provides a station agent at Newark, who sells SEPTA tickets and provides train information on weekdays between the hours of 6 a.m. and 10 a.m. Amenities at the existing Newark Train Station include a guard/ticketing structure, uniformed security during service hours, lavatory for train crews, a bus shelter in the parking lot, shelter on the train platform, and a stairway to the College Avenue overpass. Currently, all passengers walk directly between the parking

lot and the platform. This is convenient, but will be difficult to sustain as traffic grows and if service is extended.

Wheelchair accessibility is provided to Track A via a mini-high block platform. For Amtrak southbound travel, the station is currently not ADA accessible. As indicated in the February 2009 Amtrak Report on Accessibility and Compliance with ADA, it is required that new ADA compliant high level platforms and an expanded parking lot be constructed by 2015.

Connecting bus service is provided by DART First State routes 16, 33, 39, 55, 65 and an express bus service, route 59, connects at Newark to the Wilmington Train Station with one mid-day trip in each direction. Taxis generally do not congregate at the station, but several companies in the area provide on-call service. A 285-space free-parking surface lot serves the station and, as of 2009, an average of 249 spaces were used on a daily basis.

Chapter 2 – Potential Future Conditions

2.1 Passenger Rail Service

The Northeast Corridor Infrastructure Master Plan (final document to be released Spring 2010) provides a context for future growth throughout the NEC. Prepared by a working group, including representatives from the State of Delaware, Norfolk Southern, Amtrak and SEPTA, this plan defines a vision for the future of rail transportation in the Northeast. Growth in all passenger services is anticipated throughout the corridor, including Delaware and reflects both Amtrak and commuter projections. With a future that includes more trains and more passengers, the potential to introduce new or expanded types of passenger rail service reflects the efficiency of rail transportation and its potential to facilitate sustainable economic growth.

In the case of passenger service at Newark, the vision is to link the MARC and SEPTA-operated commuter services that heretofore have not offered connections to each other. This plan entails filling the 20-mile gap in commuter service that currently exists between Perryville, MD and Newark, DE.

a. Intercity

Currently, there is relatively low demand for Amtrak Regional intercity service, but this may change as development at the Chrysler site occurs, as connecting commuter services are provided, and as traffic congestion worsens in the region.

To preserve future options for future high-speed service through the Newark station area, the alignments of Tracks 1, 2, and 3 should be capable of 150+ mph operations, noting that the current existing speed limit is 130 mph through the area. This precludes the introduction of horizontal curves on these main tracks, which are tangent, or straight, through the station area. Track A is expected to be used only by trains that stop at the

station, so realignment of this track to accommodate an island platform at Newark between Tracks A and 1 would be feasible.

Maintaining Track 1 as a high-speed track is important, since Track 1 is used on occasion by Amtrak non-stop trains, particularly long distance trains that are being overtaken by faster Acela Express or Regional trains operating on Track 2 or 3. Also, Track 1 could become the future northbound high-speed track, if future operations call for high-speed trains on the inside tracks (1 and 2) and commuter/stopping trains on the outside tracks (3 and A).

Newark Station also could be served by a potential Downstate intercity rail service that would operate via the Northeast Corridor and over the NS Delmarva Secondary via Dover to a station in the vicinity of Ocean City, MD. Such a service could draw from both the Philadelphia and Baltimore/Washington markets. This project is the subject of an upcoming study that is funded under the Federal High Speed Intercity Passenger Rail Program (HSIPR).

b. Commuter – Wilmington and Philadelphia

Philadelphia and Wilmington-oriented train service to Newark is currently provided by SEPTA and focused on weekday peak periods, with a total of 18 trains (17 in revenue service) serving Newark each weekday, with an express bus connection from the Wilmington Train station provided mid-day.

DTC's and SEPTA's input into the NEC Master Plan calls for an additional ten trains (for a total of 28 daily trains) to serve Newark by 2030. In the future, this service could continue to terminate at Newark, or this service could be extended southward into Maryland (e.g., Elkton or Perryville). In either scenario, there is a desire to store trains overnight at the southern terminus of the route so that train miles are not incurred on a train that is not collecting revenues (i.e., running deadhead) on its first trip to Newark in the AM as it currently operates.

For commuter and regional rail, the Newark station should have the ability to function as a terminal, or end-of-line station for SEPTA, MARC or both operators. The platform configuration should provide the passenger operators with the ability to serve run-through trains in both directions in addition to terminating (turning) trains. The configuration should be able to handle potential future 30 minute peak headways and 60 minute off-peak headways for both SEPTA and MARC. Similar to the potential Dover intercity rail service, the platform configuration at Newark would provide the ability to accommodate future potential Dover commuter rail service, either as a terminal/transfer station or an intermediate station for service running through to Wilmington.

c. Commuter—Baltimore and Washington

MARC service currently terminates in Perryville, 20 miles southwest of Newark. As indicated in the 2007 MARC Growth and Investment Plan, Maryland MTA intends to

extend MARC service north from Perryville to a new station at Elkton, MD by 2015. This project also would require track improvements at Newark.

The Base Realignment and Closure (BRAC), led by the US Department of Defense, designates the Aberdeen Proving Ground (APG) in Harford County, MD, as one of 20 BRAC growth communities in the US. By September 25, 2011 this facility is expected to be fully operational and relocations are already taking place in the area, with the City of Baltimore, Baltimore, Harford, and Cecil Counties in MD, New Castle County and even counties in southern Pennsylvania (Chester, Lancaster and York) planning for growth as part of the potential commutershed to APG. Maryland MTA has been working to recommend transportation improvements to serve APG, and given its relative proximity to the NEC, there are opportunities to use the Aberdeen train station as the focal point of an economic development cluster. Additional commuter and intercity service at Newark oriented southbound will afford the Newark Station to serve as an origin for commuters destined for APG.

d. Regional Service

There is potential for additional limited stop regional commuter service between Wilmington or Philadelphia and Baltimore/Washington. This type of service would provide a higher-quality service at the major commuter stations, including Newark. A similar service was operated in the past by Amtrak as the *Chesapeake*. Maryland MTA has developed a concept for a limited-stop regional express service, referred to as the *Chesapeake* and *Potomac Express*, and introduction of this type of service would be one possible way to blend MARC and SEPTA services. This service could be operated by Amtrak or as a shared operation sponsored by the states of Maryland, Delaware and Pennsylvania.

e. Downstate Commuter Rail

There has been strong interest to pursue passenger rail service downstate, and the most recent study, completed in 2002 concluded that based on projected demand commuter rail is not warranted in the near term.

However, as previously mentioned, DelDOT was recently awarded a federal HSIPR grant for the Downstate Passenger Rail Program. This program would connect the City of Wilmington with the City of Dover and the resort areas south of Dover, providing intercity passenger rail service and reducing vehicle miles traveled on the road network. The focus of the passenger service in this project extends beyond Dover to Berlin, MD, and subsequently the Delaware and Maryland beach resort areas.

Regardless of the timing or frequency of this potential future service, the station at Newark should accommodate and not preclude a Downstate rail service.

2.2 Rail Freight

Throughout the study, NS stressed the importance of the Newark Yard and its future use for staging of service to/from Port of Wilmington and Delmarva Peninsula. As the railroad grows its market share in the region, it will continue to rely on the facility to serve as the primary yard for the Delmarva Business Unit operations. The staging function at Newark Yard is critical due to limitations on use of the NEC by NS, and the fact that all NS freight traffic to and from Delaware must utilize the NEC.

