Station Improvement Project

Newark Regional Transportation Center

Application for TIGER IV Discretionary Grant

APPLICANT CONTACT INFORMATION
Wilmington Area Planning Council
David V. Gula, Senior Planner
850 Library Avenue, Suite 100
Newark, Delaware 19711
(302) 737-6205 x. 122
dgula@wilmapco.org
DUNS #: 054650874

Submitted by:
Wilmington Area Planning Council
In conjunction with
State of Delaware
University Of Delaware
City of Newark
New Castle County

NEWARK REGIONAL TRANSPORTATION CENTER STATION IMPROVEMENT PROJECT TIGER (Transportation Investments Generating Economic Recovery) IV DISCRETIONARY GRANT APPLICATION

EXECUTIVE SUMMARY

The Wilmington (DE) Area Planning Council (WILMAPCO) is seeking TIGER IV grant funds to create a regional transportation center at the site of the proposed University of Delaware's (UD) Science and Technology campus (STC), a transit-oriented development (TOD) on the 272-acre former Chrysler Assembly Plant site. This application represents the first of several phases of improvements to the property to accommodate expansion of the passenger rail transportation, integration of other modalities, such as bus transit and address the conflict between freight and passenger rail at the site.

The Newark Regional Transportation Center (NRTC) is located along the busiest rail corridor in the United States, Amtrak's Northeast Corridor (NEC). Situated 124 miles south of New York and 105 miles north of Washington DC, it also benefits from major metropolitan areas such as Baltimore (56 miles) and Philadelphia (47 miles). The NRTC sits west of South College Avenue/SR 896, in close proximity to residential neighborhoods, University of Delaware (UD) facilities, and the downtown/historic district of the City of Newark, Delaware.

In addition to Amtrak service, Newark is served by the Southeastern Pennsylvania Transportation Authority (SEPTA) commuter rail to Philadelphia and there are proposals for expansion of Maryland Transit Administration (MTA) MARC commuter trains to Newark, which will fill a 20 mile gap in commuter rail service on the NEC. In addition, Norfolk Southern utilizes property adjacent to the NRTC for freight rail operations serving the Delmarva region.

A previously awarded TIGER II grant is being used to fund the National Environmental Policy Act (NEPA) approvals and preliminary engineering required for this project. This application seeks funding to continue those efforts, funding final design and construction for this project. Infrastructure improvements will include a relocated and expanded passenger rail platform; the addition of a grade separated passenger connection between the platforms and the new station structure; the reconfiguration of existing rail lines to better separate passenger and freight movement; and the addition of new freight track to preserve existing train movements. The grade-separated passenger connection between the parking lot, station structure, and new platform will provide safety and access improvements consistent with the Americans with Disabilities Act (ADA).

The project is supported by a partnership of stakeholders, both public and private, including WILMAPCO, State of Delaware, University of Delaware, City of Newark, New Castle County, Norfolk Southern Corp., Amtrak, SEPTA and the Maryland Transit Administration (MTA).

The total cost of the project is $26.0 million, with a request from the USDOT under TIGER IV for $10 million, or 38.5 percent of the total cost. The remainder will be funded through contributions from the Delaware Department of Transportation (DelDOT), UD, New Castle County, City of Newark and WILMAPCO. The non-federal matching contribution totals 61.5 percent.

Benefits of the Project:

The regional transportation center will improve the mobility of travelers in a region growing economically and demographically. The center will ultimately serve more than 20,000 students living and/or learning at the University of Delaware campus; over 30,000 residents in the surrounding City of Newark; 697,000 residents of the WILMAPCO region, which includes Cecil County, Maryland and New Castle County, Delaware; an increasing population of personnel based at the Aberdeen Proving Ground (APG) in Aberdeen, MD; and will be accessible to over 28.7 million riders served annually be Amtrak along the Northeast Corridor.

Of the over 250,000 persons employed in the WILMAPCO area, over 241,000 persons (79 percent) drive alone to work with almost 35 percent of the commute time consisting of 30 to 59 minutes. Creation of the regional transportation center provides commuter transportation choices, thereby economically and environmentally benefiting the region through reduction in congestion on the roadways and emissions contributing to greenhouse gases.

Over 1.25 million travelers use the rail system annually in Delaware, a figure which has grown by 53.4 percent since 2003. Amtrak stops at the site four times a day with SEPTA serving the station with 17 trips during weekdays. Plans are underway for the Maryland Transit Administration's Maryland Area Rail Commuter (MARC) train line to connect to the SEPTA train line at this location.

The Newark Regional Transportation Center project has the potential to reduce vehicle miles traveled (VMT) by providing better access to education and jobs via improved passenger rail access that connects to a network of bicycle and pedestrian amenities on the UD development and with existing non-motorized systems in Newark. Reductions in VMT will also help the WILMAPCO region (a non-attainment area) to meet its air quality goals.

An estimated average of 342 jobs will be created annually through the construction of this project, including an average of 211 direct and indirect jobs per year. In total, the project is projected to create 1,026 person years of employment, including 633 direct and indirect job years.

The long-term economic benefits for the area are uniquely supported by a transit-oriented multi-modal transportation center serving a significant redevelopment of the former Chrysler plant into the Science and Technology Campus (STC) for the University of Delaware. Bloom Energy Corporation has agreed to ground lease 50 acres at the STC to construct its east coast manufacturing, management, and research facilities. The building is planned for a Spring 2013 opening and will ultimately employ 900 individuals. In addition, should Bloom encourage up to six vendors/suppliers to join them at the site, employment at this site could increase by an additional 600. The physical proximity of UD to other centers of research in the region has already led to strategic alliances that will have major impacts on the STC. APG is emerging as one of the leading science and technology centers in the United States resulting from the Base Relocation and Closure (BRAC) program and has added 8,000 civilian jobs to the existing 16,000 jobs, and an additional 7,000 civilian jobs to the surrounding area. A Cooperative Research and Development Agreement (CRADA), which was signed in January 2010 with the U.S. Army, will enable UD and the Army to work together on research and education projects focused on national security and defense, both at Aberdeen, Maryland and at the STC.

Plans for the site also include space for translational initiatives developed through the Delaware Health Sciences Alliance founding members: Thomas Jefferson University, Alfred I. duPont Hospital for Children/Nemours, the Christiana Health Care System and the University of Delaware; as well as the Delaware Rehabilitation Institute and other collaborative centers.

TABLE OF CONTENTS

PROJECT DESCRIPTION

The Newark Regional Transportation Center (NRTC) is located along the busiest rail corridor in the United States, Amtrak's Northeast Corridor (NEC). Situated 124 miles south of New York and 105 miles north of Washington DC, the site also benefits from major metropolitan areas in close proximity, such as Baltimore (56 miles south) and Philadelphia (47 miles north). The center sits west of South College Avenue/SR 896, in close proximity to residential neighborhoods, UD facilities, and the downtown/historic district of the City of Newark, Delaware.

Train operations through Newark are numerous and congested. Over 1.25 million travelers use the rail system annually in Delaware, a figure which has grown by 53.4 percent since 2003. Amtrak stops at the NRTC site four times a day, with SEPTA serving the station with17 trips during weekdays. Plans are underway for the Maryland Transit Administration's Maryland Area Rail Commuter (MARC) train line to connect to the SEPTA train line at this location.

In addition to passenger service, Norfolk Southern's (NS) Newark Yard plays a strategically important role in supporting efficient freight deliveries to the region, including the Port of Wilmington, the PBF Energy refinery in Delaware City, and the Delmarva Peninsula. However, Amtrak limits freight service on the NEC to the overnight hours between 10 p.m. and 6 a.m. to avoid conflict with passenger trains.

The resulting volume of this rail activity creates a bottleneck for freight and passenger trains in Newark, and the station configuration is not optimal for current or future passenger demands. There is an exciting opportunity for growth, however, at the adjacent site of the former Chrysler Assembly Plant, which at 272 acres is one of the largest contiguous developable land parcels adjacent to a rail station on the entire NEC. The University of Delaware has purchased this site and is advancing redevelopment plans in keeping with surrounding neighborhoods and transportation plans.

