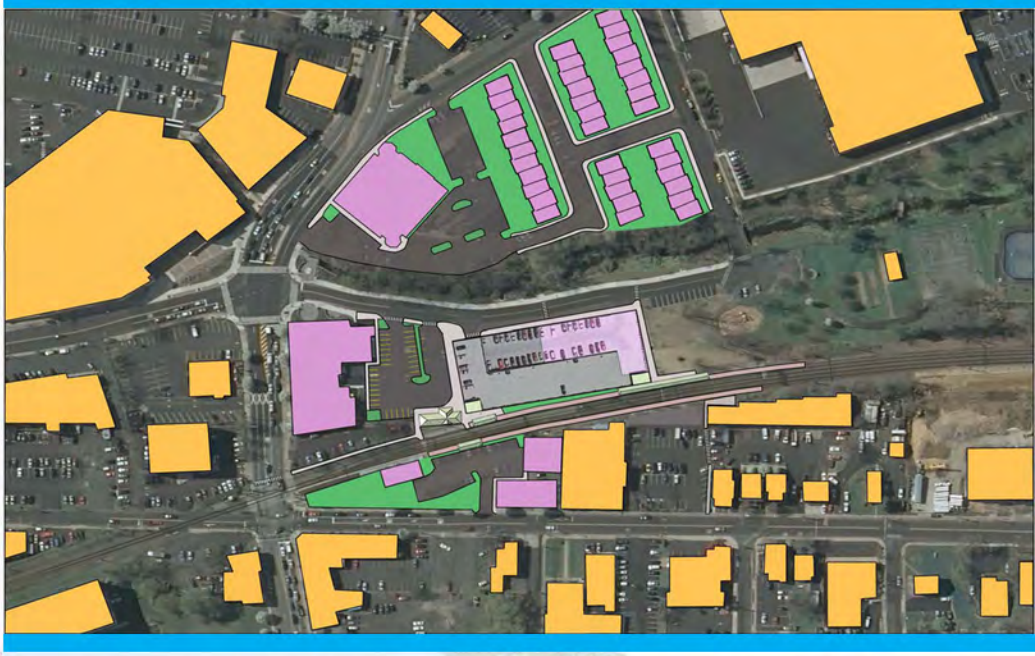
Willow Grove Train Station

RELOCATION FEASIBILITY STUDY

A Catalyst for Sustainable Transit Oriented Development



FINAL REPORT

July 2012

Baker

4WARD PLANNING

Prepared for:

Upper Moreland Township

In Partnership with:

DVRPC **SEPTA** **Montgomery County**

ACKNOWLEDGEMENTS

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Study Purpose

The purpose of Willow Grove Train Station Relocation Feasibility Study was to determine whether relocation of the Willow Grove Station is a financially and physically feasible strategy to spur revitalization and redevelopment of the Willow Grove Town Center. In addition to supporting new development, the study sought to find ways to support construction of needed infrastructure improvements including structured parking to serve the train station and surrounding businesses, intersection improvements to reduce traffic delays and improved safety and station access.

To understand the opportunities, the study first identified market demand for new development in Willow Grove, and then sought to understand whether a relocated station has the potential to significantly affect development market potential for the study area. As a part of this work, the study explored the potential costs and benefits of station improvement/relocation options at:

- Current station location
- North of the current station along Davisville Road adjacent to Mineral Avenue
- South of the current station along Davisville Road between York and Moreland Road

In addition to identifying development opportunities, the study considered the potential for each location to contribute to improvements to transit and other infrastructure in the study area. Issues considered included potential to increase transit ridership, support development of structured station parking, reduce traffic delays, provide streetscape enhancements, and improve safety for vehicular and pedestrian traffic.

Community Feedback

The participation of the Willow Grove community in the planning process, including commuters, neighbors, developers, and other stakeholders, has been essential in defining this study process. The study was overseen by the Upper Moreland Revitalization Task Force, who guided the consulting team's work, and hosted a series of three community workshops. Public feedback indicated considerable concern over the traffic conflicts created by stopped trains at the current station., and fears that traffic conflicts would be worsened by moving the train station south on Davisville Rd. This input ultimately resulted in the expansion of the study scope to investigate station locations north of the current station to reduce such conflicts. Other key community concerns included project cost, impacts to adjacent businesses and Veterans' Memorial Park, and emergency access.

Key Findings

Market Opportunities & Development Costs

The market analysis found limited demand for new commercial development in the study area over the short- to medium-term. The office and retail markets for the study area – and Montgomery County in general – are particularly weak, though multi-family residential offers both immediate and longer term opportunities for the study area.

Analysis indicated that Willow Grove has opportunities for smaller-scale and more "patient" – longer-term, built- in phases – in other words, redevelopment over a longer time horizon. Moving the train station from its current site does not free up significant or prime developable land, and relocation to a new site requires additional public investment beyond what could be supported by even larger scale development. Previous large scale development proposals advanced by the private sector for Willow Grove have indicated that with or without a new train station, such projects will require public subsidy.