The study looked at alternative locations for a rail freight yard in the vicinity of Newark with sufficient track length and land area, but there were no viable options. Therefore, the Newark Yard site must be preserved for rail freight use. However, given that the existing yard track configuration was developed to primarily support the auto assembly plant, some reconfiguration makes sense to support the changed future mission for the yard.

2.3 New Castle County and City of Newark Growth Plans

The concept plan developed in this study is aligned with both the New Castle County Comprehensive Development Plan (2007) and the City of Newark Comprehensive Plan (2008). However, in both plans, the closing of the Chrysler Plant was only pending, and had not been finalized.

The concept for the Newark Train Station as proposed in this study directly relates to two of the objectives included in the New Castle County Comprehensive Development Plan: [3]

- Objective 2: Guide new development to Northern New Castle County to achieve greater use of existing infrastructure and public resources

- Objective 5: Support infill and growth in the Existing Community Areas that is consistent with the surrounding character and existing zoning

Further, the plan states, "with over 97% of the employment opportunities and over 91% of the existing population located in Northern New Castle County, the existing infrastructure is extensive and higher densities along transit corridors are encouraged. Infill development is encouraged in the main population centers with the placement and design of such development ideally reflecting consideration for the context of the area."[4]

The City of Newark's Comprehensive plan contains a discussion on the "Chrysler Opportunity Site," citing that the City of Newark will play a lead role in any possible redevelopment of this site. This plan recommends a series of land uses for the site, in addition to the continuation of current uses as an auto assembly plant. The plan

[3] New Castle County Comprehensive Plan: http://www2.nccde.org/landuse/Planning/ComprehensivePlan/default.aspx
[4] Ibid.

highlights the unique opportunity presented by the future redevelopment of the property and presents a series of recommendations based on the following factors:[5]

- The site's size and central location
- The potential for new high paying and high quality employment
- The potential for the site as a center of excellence for emerging and growing 21st century industries
- The potential for the expansion of the City's tax and utility customer base
- The close proximity to a full range of land use types
- The continued redevelopment of Newark as a prime location to live and work.

Any development on this site would be subject to the City's rezoning and development review process, as well as rigorous federal, state, and local environmental reviews. The plan encourages a mixed use project for "hi-tech research, development and educational facilities…[using] neo-traditional planning specifications, including residential and commercial uses."[6] It should be noted that acquisition of the site by the University of Delaware might remove the parcels from City tax rolls, depending on the use involved. The plan further states that the site could be a "show-case for a state of the art, sustainable mixed use community of one kind or another, depending upon how creative and progressive Newark's businesses, institutions, and residents chose to be."[7]

Per the City's Plan, the following uses are recommended:[8]

- Manufacturing office/research
- Single-family residential (low to medium density)
- Multi-family residential
- Offices
- Light commercial (local shopping)
- Auto-oriented commercial
- Stream valley and parkland.

[5] City of Newark Comprehensive Plan: http://cityofnewarkde.us/DocumentView.aspx?DID=770&bcsi_scan_466F0C48B84B72D2=6qbS5O+TdPnxOQ+gAedG5RQAAAAwVmgp&bcsi_scan_filename=DocumentView.asp
[6] Ibid.
[7] Ibid.
[8] Ibid.

2.4 Chrysler Site Development

As per the Site Development Strategies for the Chrysler Study proposed by the University in June 2009, a series of planning principles guided this effort:

- Community engagement
- Campus connectivity
- Campus experience
- Sustainable growth
- Campus architecture and capacity

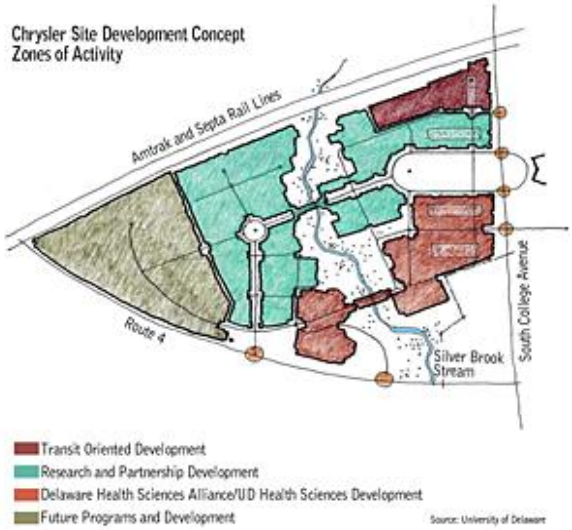
This site represents one of the largest contiguous developable land parcels adjacent to a rail station on the entire NEC. Key in this development effort is an integrated transportation system that incorporates transit-oriented development, rail systems, as well as integrated operations with existing transit and intercity rail services. With a phased approach to development, the plans include opportunities for reuse of existing buildings on the site and maximize opportunities for integrated transportation and pedestrian networks. For both options presented, train and site support are located in the northeast corner of the Chrysler site. Both concepts anticipate increased commuter rail demand (including extended MARC service), and assume that 15% of the workforce at the site will use rail. Transit-oriented development would be slated for Phase 2 of the project, with a 300,000 s.f. mixed use facility that will include:[9]

- 1,000 space parking structure
- 200,000 – 225,000 s.f. of residential development totaling 250 units that will house approximately 500 residents
- 60,000 s.f. of retail and commercial development

Figure 4 below shows the general zones of activity that are proposed for the site.

[9] University of Delaware Chrysler Study Development Strategies, June 25, 2009

Figure 4. Potential Chrysler Site Development Plan with Relocated Newark Rail Station



2.5 Newark Station – Existing Facilities are Inadequate to Meet Future Needs

In the future, as traffic grows and the University advances its plans for development of the Chrysler site, the station will need to be relocated in the same vicinity to better allow for NS operations at Newark Yard, as well as better provide SEPTA, Amtrak and potential future MARC service. While the future ridership is not yet known, a logical step is to plan for substantial growth.

The existing platforms at Newark Station do not meet Amtrak standards for passenger stations on the Northeast Corridor main line, although it has been marginally acceptable for the SEPTA and Amtrak service currently operating at the station. A new station will also reflect modern standards, provide better access for passengers to platforms, and meet the accessibility requirements of the Americans with Disabilities Act (ADA).

With respect to parking, the plan should initially provide a surface lot with additional parking capacity over and above the current quantity of available parking (currently at 285 spaces). Long-range future plans should allow for construction of a multi-level parking garage, integrated with TOD development at the station site, permitting expanded parking capacity for commuter and intercity passengers without sacrificing station-area development potential.