The Station Improvement Project at the Newark Regional Transportation Center (NRTC) will provide the foundation for the potential development of the former Chrysler Assembly Plant adjacent to the site, a uniquely large site on Amtrak's Northeast Corridor (NEC). In addition, the completion of this project will facilitate the ability for increased passenger train service while maintaining existing freight operations. WILMAPCO, along with other project stakeholders, wants to ensure that infrastructure investment capitalizes on the opportunities afforded by transit oriented development (TOD) and is in harmony with the capital improvement plans of its project partners: the University of Delaware, Amtrak and Norfolk Southern (NS), who own property adjacent to the station.

With preliminary engineering and environmental efforts advancing through TIGER II funding, this project is in a position to move ahead to final design and construction with the assistance of the TIGER IV program. As the partnership among multiple

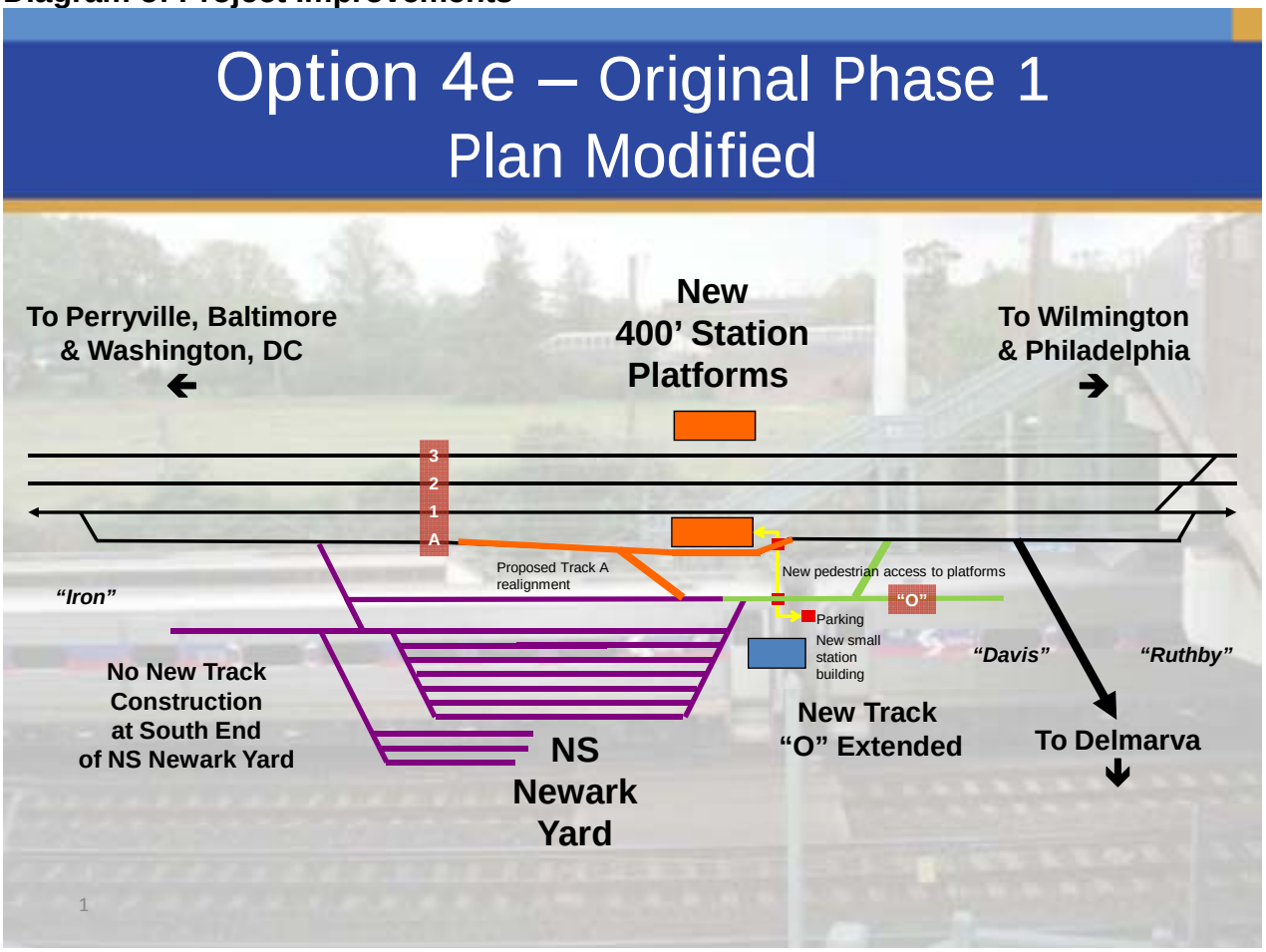
stakeholders evolves, this project is a strong example of how multiple public and private entities can work together to keep a project focused and moving forward.

The project involves the following improvements:

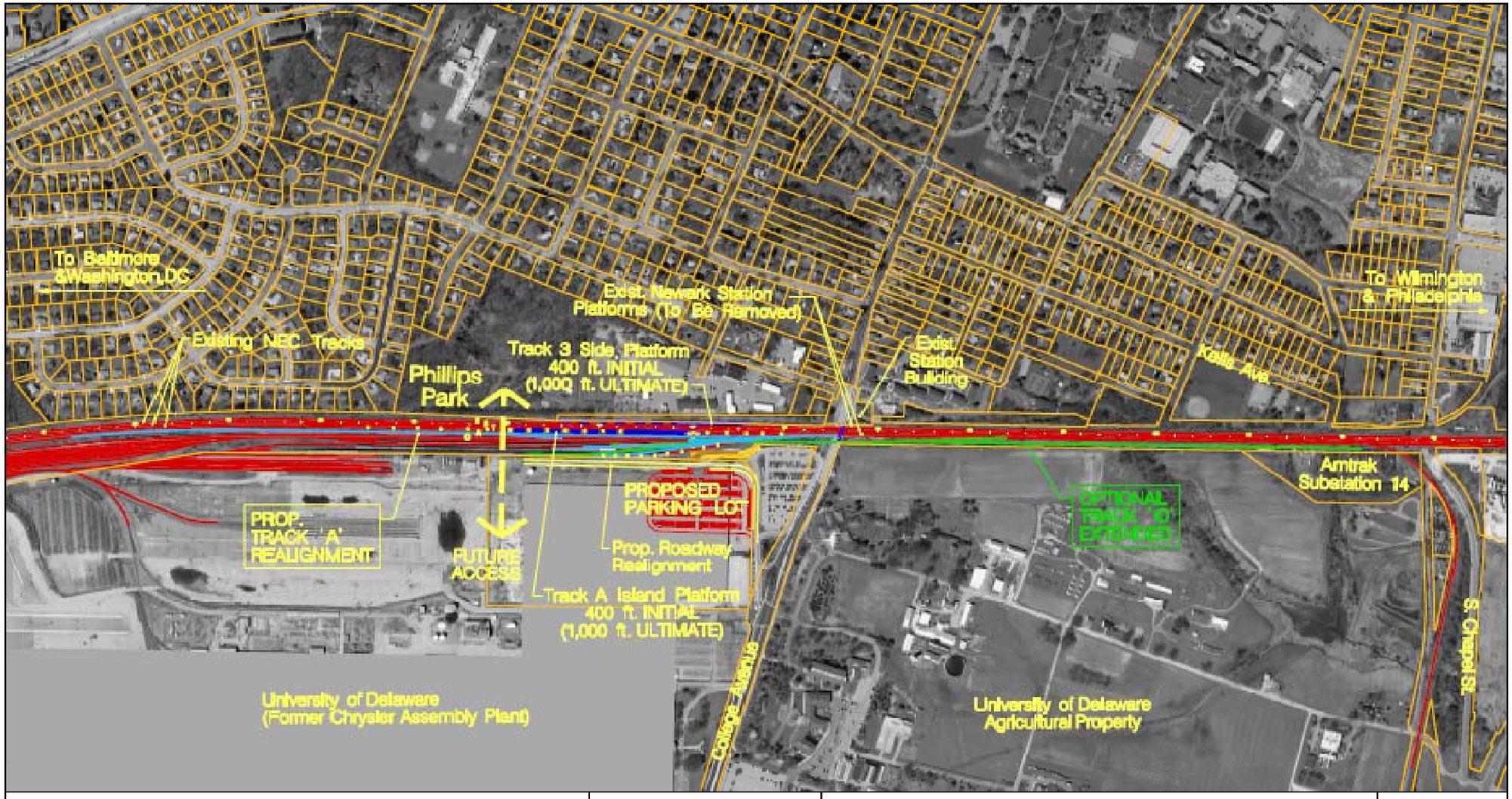
- Construction of a center passenger rail platform with a grade-separated pedestrian connection improving passenger safety and Americans with Disabilities (ADA) compliance
- Shifting one of the existing passenger rail tracks (Track A) to accommodate the new platform
- Construction of an expandable station building with SEPTA and DART First State ticket window and vending machines
- Construction of new yard track connected to NS Track O in the Newark Yard and extending east 2,000 feet to serve as new tail track for NS yard operations.
- Construction of a new connection between NS Track O and Track A to accommodate normal freight and high-and-wide movements around the new island platform.
- NS Newark Yard track alignment modifications, security fencing, and new access driveway