High development costs are a critical challenge for new development in Willow Grove. Increased development intensities will require structured parking (parking garage), which drives up development costs. A structured space costs seven to ten times as much as surface parking. Property acquisition and preparation costs are also significant in Willow Grove. Sites must typically be assembled from multiple properties, existing development demolished, and infrastructure upgraded before construction can begin. The presence of the train station does not increase development returns to the point that the higher development costs can be offset.

Impact of Station Location

Willow Grove remains a desirable development opportunity and transit destination; however, the study revealed that the location of the train station within the study area only marginally affects the underlying market conditions for additional retail or residential development demand in Willow Grove. Moving the station would not free up significant or prime developable land, and the benefit to adjacent development (higher density or rents) or improved train operation (speed or ridership), gained by moving the station, does not significantly alter the desirability of Willow Grove as a development location or transit destination. As a result of these factors, the market does not currently support station relocation without significant local participation by either directly providing Township funds or seeking additional (county, state, federal) funding sources. As market conditions change in the future, the study provides cost data needed for the Township and its public and private partners to be able to respond efficiently to opportunities resulting from improved economic conditions.

In terms of transit and traffic operations, each of the proposed station locations faces some operating challenges. The proposed northern location reduces traffic conflicts between stopped trains and traffic on York Road, but limits pedestrian access to the station. The proposed southern location would increase traffic conflicts by affecting traffic on both York and Moreland Roads when

a train is in the station. The current station location would continue to affect traffic on York Road when a train is stopped. However, over time, technological improvements including new signals, rail cars, train controls, and the installation of high-level platforms will improve train station operations and reduce traffic conflicts regardless of location.

Conclusions and Recommendations

The concepts advanced and tested in this study identified that the Willow Grove Train Station is an asset in achieving revitalization in Upper Moreland Township. However, neither station relocation nor reinvestment in the station will be an adequate catalyst to generate market support for major redevelopment at this time, given current economic and market conditions. Still, there absolutely remains a public benefit to pursuing revitalization in and around this vital community asset. Investments over time, paired with stronger markets and/or specific development opportunities, could make it reasonable to revisit the question of station location sometime in the future.

The paragraphs below outline key issues to consider and steps to undertake to facilitate revitalization in Willow Grove.

Public Investment Required

The study's fiscal analysis has demonstrated that short-and mid-term market opportunities will not create adequate returns on investment to support large-scale redevelopment in Willow Grove without significant public subsidies. Further, the tax base contributions of the largely residential development scenarios tested in this study do not result in significant net increases in tax revenues to the Township. The new tax revenues received are about the same as the costs the Township would incur to serve the new development. Given this situation it is clear that near or mid-term development opportunities cannot be expected to subsidize the costs of train station relocation.

This finding does not imply that the pursuit of train station improvements and incremental enhancement of the Willow Grove core is not possible. It merely indicates that public funds will be needed to cover the costs of public benefits, such as new parking and improved parking management, enhanced streetscapes, and new rail infrastructure. These investments will improve the quality of life and character of the Willow Grove core; however, they cannot guarantee that private investment will follow or that it can be accomplished on the basis of short-term fiscal merits alone.

Encourage Incremental Investment

Local and coordinated investment commitments will be required to make any sizeable redevelopment a reality in Upper Moreland Township. However, many small scale projects are likely to be implemented over the next five to 10 years, making important incremental investments in Willow Grove. The Township should continue to work with property owners and developers of these projects to ensure that they build upon one another in a manner that is consistent with Willow Grove revitalization and redevelopment goals and objectives. Absent a common theme, disjointed initiatives will result in uncertainty among potential private and public investment partners.

Facilitate Station Improvements

For now, it appears that the current station location is the best for Willow Grove and Upper Moreland Township. SEPTA's planned station improvements will make the station function better for both SEPTA and the Township. Upper Moreland should continue to work with SEPTA to implement planned station improvements including the installation of high-level platforms, new signals, and train controls in the existing station location to improve the appearance and operation of the station. The Township should also remain an active advocate for double-tracking the Warminster Line, which can ultimately make it possible to provide half-hour train service that will increase transit access to Willow Grove. The Township should also continue to work with SEPTA to integrate the agency into an overall parking solution for Willow Grove.

Aggressive Action Required to Leverage Larger Investment

Moving beyond incremental development, infrastructure, and planned transit improvements, the Township will need to take an aggressive approach and active role in the overall redevelopment of the Willow Grove core. To be successful, public and private interests must work in partnership to assemble complex funding strategies that will use multiple layers of private, local, state and federal sources and programs. The Township and its public partners will need to recognize that their contributions are necessary to support transformative change, particularly for the infrastructure needed to make significant redevelopment feasible, including investments in parking garages, streetscapes, roadway, and other infrastructure.

While private investors are willing to participate in public-private partnerships to realize redevelopment visions, the government's participation remains essential to attracting private sector investors at manageable levels of risk. The many competing interests (private property owners, developers, SEPTA, other public agencies) mean that the Township must remain actively engaged to ensure that future projects meet local needs and offer an acceptable return on local investment. This will require the Township to collaborate on complex fiscal and project delivery solutions. Upper Moreland Township decision-makers will need to act as a unifying force among the varied interests and proactively engage public partners (county, state, federal) to match and maximize the local public investments required.