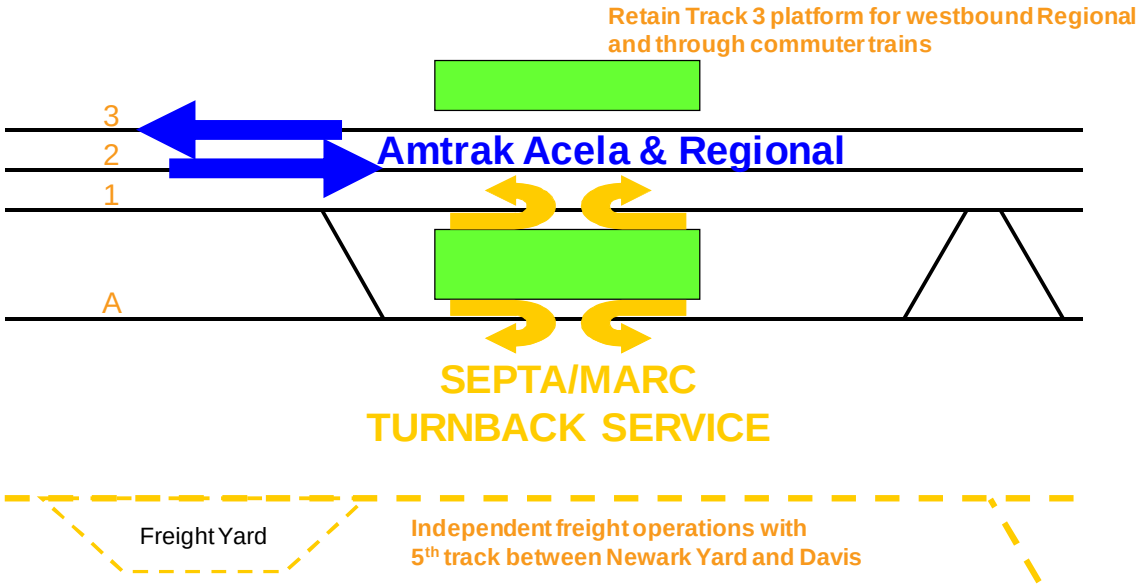
Chapter 3 – Preferred Railroad Configuration

3.1 Overall NEC Configuration

There are several potential operating scenarios for SEPTA and MARC that the study considered for Newark Station:

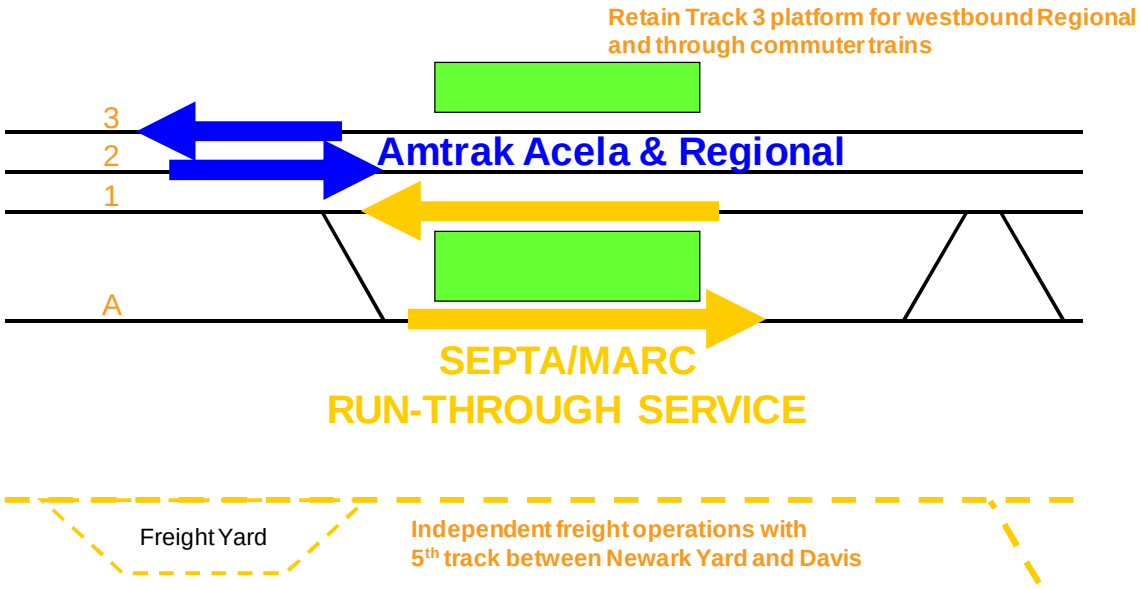
- SEPTA/MARC turnback service at an island platform between Tracks 1 and A
- MARC – End of Line terminal or extended (e.g., Wilmington)
- SEPTA – End of Line terminal or extended (e.g., Elkton)
- Regional run-through rail service (e.g., Philadelphia-Washington)

Figure 5. Initial Phase SEPTA/MARC Turnback



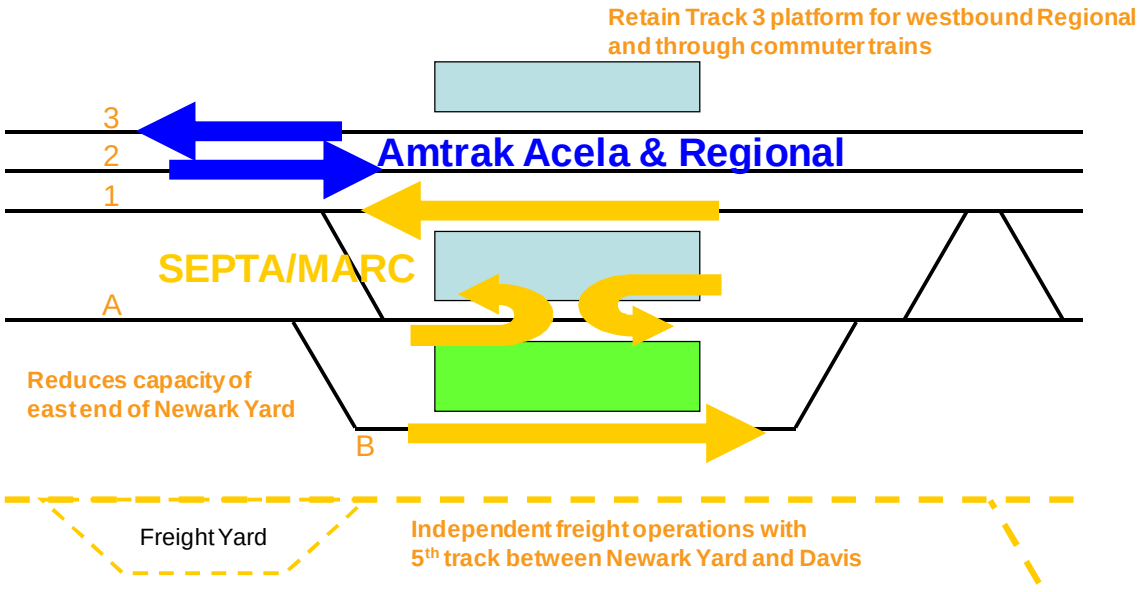
Alternatively, if Newark is not the end of the line for commuter service for either MARC or SEPTA, the same platform layout could be used for SEPTA/MARC run-through service potentially terminating at Elkton (or points south) or Wilmington.