A diagram of the proposed improvements is provided. This concept was the preferred alternative resulting from negotiations between the project partners and is based in part on the results of a feasibility study completed in July 2010 by WILMAPCO to determine the best way to improve the facility, provide a stimulus for expanded passenger rail service, continue freight rail activities, and allow for future expansion.

Diagram of Project Improvements



Engineering Schematic of Newark Regional Transportation Center and Adjacent University of Delaware Development



PROJECT PARTIES

The Newark Station Improvement Project at the Newark Regional Transportation Center has the support of a large and diverse group of stakeholders, all of whom have committed to the planning, engineering, or capital cost portions of the project. The Governor of Delaware, Jack Markell, has joined U.S. Senators Thomas Carper and Chris Coons, and U.S. Representative John Carney in supporting this project, as well. WILMAPCO will administer the grant funds and the DelDOT will implement the project. This relationship has proven to be successful and will be similar to the relationship carried out with the previously awarded TIGER II planning grant.

The complete list of stakeholders for the project is presented below.

- The Wilmington Area Planning Council (WILMAPCO)
- Delaware Department of Transportation (DelDOT)
- Delaware Transit Corporation (DTC)
- Delaware Economic Development Office (DEDO)
- City of Newark
- New Castle County
- University of Delaware
- Amtrak
- Norfolk Southern Corporation

Additional stakeholders were involved through the project's feasibility study and are anticipated to continue involvement through this project. Given the wide-reaching impacts of this project, some of these stakeholders are located outside of the WILMAPCO region:

- SEPTA
- Cecil College
- Cecil County Elected Officials
- The Chesapeake Science and Security Corridor (CSSC)

Letters of support from partners and stakeholders are provided as an appendix to this document.

GRANT FUNDS/SOURCES AND USES OF PROJECT FUNDS

The table below presents the sources and uses of funding for the project.

Sources and Uses of Funds

	% Contribution	Amount
SOURCES OF FUNDS		
TIGER Grant	38.5%	$10,000,000
DelDOT	48.8%	$12,700,000
University of Delaware	11.5%	$3,000,000
City of Newark	1.0%	$250,000
WILMAPCO	0.1%	$25,000
New Castle County	0.1%	$25,000
Subtotal – Capital Contributions	**100.0%**	**$26,000,000**

In addition to the DelDOT's contribution as part of the State of Delaware's Capital Transportation program funds, local contribution for the project is expected to be provided by public and private entities, potentially in the form of land required to provide right-of-way access for the construction of the NRTC. Additionally, it is anticipated that UD will further participate by providing land as part of a mixed-use development on or adjacent to their Science and Technology Campus.

PRIMARY SELECTION CRITERIA

A) Long Term Outcomes

State of Good Repair

The Newark Regional Transportation Center (NRTC) project ensures that a key piece of our regional transportation infrastructure will remain in good repair. The new station will also provide better and safer access for passengers, especially the disabled by meeting the requirements of the Americans with Disabilities Act (ADA). Further, the project will ensure conditions for simultaneous passenger and freight operations are maintained.

Economic Competitiveness

The closing of the Chrysler plant meant a loss of jobs, taxes, and secondary employment in Newark and our region. A new train station, along with further redevelopment of the site by the University of Delaware (UD) and other project partners will help to regain some of this loss in two primary ways:

1.) Newark will be better connected to surrounding regions by rail, increasing access to both local and non-local employment. The track work associated with this project will allow for the introduction of commuter trains to/from the Baltimore region (helping fill a 20 mile commuter rail gap between Perryville, MD and

Newark, DE), while also setting the stage for expansion of commuter trips to/from the Philadelphia region.

2.) The City of Newark's Comprehensive Plan calls for redevelopment of the former Chrysler site in a mixed use manner that includes "high-tech research, development and educational facilities," as well as light manufacturing and commercial development.[1] Bloom Energy Corporation has agreed to ground lease 50 acres at the STC to construct its east coast manufacturing, management, and research facilities. The building is planned for a Spring 2013 opening and will ultimately employ 900 individuals. In addition, should Bloom encourage up to six vendors/suppliers to join them at the site, employment at this site could increase by an additional 600. Bloom is a manufacturer of solid oxide fuel cells which holds the greatest potential for fuel cell technology. Bloom has solved many of the engineering challenges with breakthroughs in material science and a revolutionary design producing technology for a cost-effective all-electric solution. Thus, this former manufacturing facility will be transformed into a flexible development which keeps pace with the changing U.S. economy. The desire by UD to provide improved transit service on this site early on as part of a multimodal transportation system further reflects their desire to develop the land to its highest and best use while embodying sustainability as part of the infrastructure development process.

Livability

Livability is a federal initiative to tie the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. The NRTC addresses these objectives by substantially improving local and regional access to an existing train station. This station improvement project benefits UD's proposed mixed-use, Science and Technology Campus, by increasing its rail access and making the site more transit-friendly. Further, the project supports both the Wilmington Area Planning Council (WILMAPCO) and New Castle County's long-term goals to promote the infill and redevelopment of places surrounded by existing infrastructure.

UD's site development plan envisions an integrated transportation system incorporating Transit Oriented Development, rail systems, and 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 maximum opportunities for integrated transportation and pedestrian networks.