Figure 6. Initial Phase – SEPTA/MARC Run-Through Service



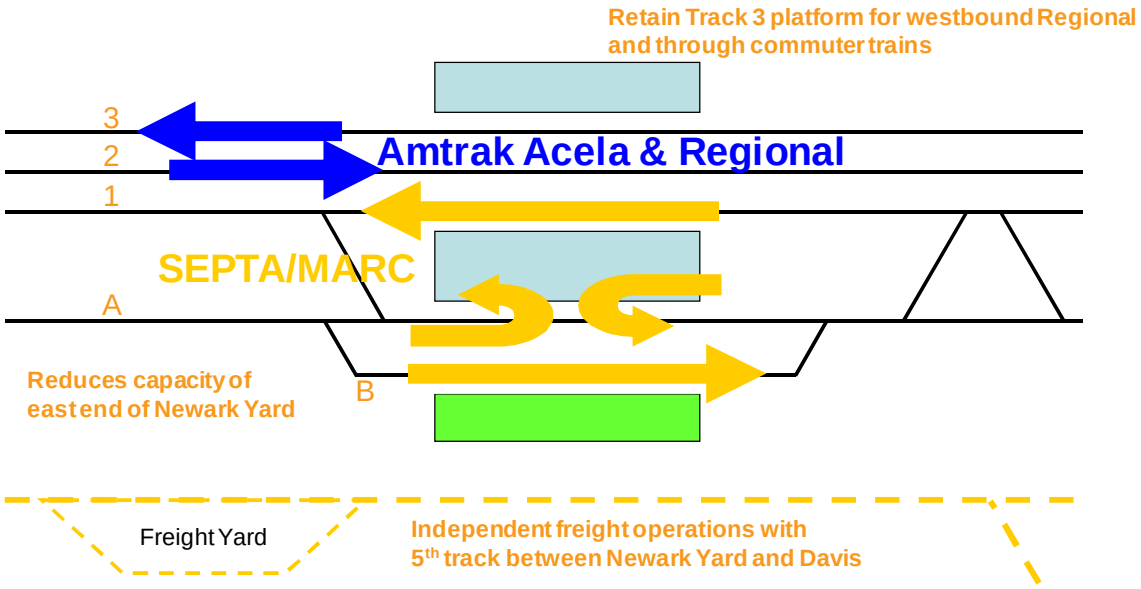
For a full build of Option 1, including Track B and an island platform, operations could be similarly configured such that MARC and SEPTA could turn back at the station, or one operator could turn back and the other run through, as shown in the diagram below.

Figure 7. Full Build Option 1, Double Island Platforms



Alternatively, a full-build Option 2 was considered with a side platform at Track B, but this option was not further investigated, as it reduces the capacity of the east end of the Newark Yard. This diagram is shown below.

Figure 8. Full Build Option 2, Island and Side Platforms



3.2 Rail Freight Connections (Track F)

Track F is an integral part of the initial phase of development and would be constructed as a freight runner track between Davis Interlocking through the end of the NS Newark Yard. This track would serve as a fifth main track and would be dedicated for the exclusive use of freight trains – thereby allowing for independent freight and passenger operations through the Newark Station area and providing a dedicated track connection for NS between the Newark Yard and the Delmarva Secondary at Davis Interlocking.

Through field verification it was determined that Track F could successfully be located in-between the piers of the College Avenue bridge. Some civil and structural work would be needed, including excavation, construction of crash walls, reconstruction of a portion of the existing pedestrian bridge, and potential modifications to the roadway bridge. Between College Avenue and the Delmarva junction at Davis, Track F would be positioned on Amtrak-owned property in between the existing catenary poles and the electric utility lines that are positioned near the southern edge of the railroad property. The pathway that provides access for Amtrak maintenance-of-way vehicles would be relocated to a slot between the two existing utility pole lines, allowing for continued access to the right-of-way for Amtrak maintenance forces.

The proposed Track F construction would not require any incursion into the existing agricultural fields on the south side of the utility pole line, which are owned by the University of Delaware. A new right-of-way fence would be constructed along the north side of the high-tension pole line.

At Davis, the existing wye track connection to the Delmarva Secondary would be realigned to tie directly into Track F. Crossovers between Track F and Track A in both

directions would provide for access among Track F, the Delmarva Secondary and the NEC main line tracks.

Figure 9. Proposed Track F Location

Modifications to the existing NS Newark Yard would be required to construct the new passenger station and to provide the Track F route. In reconfiguring the rail yard, a minimum of three yard tracks would be provided for the full length of the yard, as well as additional yard tracks in the western portion of the yard. Vehicular access would be maintained along the south edge of the yard. A landscape buffer could be created along the southern edge of the rail yard. This buffer would serve two purposes. It would provide screening between the proposed development at the Chrysler site and the freight yard activity. It also would provide land that could be used in the future for expansion of the rail yard, should future demand for rail freight in Delaware and requirements for servicing that freight at Newark grow beyond the levels currently projected. The actual yard capacity and configuration will be determined as a result of future studies, which also will determine the most appropriate location for the property line between the development site and the railroad yard.

There are multiple operational benefits of this proposed rail freight track and yard reconfiguration. Of utmost interest to Norfolk Southern, the proposed track and platform configurations would provide full separation of freight and passenger operations at Newark. Access would be provided to NEC Tracks 1 and A from Track F at both ends of the yard. The new Track F would provide unimpeded access to the Delmarva Secondary, and NS would have universal access to all NEC tracks at Iron and Ruthby. Finally, a wide clearance route through the Newark Station area would be provided via Track F, with a second wide-clearance route available via main line Track 2.

3.3 Station Location

In the preferred railroad configuration, the station would be located in the northeast corner of the Chrysler site, consistent with the current station location as well as the area indicated for train and site support on the University's Development Strategies Plan. The exact location of the station building is dependent on the final location of the platforms, as well as the best location for the pedestrian overpass/tunnel. The locations for these facilities would be determined in a subsequent effort, along with conversations with the University on the overall station design and station area development plan that is envisioned.

As stated in the University's Development Strategies, a 1,000 space parking structure is planned for full build-out of the site. In the initial phases, a combination of both structured and surface parking is to be provided to accommodate 500 vehicles with the flexibility to increase to 800 vehicles in the future. The parking area should have passenger pick-up and drop-off areas. Facilities for bus and paratransit service should be provided that separate bus and auto movements, and that will minimize off-route time for buses.

3.4 Station Track and Platform Configuration

A phased approach is proposed for implementation of the preferred railroad configuration with initial phase and full built-out plans described in this report. The initial phase would include 800 foot-long island and side platforms. An island platform between Tracks 1 and A would accommodate SEPTA and potential MARC trains operating to Newark as a terminal station or running through the station. Tracks A and 1 would be used primarily by commuter trains, while Tracks 2 and 3 would continue to be the high-speed main tracks for Amtrak non-stop trains. The island platform also would be used by northbound stopping Amtrak trains. A side platform on Track 3 of 800 feet would accommodate southbound stopping Amtrak trains or southbound commuter trains running through from Wilmington towards Baltimore. Passengers would access both of these platforms via a pedestrian bridge or tunnel. In subsequent phases, these two platforms could be extended to 1,000 feet long, in order to accommodate longer train lengths.

In the full build configuration, a Track B would be constructed in-between Tracks A and F, and a second island platform would be constructed between Tracks A and B. This second island platform would be a maximum of 885 feet long. Its length is limited by the location of the College Avenue bridge on the east and the existing main line curve to the west.

3.5 Passenger Train Storage Yard

A requirement of the study was to investigate potential locations for overnight storage of commuter rail trainsets to support the Newark terminus for the SEPTA Wilmington Newark line, the MARC Penn line or both. The objectives for utilizing a commuter yard at Newark include:

- Reduce current Amtrak deadhead charges (for trains operating without passengers going to or from remotely-located storage yards and the beginning or end of their runs)
- Provide adequate storage to support planned service growth
- Consolidate facilities for efficient inspection and minor maintenance
- Allow convenient access from the Newark Station tracks
- Avoid conflicts with NEC main line or freight train movements
- Minimize initial investment, in light of future options that do not include Newark as a terminus.

Three location options in the Newark vicinity were identified and presented for consideration by the study stakeholders:

- Davis Wye
- Delmarva Secondary
- Newark Yard (north end or south end)

Based on stakeholder feedback, the Davis Wye was selected as the preferred location for the commuter yard. Though it has limited expansion potential given the east/north leg of the wye that would need to be constructed, it provides universal access to all station tracks and NEC main tracks. Operating at the Davis Wye would be a reverse move for SEPTA and a through move for MARC. Use of the Davis Wye for a commuter yard would require use of a portion of the cement plan that is currently located there, but it is anticipated that the plant can still be accommodated in the same parcel which it resides. This would require the shifting of its buildings, storage piles and access road. It was assumed that both legs of the wye would be able to accommodate 25 mph speeds around the curves and that the proposed commuter storage yard and proposed modification to the west/south leg of the wye would not materially affect the ability of the concrete plant to remain at the existing site. Space should be reserved for reinstallation of missing north/east leg, but that would only be necessary for passenger service Downstate.

3.6 Norfolk Southern Rail Freight Yard

The physical characteristics of the freight yard require the construction of Track F, closest to the NEC, as a freight runner track, along with three yard tracks for the full length of the yard. Additional yard tracks in the western portion of the yard are also needed along with vehicular access maintained along the south edge of the yard.

Operationally, the proposed configuration would provide full separation of freight and passenger operations at Newark along with unimpeded access to the Delmarva Secondary via new Track F. The configuration would provide access to NEC Tracks 1 and A at both ends of the yard as well as universal access to all NEC Tracks at Iron and Ruthby Interlockings. As per NS requirements, it would also provide a wide clearance route through the Newark Station via Track F and Main Line Track 2.

Chapter 4 – Station Concept Plan

4.1 Station Planning Requirements and Guidelines

The existing train station at Newark provides minimal facilities and customer amenities. Any significant construction at the station will trigger development of new facilities that meet appropriate industry as well as Amtrak and commuter rail station standards.

The following Amtrak design standards must be met at any relocated platform(s):

- Platform height must be 48 inches above the top of the rail
- The platform must be 800 feet long to be able to handle 8-car trains, and should be able to be extended to 1,000 feet to meet Amtrak's Northeast Corridor future planning standard for Regional service. This analysis also considered platforms of 1,000 feet in length to accommodate MARC or Amtrak ten-car trains
- The platform must conform to minimum width standards to accommodate passenger loads and ensure safety. For an island platform a 30-foot width is desirable, and 24 feet is the minimum width without columns (26 is the minimum width with columns). For a side platform, a 14 foot width is the minimum and 16 feet is desirable.

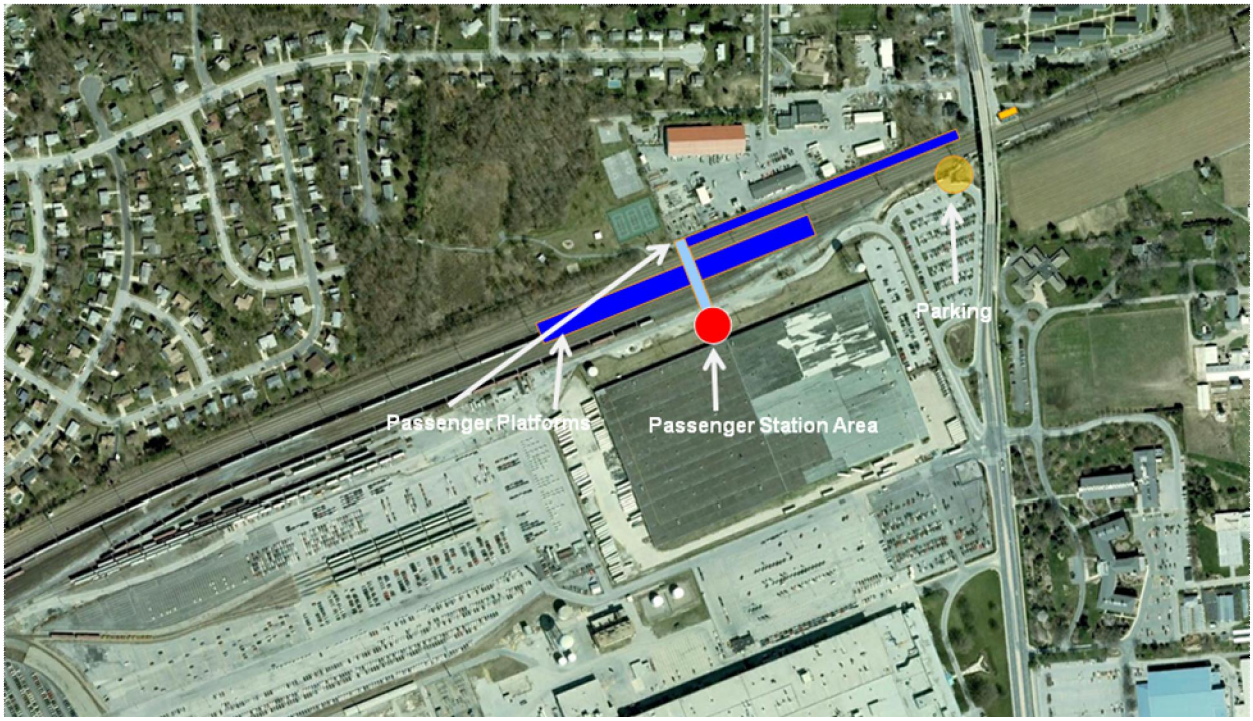
4.2 Station Configuration Alternatives

A number of alternative station platform and track configurations were identified and analyzed as part of the feasibility study. As agreed upon by the study stakeholders, the location of mainline and station tracks as well as station platforms were identified as part of the study process. The location of the station building would fit within the University's general zone of activity for train and site support, but the exact location of the pedestrian access and station building would be dependent on the location of the platforms.

The feasibility study evaluated station platform configuration and assessed commuter yard options given the future potential for SEPTA and/or MARC trains to utilize an area in Newark for the overnight maintenance and storage of trains.

The proposed platforms and pedestrian vertical circulation (bridge or tunnel) elements are proposed to be located approximately 1,000 feet west of the current station location. This location is centrally located in the area allocated by the University of Delaware for Transit-Oriented Development and the pedestrian bridge or tunnel would be in the center of the platform served by Amtrak, SEPTA and MARC, which would expect the highest level of boarding traffic. Pedestrian access to the station and site would still be accommodated at the end of the southbound platform via the bridge or tunnel. Figure 10 below shows the general proposed station and platform location relative to the current station and site.

Figure 10. Newark Rail Station Location General Plan



<u>Required Station Elements</u>

For planning purposes, the Newark Train Station is considered by Amtrak to be a Small Class V station (small-shelter-unstaffed), and with this the following standards are generally required.