[1] City of Newark Comprehensive Plan, 2008

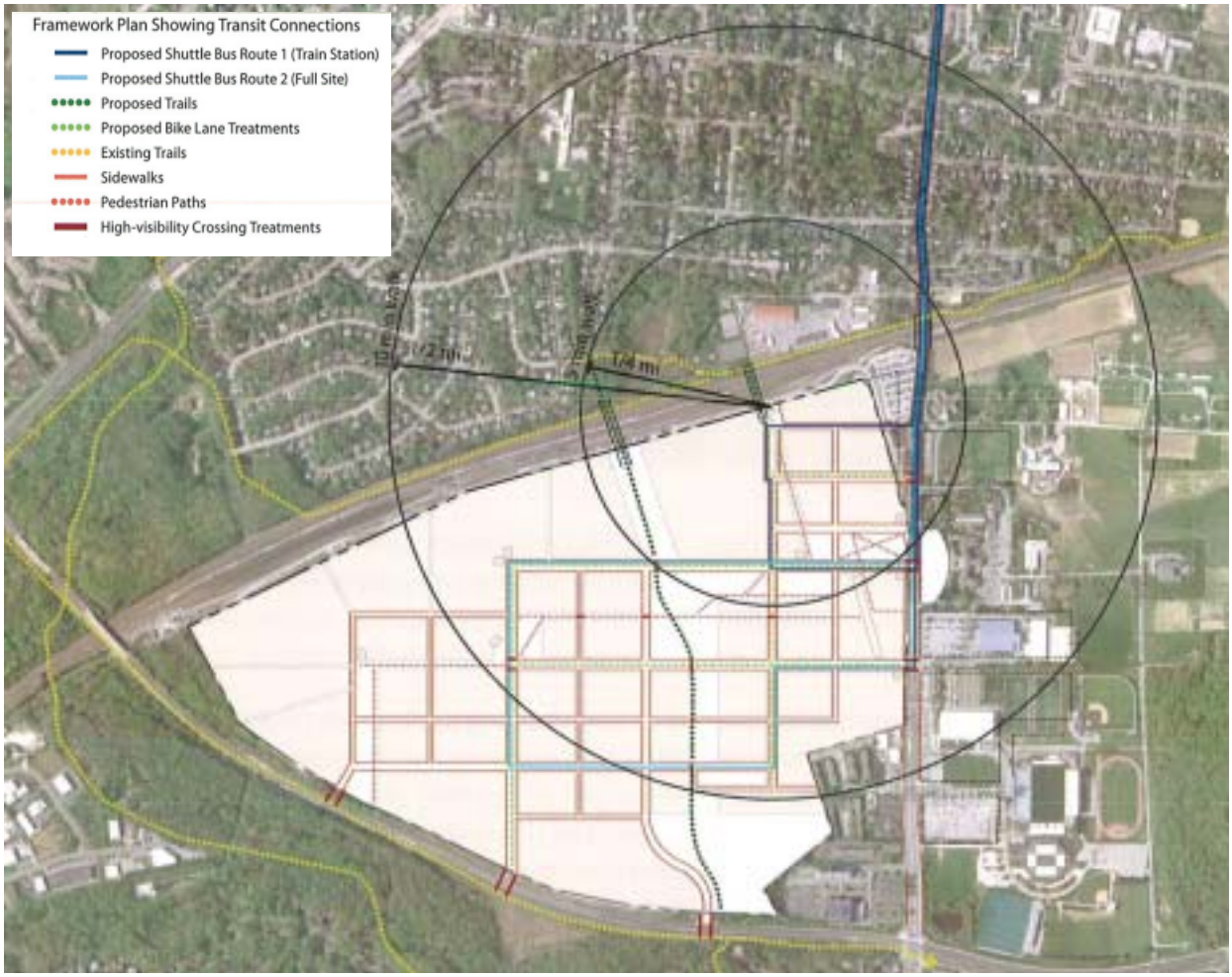
UD's plan[2] anticipates increased commuter rail demand and assumes that 15 percent of the workforce at the site will use rail. Transit-oriented development will include the following functions presented in the table below:

Proposed Site Functions

USE	GROSS SQ. FT.
Train Station	25,000
Bloom Energy manufacturing hub	300,000
Fitness and Wellness Center Medical Office Building	100,000 25,000
Retail – Café/Restaurant	6,000
Residential (100 units) Retail/Restaurant	110,000 20,000
Retail, Parking Management, Parking Garage	Based on need
Residential (100 units) Retail/Restaurant	110,000 25,000
Hotel (200 beds)/Conference Center/Restaurant	N/A
College of Health Science	170,000

[2] University of Delaware Phase One Conceptual Development Plan, August 9, 2010

The figure below depicts what transportation amenities would be within a five-minute walk of the proposed Train Station. Note that the bulk of the new campus is within a ten-minute walk from the station location, as is a substantial residential neighborhood area.



The STC's master plan is designed to express UD's core values – Campus Experience, Community Engagement, Campus Connectivity, Sustainable Growth, and Campus Architecture and Capacity. These can be seen in the following elements:

- Grid of Streets – The grid aligns with South College Avenue, reflecting the historical grid of Newark. Blocks can be combined to accommodate a diversity of uses and sizes when appropriate.
- Connected Open Spaces – A linear progression of open spaces across the campus links significant UD resources and prominent campus landmarks.
- Connections to other UD Resources – The open space network and proposed street grid on the STC complement UD property east of South College Avenue to facilitate easy movement between the two sides as well as between the Athletics facilities and the train station.

- Transportation – Improved multimodal transportation systems and comprehensive transportation demand management develop a sustainable transportation paradigm.
- Sustainability – The plan incorporates many sustainable features, including a comprehensive stormwater plan integrated with the open space network and a potential ecological corridor linking existing wooded areas. Modular on-site energy production permits use of the latest technological capabilities as they emerge. Finally, buildings will be oriented and designed to take advantage of passive heating and cooling.

Proposed Site Plan

Environmental Sustainability

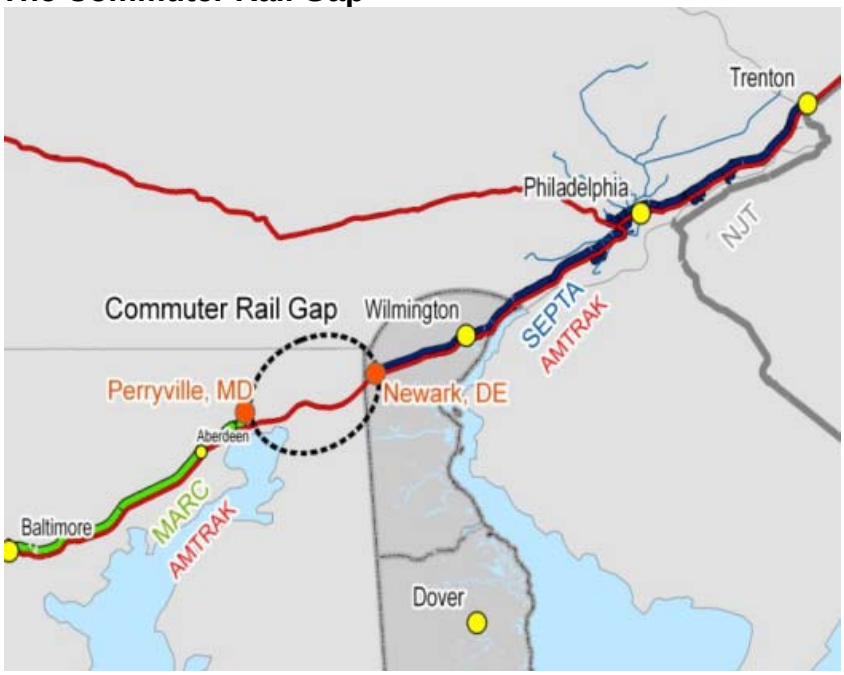
The NRTC will provide additional and more sustainable transportation options to those who live and work in Newark, New Castle County and beyond. The center will ultimately serve:

- More than 20,000 students living and/or learning on the University of Delaware campus;

- More than 30,000 residents in the surrounding City of Newark;
- 697,000 residents of the Wilmington Area Planning Council (WILMAPCO) reghion, which includes Cecil County, Maryland and New Castle County, Delaware; and
- Accessible to over 28.7 million riders served annually by Amtrak along the Northeast Corridor.

Annually, over 1.25 million travelers use the rail system in Delaware. Usage of the system has grown by 435,000 persons or 53.4 percent since 2003. According to the Northeast Corridor (NEC) Infrastructure Master Plan, both Amtrak and commuter rail service is forecast to continue to grow throughout the corridor. Increased prices for gasoline will likely drive this growth even higher. The NRTC's future as a transportation hub will be further bolstered when the Maryland Transit Administration's Maryland Area Rail Commuter (MARC) train line connects to the Southeastern Pennsylvania Transportation Authority (SEPTA) train line at this location, filling in a 20-mile gap in commuter rail service that currently exists between Perryville, MD and Newark, DE. Discussions are underway between Maryland and Delaware to facilitate this connection.