- Platform
- Platform canopy*
- Sheltered waiting area providing windbreak/weather protection
- Auto pick-up/drop-off*
- Parking*
- Bus access*
- Other transit access (bus, light/commuter rail)*
- Taxi access*
- Bicycle racks*
- Station signage
- Highway signage
- Quik-Trak/eTicketing
- Passenger information display system (PIDS)
- Pay telephones*
- Emergency platform call box
- Local police surveillance/call box*

** Optionally required for this station classification*

Key issues in determining the station's relationship with transit-oriented development (TOD) are the location and configuration of TOD, and the location of station parking and access. Given the University's interest in potentially using the station area as an integral part of a new academic and technical campus, expansion of the train station at its current location could utilize the following TOD elements:

- Station building as a campus focal point
- Retail concessions within or adjacent to station building
- Public walkway above or below tracks linking development on both sides to the right-of-way
- Structured parking

Per this study's requirements, the station should also include public lavatories and adequate space for a security guard. The station area should include space for bike racks and lockers, with room for expansion.

In that the adjacent University development would serve as both an origin and a destination, SEPTA/MARC boarding traffic would likely be both northbound and southbound. For Amtrak southbound trains, the connection to the transit-oriented development and the opposite platform(s) would be made easier with the addition of the pedestrian bridge/tunnel.

SEPTA Regional Rail station planning guidelines do not apply in Delaware and DTC does not have formal station planning guidelines. For MARC planning purposes, the Newark Station should be considered an Intermediate Class Station. The following requirements apply to this class of station:

- Platform canopy
  - 400 foot minimum; full length of platform optional
- Platform shelters/windbreaks with seating
- Vertical circulation*
  - Stairs
  - ADA access provided by ramps or elevators
  - Allowance for future escalators
- Station building with ticket office and/or ticket vending machines, waiting area*
- Passenger information – variable signage, public address
- Security systems (e.g., CCTV)
- Passenger pick-up and drop-off facilities, bus bays
- Bicycle storage
- Pedestrian access and landscaping

** Indicates station element not included in Amtrak's requirements.*

Pedestrian Access Across Railroad Right-of-Way

A pedestrian bridge or tunnel to provide access from either side of the right-of-way to the platforms would be necessary at any new station at Newark. There is also potential to locate station facilities at either the bridge or tunnel level. While a tunnel raises significant issues with respect to drainage, lighting and the perception of patron safety, it would likely be less costly than a bridge. However a bridge provides high visibility access to the platforms, offering better perceived security than a tunnel. Norfolk Southern indicated a preference for a tunnel so as not to impact their operations with regard to vertical clearance.

The design requirements for a bridge include:

- 15 foot width desired (12 foot minimum, according to Amtrak standards)
- The bridge must be located approximately 30 feet vertically above the platform, in order to clear above the system of overhead catenary wires that delivers electric traction power to the trains.

A tunnel typically has lower construction costs than an overhead bridge. A tunnel would have to provide adequate drainage and should offer good sightlines and a feeling of spaciousness. The design requirements for a tunnel include:

- 20 foot width desired (15 foot minimum per Amtrak)
- The tunnel must be located approximately 20 feet vertically below the platform.

Regardless of whether a tunnel or bridge is used for vertical circulation, its location on the platform is important. The ideal location from a pedestrian circulation standpoint is close to the center of the platform, for even distribution of passenger loads and queues. The NFPA 130 Life Safety Standard calls for platform egress points at 600-foot intervals, so that no passenger has to walk more than 300 feet to reach a point of egress from the platform. On a 800 foot platform, this would mean two access/egress points no more than 600 feet apart. Only one of these points would need to include access across the NEC. The exact configuration of these access/egress points would be worked out in a future phase of planning and design.

4.3 Newark Station Full-Build Configuration – Island versus Side Platform

At full build-out, the station concept calls for an additional platform and platform track with two options:

- Full Development Option 1 (Track A/B island platform)
- Full Development Option 2 (Track B side platform)

These options are shown schematically in Figures 11 and 12.

Figure 11. Full Build Platform Configuration – Option 1 Double Island Platforms

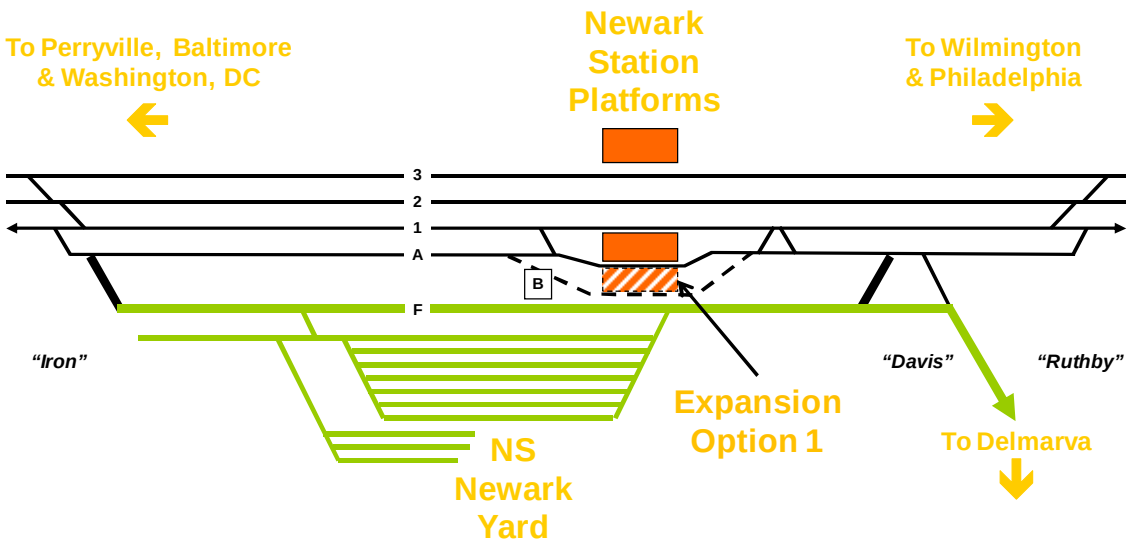
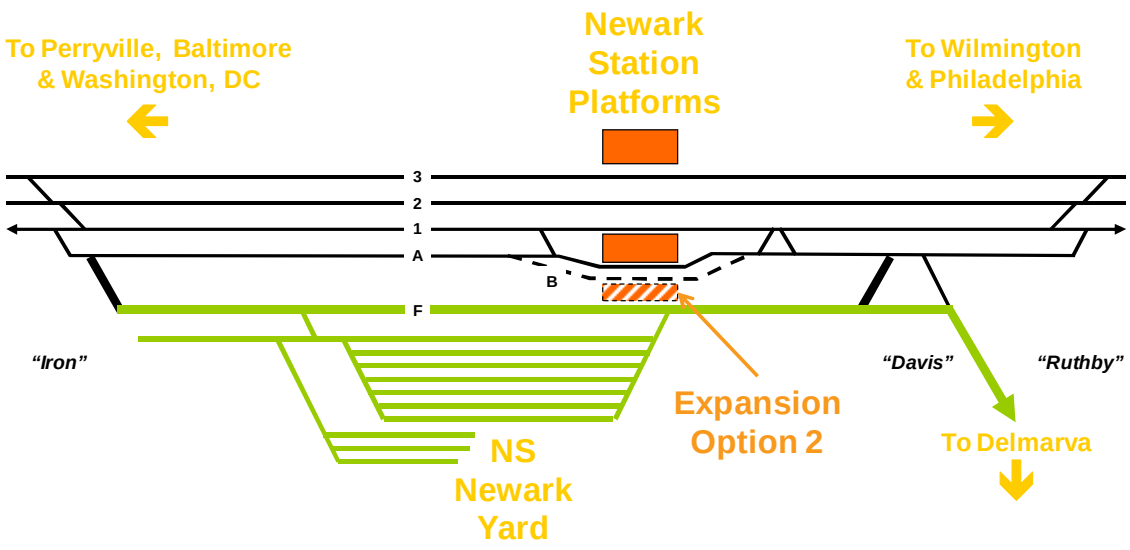


Figure 12. Proposed Full Build Platform Configuration – Option 2 Island and Side Platforms



In the second phase of rail improvements, the decision on Track B and the third platform configuration will need to be made. This third platform could be either an island or a side platform. However, this decision can be made in the future, as both options are compatible with the initial phase development.

There are pros and cons to consider when deciding between an island or a side platform, however these decisions can be deferred until Phase 2 of the project. An island platform is typically the best configuration for terminal operations and it facilitates cross-platform transfers for passengers. It is important to note that the A/B Island platform length is limited to 885 feet, because of track curvature to west and east of station.

Parking expansion from the initial 500 to 800 or even 1,000 vehicles in structured and/or surface parking will need to be considered as the plans for site development are refined and sequenced. Considerations for pedestrian, bicycle and vehicular access will also need to be coordinated with the site development plans advanced by the University.

4.4 Capital Costs

An estimate of the capital costs associated with relocating and reconstructing the Newark rail station was prepared, based on cost factors for comparable projects elsewhere. Costs were estimated for the five primary elements of work:

1. Passenger station
2. Station parking and access
3. Main line rail infrastructure required to support the station
4. Rail freight track improvements
5. New commuter rail storage yard

These costs, which are not based on engineering plans, should be considered preliminary estimates and subject to change as more work is done on the project.

The estimated capital costs for the relocated Newark Station at related capital improvements are shown in Figure 13. The Phase 1 costs include the development of an island platform between Tracks A and 1 and a side platform on Track 3, each 800 ft. long, plus associated railroad infrastructure costs on the NEC main line and within the NS Newark Yard. A 500-space surface parking lot would be provided in Phase 1, along with a relatively modest station building. Phase 1 also includes the development of a dedicated freight running track from the south end of Newark Yard to the junction with the Delmarva Secondary at Davis Interlocking.

Phase 2 includes the construction of Track B at the station, along with a second island platform to serve Tracks A and B. A 500-space parking garage is assumed to be built in Phase 2, as well as an expanded station building that would be part of a comprehensive transit-oriented development project adjacent to the station site. A storage yard for SEPTA and/or MARC commuter trains, at the Davis wye, is included in the Phase 2 estimate.

The Phase 1 project described above would effectively implement the applicable portions of the Northeast Corridor master plan in the vicinity of Newark Yard, Newark Station and Davis interlocking, achieving the critical imperative of relieving the passenger-freight operating bottleneck at the existing station, consistent with the four long-range objectives for railroad infrastructure investment in this area:

a. Create a Regional Rail Center consistent with the State of Delaware's transportation and economic development objectives
b. Resolve the existing operating conflicts between freight and commuter rail while expanding passenger services at the station
c. Enable expansion of passenger rail services including Amtrak, SEPTA, MARC, as well as future downstate intercity or commuter rail service
d. Preserve and create opportunities for expanding statewide rail freight operations.

Recognizing that the high up-front cost of the Phase 1 group of projects makes their implementation problematic, consideration was given to the identification of an initial

lower-cost capital investment that would be able to deliver the most important benefits while deferring other elements of the proposed plan – while remaining consistent with the overall objectives and design requirements. Initial implementation of a project at Newark Station is possible at a lower cost, with a somewhat reduced scope of investment. This initial project (referred to a Phase 1A) would entail:

- Construction of Track 'F' between Newark Yard and the Delmarva Secondary wye track at Davis Interlocking, providing separation of passenger and freight operations at Newark Station and at the north end of the NS Newark Yard
- Construction of a short (400 foot long) island platform serving Tracks 1 and A, with a pedestrian underpass to the existing Newark Station parking lot (avoiding the up-front need for development of significant new parking capacity).

The island platform station would permit expansion of SEPTA service between Wilmington and Newark, as envisioned by DelDOT. The island platform would be able to accommodate Amtrak and MARC trains operating on either Track A or Track 1, but the full set of interlocking and station improvements necessary for MARC service or upgraded Amtrak service at the station would not be provided as part of the initial phase of work. The estimated capital cost of Phase 1A could be on the order of $30 million.

Figure 13. Estimated Capital Costs

(Preliminary, Subject to Refinement)

	Phase 1	Phase 2	TOTAL
Newark Station	$20.3	$15.2	$35.5
Station Parking & Access (optional)	$8.2 500 surface spaces	$25.4 500 structured spaces	$33.6
Main Line Rail Infrastructure*	$50.2	$8.9	$59.1
Freight Rail Infrastructure**	$16.3	TBD	TBD
Commuter Yard***	--	$20.5	$20.5
TOTAL	$95.0	$69.9	$164.9

These figures reflect order-of-magnitude costs in millions of 2010 dollars, inclusive of contingencies and allowances for engineering design, construction management and program administration. These figures exclude property acquisition costs.

** Includes new station tracks, Track A upgrade and interlocking improvements at Otts, Newark and Davis.*
*** Includes new Track F between Otts and Davis; track configuration within Newark Yard to be determined.*
**** Commuter Yard Option 1, Davis Wye site.*

Figure 14 lists the main elements of work that would be included in the various phases of implementation.

Figure 14. Scope of Phased Capital Investments

Phase 1		Phase 2
1A - $30.0M	1B - $65.0M	$69.9M
Newark Station		
400 ft. island platform between Tracks 1 and A Pedestrian underpass with ramps connecting east end of island platform with existing parking lot Interim station building with SEPTA ticket window and ticket vending machines	Extension of Track 1/A island platform to 800 ft. New 800 ft. high-level side platform on Track 3 New station building at MOPAR building site, with ticket vending machines for SEPTA, Amtrak and MARC Pedestrian bridge across NEC right-of-way, with elevators and stairs to both platforms and new station site	Extension of island and side high-level platforms to 1,000 ft. New 855 ft. island platform between Tracks A and B, with stair and elevator connection to pedestrian bridge
Station Parking & Access		
Utilize existing station parking lot (reduced in size to accommodate new Track F) Parking expansion at adjacent site (former MOPAR building)	New access roadway to station site, with pick-up/drop off frontage New 500-space parking lot on site of former MOPAR building, adjacent to pedestrian bridge and station building	500-space parking structure, integrated into transit-oriented development at station site
Main Line Rail Infrastructure		
Track A shift to accommodate island platform 1 new crossover at south end of Davis Interlocking (Track F to A eastbound, providing freight access to NEC main line 1 new interlocked turnout tying Track F into existing Delmarva Secondary track at the south end of the wye	Upgrade Track A between Iron Interlocking at Newark Station New Chrysler Interlocking at south end of station (1 turnout, 1 crossover) New Farm Interlocking at north end of station (or modification to south end of Davis Interlocking), with universal crossovers between Tracks 1 and A New Otts Interlocking at south end of Newark Yard (2 crossovers, 1 turnout)	New Track B through station area 1 additional turnout at Chrysler Interlocking at south end of station (for Track B) 1 additional turnout at Farm Interlocking at north end of station (for Track B) Rationalization of Davis Interlocking (3 new crossovers, retirement of selected existing crossovers) in concert with NEC master plan improvements (not included in cost estimate) at Iron and Ruthby Interlockings
Freight Rail Infrastructure		
New Track F between Newark Yard and Delmarva Wye (Davis), with utility pole, catenary guy wire and College Ave. bridge modifications as required Yard track alignment modifications at east end of Newark Yard, with 3 new hand throw turnouts Security fencing and site lighting for east end of Newark Yard New 500 ft. access driveway to Newark Yard	Additional trackwork within central and western portions of Newark Yard to rationalize yard configuration and provide for Track F as running track Additional security fencing and site lighting Access driveway extension Creation of landscaped buffer strip between NS Newark Yard and adjacent development	Additional trackwork within central and western portions of Newark Yard Additional paving and fencing
Commuter Yard		
--	--	5-track Commuter Yard at Davis Wye