The Commuter Rail Gap



Of the over 250,000 persons employed in the WILMAPCO area, more than 241,000 persons (79 percent) drive alone to work with almost 35 percent of the commute time consisting of 30 to 59 minutes. Creation of the regional transportation center provides commuter transportation choices and potential for drivers to shift from automobiles to alternative modes of travel, thereby economically and environmentally benefiting the region through reduction in roadway congestion and emissions contributing to greenhouse gases.

Data on regional workflows taken from the American Community Survey (2006-2008 CTPP) show that currently only a small percentage of commuters in the WILMAPCO region utilize rail for work trips. The NRTC will allow expanded parking facilities, improved passenger amenities, and expanded service that can attract new train riders. In particular, the proposed connection between MTA's MARC trains and the existing SEPTA service at NRTC will set the stage for commuter and pleasure trip transfers between regional trains. The table below shows the commuter travel flow numbers from New Castle County to work destinations in the surrounding cities and counties, and the current mode share of rail riders.

Destination of Workers from New Castle County from 2006-2008 American Community Survey CTPP*

Destination	Total, Means of Transportation	Streetcar, subway, railroad or ferryboat	Transit Mode Share %
Baltimore city, Maryland	510	25	4.9%
Baltimore County, Maryland	25	0	0.0%
Camden County, New Jersey	850	4	0.5%
Cecil County, Maryland	4,750	55	1.2%
Delaware County, Pennsylvania	9,230	35	0.4%
District of Columbia, District of Columbia	290	240	82.8%
Fairfax County, Virginia	120	20	16.7%
Harford County, Maryland	315	0	0.0%
Howard County, Maryland	35	20	57.1%
Kent County, Delaware	4,060	0	0.0%
Montgomery County, Maryland	185	70	37.8%
Montgomery County, Pennsylvania	1,925	45	2.3%
New Castle County, Delaware	212,990	450	0.2%
New York County, New York	415	145	34.9%
Philadelphia County, Pennsylvania	7,330	1,375	18.8%
Sussex County, Delaware	725	0	0.0%

Source: U.S. Census Transportation Planning Package 2006-8.
http://ctpp.transportation.org/Pages/3yrdas.aspx

The table on the following page shows the commuter travel flow numbers from Cecil County to work destinations in the surrounding cities and counties, and the current mode share of rail riders.

Destination of Workers from Cecil

County from 2006-2008 American Community Survey CTPP*			
Destination	Total, Means of Transportation	Streetcar, subway, railroad or ferryboat	Transit Mode Share %
Anne Arundel County, Maryland	305	25	8.2%
Arlington County, Virginia	45	45	100.0%
Baltimore city, Maryland	1,215	25	2.1%
Delaware County, Pennsylvania	295	15	5.1%
District of Columbia, District of Columbia	200	84	42.0%
Harford County, Maryland	5,645	10	0.2%
New York County, New York	35	20	57.1%
Philadelphia County, Pennsylvania	450	60	13.3%

As these figures indicate, a healthy percentage of workers traveling from the WILMAPCO region to their work destinations use rail as their means of travel. The NRTC will improve rail travel on the NEC and will encourage more medium and long-distance travelers to use rail.

Along with UD's development, which is intended to serve as a reverse-commute education and employment destination, enhancements to the Newark station would allow additional persons to access the facility by transit, maintaining the spirit of a dense, mixed-use, livable community with various transportation modes.. Given the project's location near a college campus, it provides an additional incentive for students not to have a car on campus, thus potentially lowering their combined housing and transportation costs.

In short, the expansion of the Newark Train Station will allow additional train service which has the potential to reduce Vehicle Miles Traveled (VMT) leading to reductions in mobile-source emissions, including greenhouse gases which increase global climate change. New Castle County is currently in Non-attainment for Fine Particulate Matter (PM 2.5) and ozone, and without VMT reductions in the near future, may struggle to realize continued reductions in these emissions.

Safety

Increased Passenger safety will be addressed through the construction of grade separated pedestrian access from the station building to the rail platforms. The project is also ADA compliant, allowing for full access to both the station and the platform by handicapped persons, which is not currently available. The project will also begin the task of separating freight and passenger train movements. This last task will be fully accomplished in multiple phases.

B) Evaluation Of Expected Project Costs And Benefits

A benefit-cost analysis (BCA) was conducted for the Newark Regional Transportation Center (NRTC) for submission to the U.S. Department of Transportation (U.S. DOT) as a requirement of a discretionary grant application for the TIGER IV program. The analysis was conducted in accordance with the benefit-cost methodology as recommended by the U.S. DOT in the Federal Register (77 Fed. Reg. 4863) and conducted for a 30 year analysis period after full operations begin in FY 2018.

The primary geographic coverage of this analysis is the area surrounding the planned Newark Rail Station and adjacent to connected bus routes and bike paths, which generally lies within or near the University of Delaware. However, benefits and costs associated with passenger activity related to the MARC Penn Line extension will accrue to a much larger area, but generally within the states of Delaware, Maryland, Virginia and Pennsylvania and the District of Columbia. The broader regional rail impacts are significant because the existing conflict between freight and passenger trains at the Newark Station is an impediment to future growth in commuter rail transport.

The overall capital cost of the project is expected to be $26 million in undiscounted 2011 dollars. Of this amount, $7 million is projected to be spent in 2016 and $19 million in 2017.

Operations and maintenance costs are projected to equal $489,902 per year (in undiscounted 2011 dollars) compared with the no build scenario. Over the 30 year period these costs accumulate to $13.1 million in 2011 dollars. WILMAPCO does not project major rehabilitation or replacement costs over the 30-year period.

The project creates benefits of $250 million in 2011 dollars ($58.6 million when discounted at 7 percent). It does so, generally by decreasing travel times and shifting trips previously taken by automobile to train.

In summary, escalating gas prices combined with the planned development of the University of Delaware's Science and Technology Campus creates an opportunity to provide significant benefit to rail passengers. In addition to Amtrak's Northeast Regional trains already serving the station, the Newark Regional Transportation Center will serve travelers going to Baltimore, Washington, DC and other points south via extended MARC service, as well as persons traveling to Wilmington, Philadelphia and other points north via additional SEPTA service. The NRTC will also serve as a destination for students and employees commuting to or visiting the University of Delaware from multiple locations along the Northeast Corridor. The positive benefit-cost ratio and an overall project benefit matrix are summarized in the tables that follow.

Table 1. NRTC Impact and Benefits Matrix

Project Component	Type of Impact	Population Affected by Impact	Economic Benefit	Summary of Results (at 7% discount rate)	Page Reference in BCA
Newark Regional Transportation Center	Mode shift from Automobiles	Employees at future University of Delaware Science and Technology Campus (STC)	Automobile cost savings	$6.1 million savings	2
Newark Regional Transportation Center	Mode shift from Automobiles	New commuters from Delaware area to Baltimore and Washington D.C., new passengers to Philadelphia	Automobile cost savings	$44.2 million savings	3
Newark Regional Transportation Center	Reduction in auto VMT	All drivers in study region and society	Reduction in Accidents 3.3 fatalities, 2.3 Injuries and 1.9 Property Damage only Accidents per million VMT	$20.9 million savings	5
Newark Regional Transportation Center	Reduction in auto VMT	Society and surrounding communities	Reductions in greenhouse gas emissions 129,000 tons of emissions	$2.3 million savings	10
Newark Regional Transportation Center	Reduction in auto VMT	Surrounding communities	Reductions in noise	$44,000 savings	11

Source: Parsons Brinckerhoff, 2012

Table 2 below shows the overall results of the BCA. At a 7 percent discount rate the Project yields a benefit-cost ratio of 2.68 over a 30 year period.

Table 2. Benefit Cost Analysis Summary Results

Scenario	Net Present Value (2011 $ millions disc.)	Economic Rate of Return	Benefit Cost Ratio
Case A (7 percent discount rate)	$36.73	19.6%	2.68
Case B (3 percent discount rate)	$96.97	19.6%	4.21

Source: Parsons Brinckerhoff, 201

C) Evaluation Of Project Performance

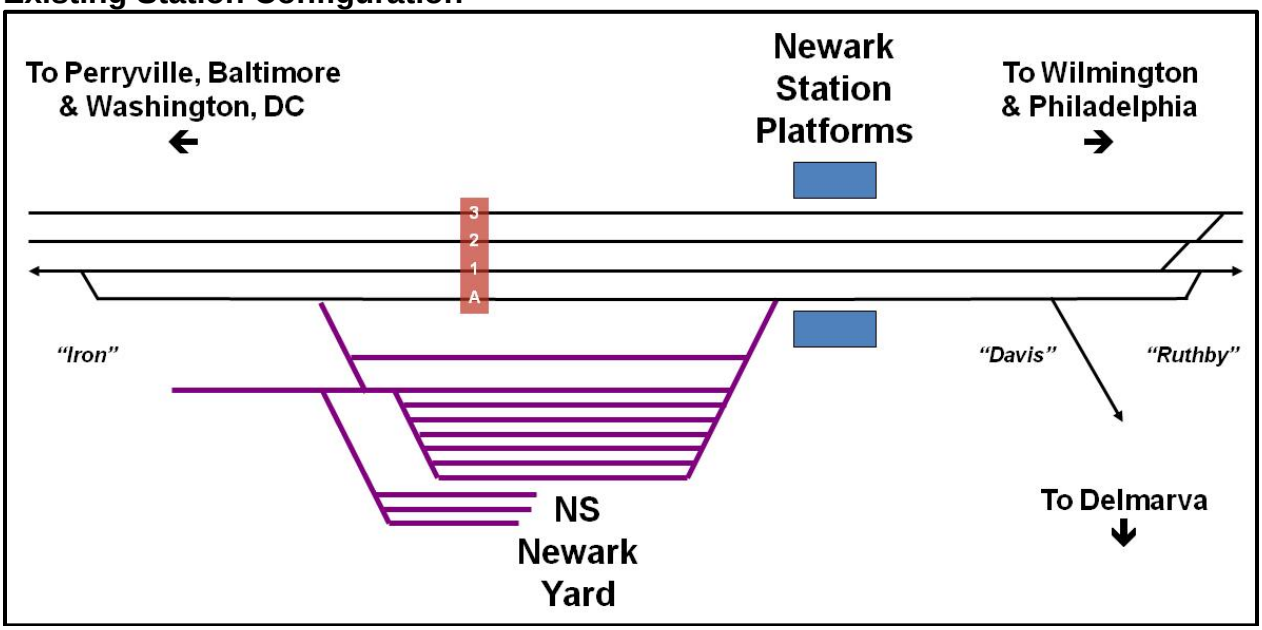
The Newark Regional Transportation Center and surrounding areas have already been the subject of two planning studies—one by UD, and a feasibility study by WILMAPCO. The outcomes of the WILMAPCO feasibility study were the following:

1. Defer significant freight and passenger train operating conflicts, providing additional capacity for growth in the passenger market sector while maintaining operating windows in the freight sector;
2. Develop a Newark Regional Transportation Center that is the catalyst for a more livable community and sustainable development.

These two issues are co-mingled, and UD's purchase of the former Chrysler site compels local leaders to seize this redevelopment opportunity. The following discussion provides more detail on the desired outcomes of this effort for which the Newark Station Improvement Project will be the initial development beginning the transformation of the area.

Outcome #1: Defer Significant Freight and Passenger Train Operating Conflicts
Currently, train service through the Newark Train Station operates on four tracks on Amtrak's NEC. Tracks A and 1 are used by NS freight trains, which use the NEC mainline to travel between their Newark Yard and Harrisburg, PA, and to access the Ports of Baltimore and Wilmington. Per Amtrak operating plans, freight service is constrained to operate between 10 p.m. and 6 a.m. on the NEC north of Perryville, MD and limited access at other times during the day dependent on train size, window opening and mainline traffic.. This also affects freight movement at the Newark Yard (see figure, below). As passenger service is expanded, there is inherent conflict which will negatively impact the operating window for freight traffic.

Existing Station Configuration



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. The Delaware Transit Corporation (DTC) contracts with SEPTA to operate nine commuter train round trips on the Wilmington Newark 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. In terms of train operation, 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 Transit Administration (MTA) currently provides rail commuter service between points in Maryland and Washington, DC under the Maryland Area Regional Commuter (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 peak service north from Perryville with a new station at Elkton, MD and track improvements to Newark by 2020. MTA and DTC are cooperating on an agreement to develop the timetable for this service extension.

The NS Newark Yard plays a strategically important role supporting efficient freight deliveries to the region, including the Port of Wilmington, the PBF Refinery in Delaware City, 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 in the state. The facility's function is to support operations for NS's 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, the growing AutoPort facility, the PBF Refinery, and Claymont Steel in Claymont, DE. NS plans to expand operations as traffic grows in this area.

Amtrak limits freight service to the overnight hours to avoid conflicts with passenger train service, with only limited access during the mid-day period. This freight-commuter conflict prevents unscheduled movement of freight from the Newark yard to the NEC, which is necessary also to access the Delmarva Secondary.

The NRTC Station Improvement Project will be the first phase of the plan to address this constraint and eventually provide a new freight track with a direct connection to the Delmarva Secondary. The current plan develops the passenger station improvements while also mitigating impacts to the existing freight operation.

Outcome #2: Develop a Newark Regional Transportation Center that is the catalyst for a livable community and sustainable development

Hand in hand with passenger and freight operations, the Newark Regional Transportation Center will be a hub for economic activity, as commuters and travelers take advantage of multimodal transportation choices at the NRTC as well as new development as part of UD's STC. As the largest economic development opportunity in the state, the NRTC will offer the following features:

- Access and egress for expanded rail passenger traffic, both through station facilities and platforms;
- Parking facilities to promote and accommodate rail ridership;
- A Center that is the focal point of redevelopment of brownfields encompassed by the former Chrysler site;
- A multimodal center, accommodating pedestrians, bicycles, bus transit service, and taxis;

As rail traffic grows and the University advances its plans for development of the Science and Technology Campus, the station needs to better provide SEPTA, Amtrak and potential future MARC service. The existing platforms at Newark Station do not meet Amtrak standards for passenger stations on the NEC 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 will initially provide a surface lot with additional parking capacity over and above the current quantity of available parking (currently at 385 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.

Measuring the Outcomes

Applicants for TIGER IV grants are asked to select outcomes to pursue and report on in the performance of this project. For the Newark Regional Transportation Center Station Improvement Project, WILMAPCO identifies the following outcomes for measurement:

- Travel changes, specifically the changes in mode share;
- Economic development, including infill development, recycled parcels of land or private sector investment along a project or corridor; and
- Impact on affordability and accessibility, including the supply of affordable housing units, household transportation costs, or proportion of low- and very-low income households within a 30-minute transit commute of major employment centers.

WILMAPCO produced a Newark Train Station Feasibility Study in July 2010. The study was guided by the following objectives, which have been carried through to the proposed Newark Regional Transportation Center Plan:

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

Travel Changes

The development of the NRTC will be a catalyst to improve rail passenger and freight operations, thereby promoting a mode shift for both market sectors. Upon completion of

the project, WILMAPCO will track passenger activity at the station to measure the effectiveness of both rail passenger service increases and the change in land use associated with the former Chrysler site redevelopment. In addition, WILMAPCO will measure and identify the increase in rail freight capacity afforded by the project, and relate that capacity benefit to actual demand and future forecasting activities associated with freight growth for the Delmarva Peninsula.