Chapter 5 – Action Plan

Subsequent efforts will focus on implementing these proposed improvements as part of a refined station design concept. These steps will include preliminary engineering investigations to resolve technical issues that were identified as part of this study. The decision on a pedestrian bridge versus a tunnel would also be finalized based on the refined station building concept. Station ancillary elements such as quantity of parking (and phasing) as well as size and location of bus bays and auto pick-up/drop-off zones would also be developed in conjunction with the University and the TOD plans for the station area. Similarly, the identification of pedestrian and bicycle access pathways and connections to existing ones would be part of the site planning process as the plans for the site are further developed by UD.

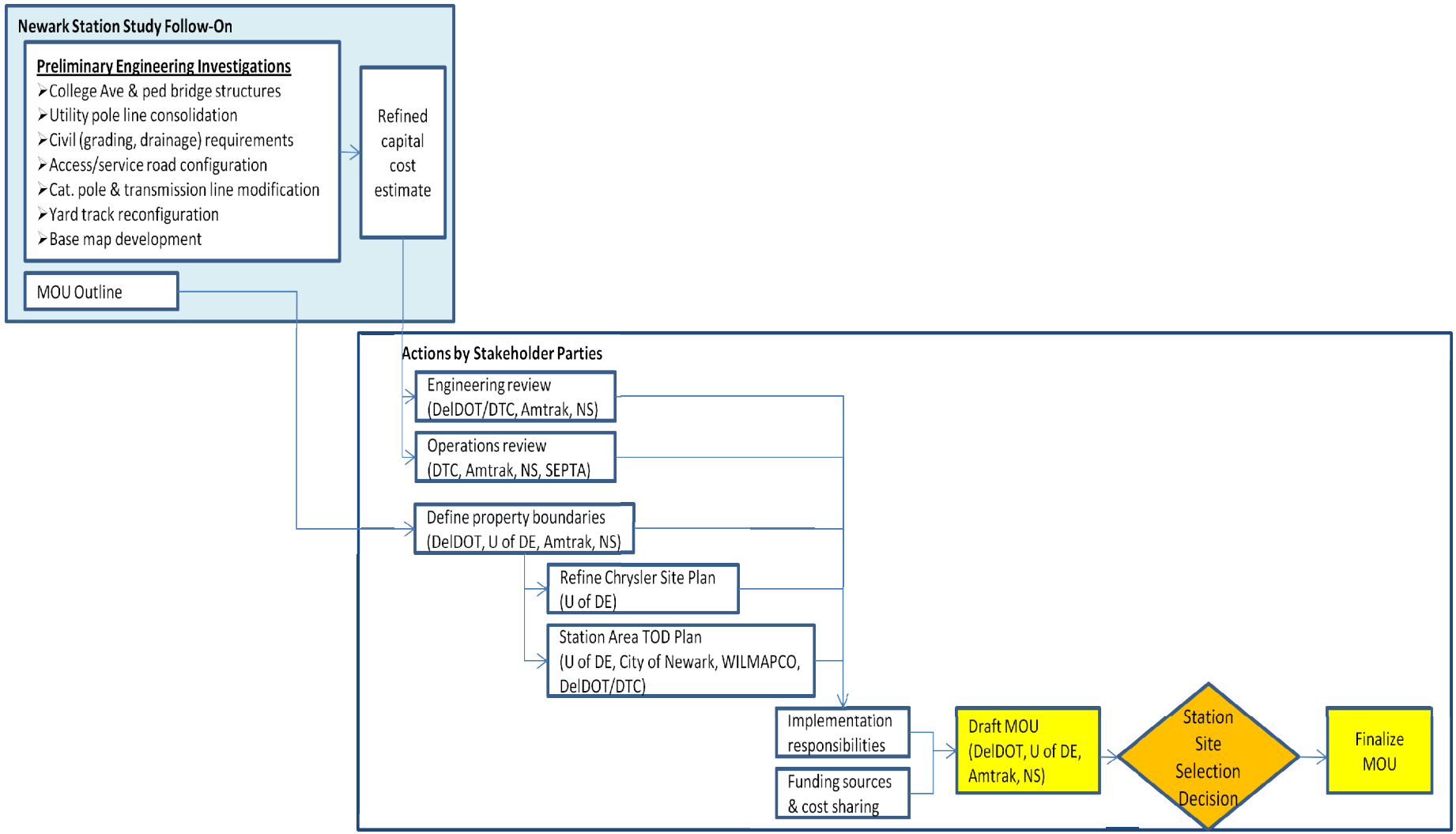
An official decision will need to be made concerning the selection of a site for the Newark Station. The advancement of this station concept will require continued coordination with UD and DelDOT, as well as NS, SEPTA and Amtrak to ensure that it moves forward in a comprehensive manner. A series of follow-on activities are needed which would result in a memorandum of understanding (MOU) between DelDOT, the University of Delaware, Amtrak and NS that would ultimately advance the rail portion of the station project.
Follow on engineering activities are needed to refine the capital cost estimate and would involve DelDOT and the railroads. These preliminary engineering tasks could include additional investigation of the following elements that were identified in this study:

- College Avenue and pedestrian bridge structures
- Utility pole line consolidation
- Civil (grading, drainage) requirements
- Access/service road configuration
- Catenary pole and transmission line modification
- Yard track reconfiguration
- Base map development

It is recommended that the outcomes of these engineering activities be incorporated with any refinements to the Chrysler Site Plan as well as a station area TOD plan. Public involvement will also need to be considered as part of the station site selection process. These efforts should also be coordinated with the Downstate Intercity Rail Study and any additional efforts that would help solidify the Newark Station site selection decision and result in a finalized MOU among the project's stakeholders.

The following diagram depicts how these activities could be organized and sequenced.

Figure 15. Newark Station Action Plan



Appendices

- PowerPoint Presentation slides from November 20, 2009 Meeting
- PowerPoint Presentation slides from January 8, 2010 Meeting (including option comparison matrix)
- PowerPoint Presentation slides from March 5, 2010 Meeting