Economic Development

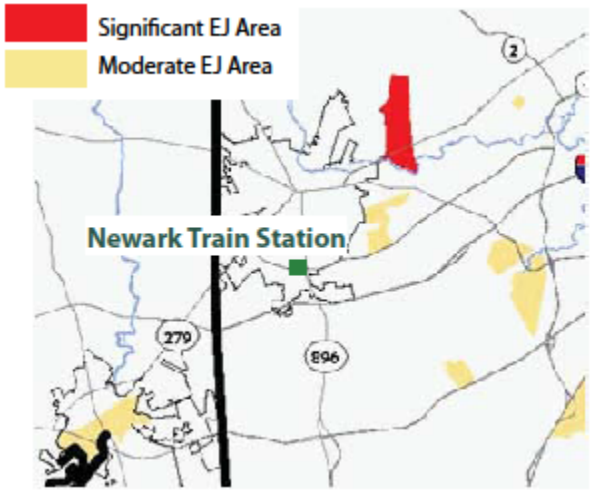
The 272-acre former Chrysler site will be the focal point of economic development associated with the NRTC. However, both the NRTC and the Science and Technology Campus will likely be catalysts for even more transit-oriented development near the project.

To measure the economic development potential, WILMAPCO will create cordons around the proposed NRTC which are associated with travel time—walking, and bicycling. Within these cordons, WILMAPCO will inventory current land use and development, using objective measures such as the number of developed/undeveloped parcels; property values; and the like. This inventory will be the current year, base case. Measuring infill development impacts of the NRTC and subsequent development at the station will be relatively straightforward. First, WILMAPCO will identify known development plans based on contacts with the University of Delaware, the City of Newark, and New Castle County. To add to this objective data, WILMAPCO will draw on empirical data from other transit oriented development in the region, as a predictor of changes in land use and infill development associated with transportation hubs like the proposed Newark Regional Transportation Center. Further, WILMAPCO will track the development around the new UD Science and Technology Campus to determine the economic impact of the developments.

Impact on Affordability and Accessibility

Another key impact of this project is improving transportation choices for low income households. Again, using current conditions as a base case, WILMAPCO will map and quantify the number of low-income and very low-income households within a 30-minute transit commute of Newark; and then forecast accessibility benefits to these households using a 30-year forecast horizon. The forecast will include housing development associated with the Science and Technology Campus. The figure below depicts the environmental justice populations that are located in the vicinity of the station.

Environmental Justice Populations Near the Newark Train Station



Source: WILMAPCO Environmental Justice Report 2009

D) Job Creation And Economic Stimulus

The NRTC is expected to create near-term economic benefits for the State of Delaware. In the short term, Delaware's economic benefits from the project would be driven by an increase in construction spending in the region. These project expenditures would also generate a short-term increase in demand for engineering and technical services, as well as construction-related labor and materials.

This analysis utilizes the Construction Impact Module, an input-output modeling framework and uses, multipliers from MIG Inc. who are the developers of IMPLAN[3], for this analysis national level data was chosen.

The multipliers estimate two types of impacts:

- **Direct/Indirect Impacts**: Direct impacts represent new spending, hiring, and production by civil engineering construction companies to accommodate the demand for resources in order to complete the project. Indirect impacts result from the quantity of inter-industry purchases necessary to support the increase in production from the construction industry experiencing new demand for its goods and services. All industries that produce goods and services consumed by the construction industry will also increase production and, if necessary, hire new workers to meet the additional demand. The level of inter-industry trade within the area will determine the size of the indirect impact.
- **Induced Impacts:** Induced impacts stem from the re-spending of wages earned by workers benefitting from the direct and indirect activity within area. For example, if an increase in demand leads to new employment and earnings in a set of industries,

[3] http://implan.com/V4/Index.php

workers in these industries will spend some proportion of their increased earnings at local retail shops, restaurants, and other places of commerce, which would further stimulate economic activity.

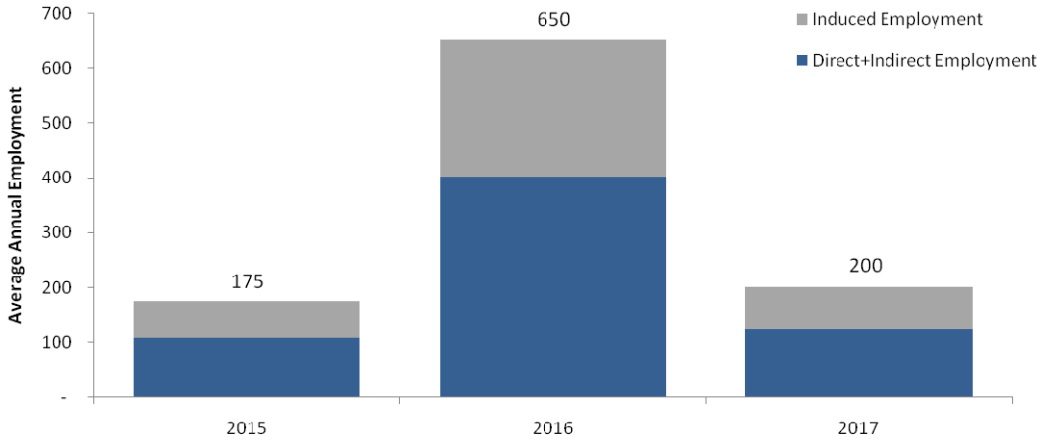
The results of the short term economic impacts are shown below:

Summary of near-term economic impacts resulting from the project.

Direct/Indirect Impacts	
Average Annual Employment	211
Earnings (2011 $)	$31,493,748
Output (2011 $)	$74,926,059
Induced Impacts	
Employment	131
Earnings (2011 $)	$19,557,512
Output (2011 $)	$46,528,831
Total Impacts	
Employment	342
Earnings (2011 $)	$51,051,260
Output (2011 $)	$121,454,890

Beginning in 2013, the project is expected to generate economic benefits for the region. An estimated average of 342 jobs will be created annually by the project, including an average of 211 direct and indirect jobs per year. The graphic below shows the profile of annual employment generated by the project's expenditures.

Annual Employment per Year During Construction

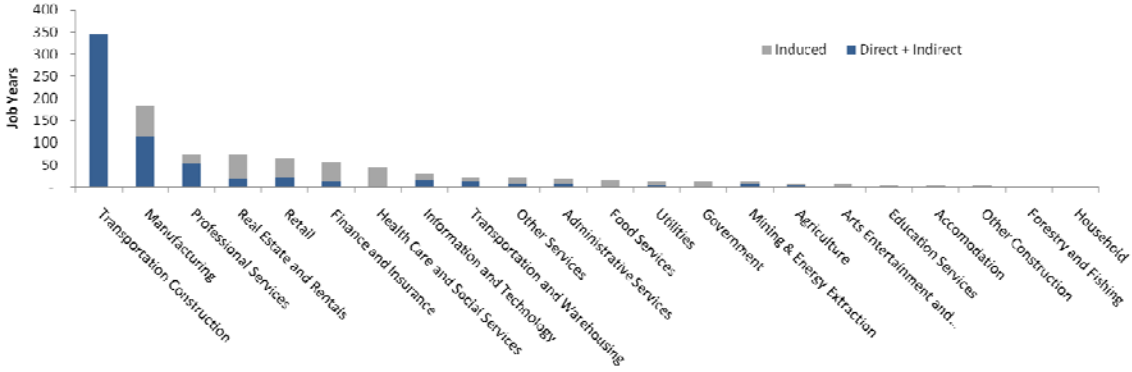


In total, the project is projected to create 1,026 person years of employment, including 633 direct and indirect job years.

The graphic below shows the breakdown of jobs created by industry and type of impact. As expected, the civil engineering construction industry is estimated to receive the

largest increase in jobs from the project (346 job years), almost all of which are direct jobs created. The other industries that will see the largest number of jobs created include manufacturing (183 job years) professional services (76 job years), real estate and rentals (75 job years), retail (67 job years), and finance and insurance (57 job years).

Breakdown of Job Creation by Industry and Type of Impact

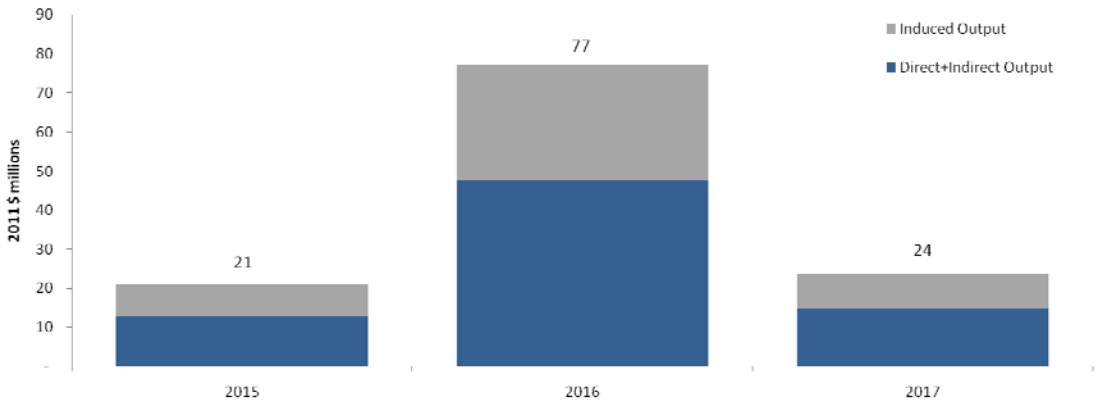


It is also important to consider the quality of the jobs that would be created by the project, which can be measured by the average level of compensation. The average job generated by this project would receive compensation around $49,770/year, which is above the 2009 average US per capita income of $28,368 (2011$) and well above the states's 2009 per capita income of $30,355 (2011 $).[4] This indicates that the project will help stimulate the regional economy.

The amount of short-term economic activity generated by the project is shown below. In total, the project would generate $121 million in real economic output (measured in 2011 dollars), with $21 million dollars of economic output generated in 2015, and $77 million generated in 2016. The remaining $24 million of economic output would be generated in 2017.

[4] http://quickfacts.census.gov/qfd/states/00000.html
http://quickfacts.census.gov/qfd/states/10000.html

Breakdown of Statewide Economic Output Generated by Contract



E) Innovation

The project sponsors intend to deliver this project under tight deadlines, using procurement methods which are novel for the State of Delaware. Specifically, DelDOT will meet its aggressive project schedule by utilizing the Construction Manager/General Contractor (CM/GC) procurement method, as allowed by Special Experimental Project (SEP) 14 – Innovative Contracting.

DelDOT will engage a construction manager and a designer as a team during project development, to gain input on constructability and other cost savings measures. At 60% to 90% design completion, DelDOT and the construction manager will negotiate a 'guaranteed maximum price' for the construction of the project based on the defined scope and schedule. If this price is acceptable to both parties, DelDOT will execute a contract for construction services, and the construction manager will become the general contractor. The CM/GC process is fairly common for Federal Transit Administration projects, but less common with state DOTs.

Additionally, WILMAPCO is coordinating with FTA as part of their Innovative Project Delivery Program to develop other options which will aid in completing the project as scheduled.

F) Partnership

The NRTC will provide the catalyst for the development of the Science and Technology Campus, at its heart, an effort at policy coordination which seeks synergies in current and future investments in the area (both public and private). In brief, the following parties have investment plans in place:

- The Newark bottleneck is NS's highest priority project in Delaware, and NS is an active party to discussions on harmonizing passenger and freight operation;

- MARC plans to extend commuter rail service to Newark by 2020;

- The project is listed in WILMAPCO's long range plan;
- The project is listed in the DelDOT's State Rail Plan; and
- The University of Delaware has a multi-year capital program underway which includes the former Chrysler site.

A TIGER IV grant to provide financial assistance for this project would be perfectly in keeping with federal efforts to advance, coordinate and leverage investment from public and private sources and build upon the engineering and environmental efforts initiated under TIGER II. Letters of support for this effort from the other partners in the project are provided in the Appendices to this application.

PROJECT READINESS

A) Project Schedule

The following table presents a traditional project schedule under a design-bid-build project implementation process for the Newark Station Safety and Operational Improvement Project. WILMAPCO and DelDOT understand the requirement for TIGER IV projects to be ready for construction by July 1, 2013. As such, the agencies are committed to making that happen by using alternative delivery methods to meet required TIGER IV timelines.

The project limits are defined by the Amtrak NEC, the NS Newark freight yard and the UD Science and Technology campus. Although no additional ROW will be needed for the project, there will be movement of property between the State of Delaware, UD and NS. UD has indicated that additional land needs for the station parking and the building will be part of its package of support for the project, in addition to the pledged funding match.

Project Schedule

Milestone	Date
Preliminary Engineering Complete	February 2013
Environmental Approval	May 2013
Final Design Complete	March 2014
Right of Way Acquisition	January 2014
Construction Begins	July 2014
Project Completion	June 2016

B) Environmental Approvals

The environmental documentation for this project is currently underway and is expected to be completed at the end of 2012, with the record of decision (ROD) and finding of no

significant impact (FONSI) expected to be received by May 2013. It is expected design will occur concurrently with the environmental process, such that bidding documents can be prepared upon receipt of the FONSI and construction can begin in July 2014.

C) Legislative Approvals

The State of Delaware has committed the necessary Capital Transportation Funds to the project. As such, these funds have been appropriated as a result of legislative action approving budgets for those funds.

D) State And Local Planning

The development of the Newark Regional Transportation Center and surrounding areas and infrastructure, and thus the Phase 1 Station Improvement Project, are included as a part of several state and local plans. These plans include the WILMAPCO's 2040 Transportation Plan, the New Castle County Comprehensive Development Plan, and the City of Newark Comprehensive Plan. WILMAPCO completed a planning feasibility study specifically related to the Newark Train Station in July 2010 and is currently undertaking preliminary engineering and environmental documentation efforts for the NRTC. The current efforts are partially funded with a TIGER II grant and are in partnership with the State of Delaware, New Castle County, City of Newark, the University of Delaware, and Norfolk Southern.

E) Technical Feasibility

WILMAPCO is currently in the process of obtaining the required environmental approvals and completing preliminary engineering (30% design) for the Newark Station Safety and Operational Improvement Project. As previously stated, both WILMAPCO and DelDOT understand the need for projects to be "shovel ready" by July 1, 2013 to be in compliance with the TIGER IV grant funding requirements. As such, both agencies are committed to advancing the project as quickly as possible and exploring all possible project delivery methods, such as design-build and construction management at risk to ensure the project meets prescribed implementation deadlines.

F) Financial Feasibility

WILMAPCO will be the grant administrator for this project, with DelDOT/DTC implementing the project. Both of these entities have received numerous federal grants and are experienced in dealing with the requirements associated with the receipt of such funds. Several other public and private partners have committed to providing funding for the project. These parties currently include the City of Newark, New Castle County, and the University of Delaware. In addition, private entities such as Norfolk Southern and the University of Delaware may be providing financial contribution in the form of land required for the project. Letters of funding commitment for the project are provided in the Appendices.

FEDERAL WAGE RATE CERTIFICATION

See Appendix

An application must include a certification signed by the applicant stating that it will comply with the requirements of subchapter IV of Chapter 31 of title 40, United States Code as required by the FY 2010 Appropriations Act.

CHANGES FROM PRE-APPLICATION

There has been a change to the information submitted in the TIGER IV Grant pre-application. After discussion with the freight provider, Norfolk Southern Corporation (NS), it was determined that more time was needed to develop an integrated plan to accommodate the various uses on the property and to determine additional levels of to be made. The cost estimate has been revised downward to include just the core project – the rail station and related amenities – and some basic track work to minimize impacts to the freight operations. The total project cost has been scaled back from $42,900,000 to $26,000,000. NS has agreed to work with the stakeholders to develop an integrated plan over the next several months. They have also provided a letter of support for the project (included in the Appendix). Correspondingly, the amount of TIGER funds requested in this application has been lowered from $15,000,000 to $10,000,000, which changes the ratio slightly to 38% of the total project cost.