1. INTRODUCTION

Study Background

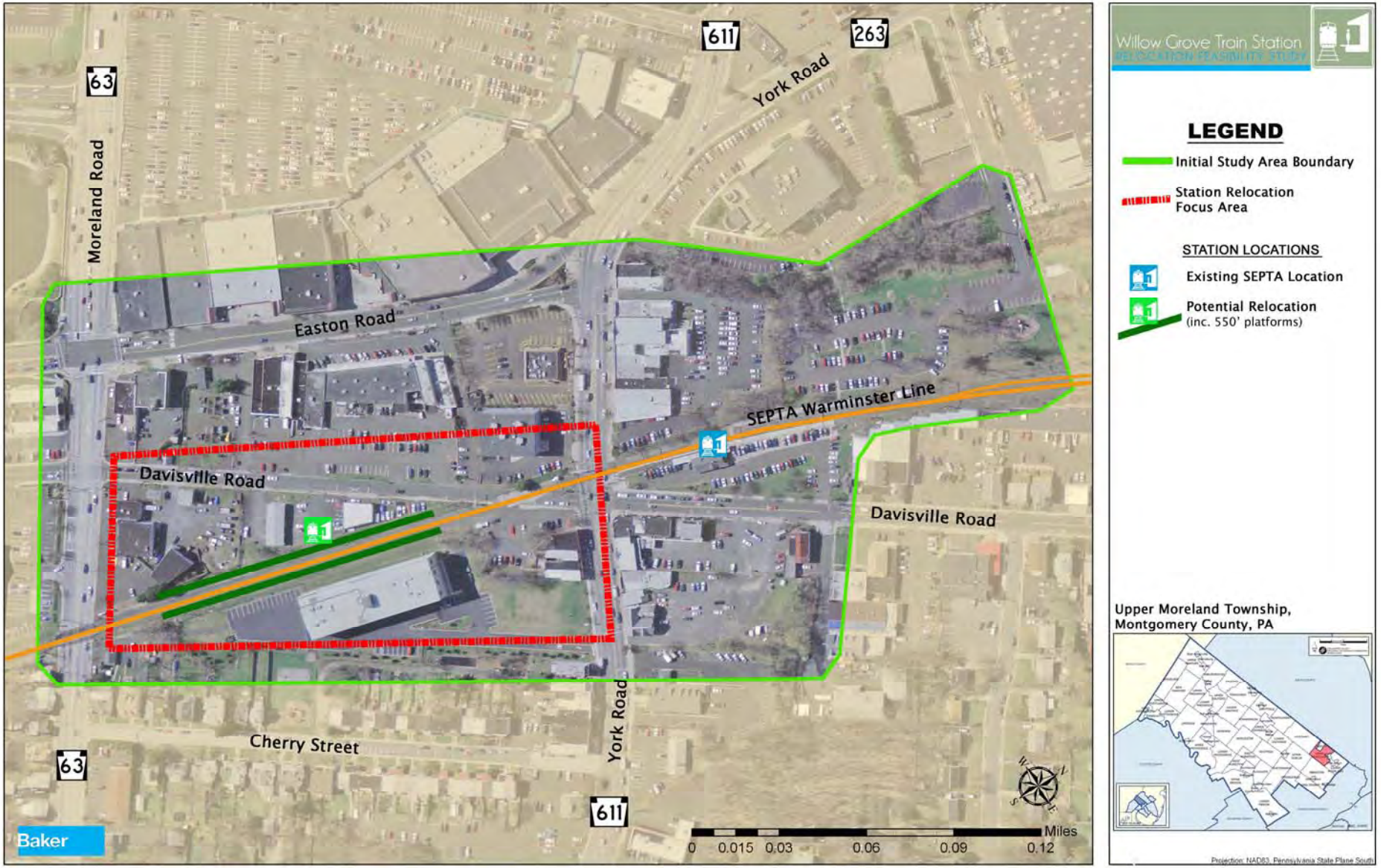
In November 2009, Upper Moreland Township submitted a Transportation and Community Development Initiative[1] (TCDI) grant application to the Delaware Valley Regional Planning Commission (DVRPC). This TCDI application was the culmination of previous study efforts and initiatives to promote mixed use, and transit-oriented redevelopment within the town center area of Willow Grove. Upon approval of the grant application and contribution of municipal matching funds, Upper Moreland Township received bids for consultant services in September 2010 and by March 2011 selected Michael Baker Jr., Inc. and 4Ward Planning, LLC to conduct this current station relocation feasibility assessment. The consultants were charged[2] to not only explore the possible relocation of the Willow Grove SEPTA rail station into the South Davisville Block as identified in the TCDI application (see Exhibit 1-1), but to allow the Township, Montgomery County and SEPTA to determine whether or not any such station relocation is fiscally and physically feasible and if so, the steps needed to make the relocation project happen. The Township Redevelopment Coordinator (URS Corporation) and the Revitalization Task Force, a committee appointed by the Upper Moreland Board of Commissioners as part of Montgomery County's Economic Development plan, provided oversight for this study.

In an ongoing effort to revitalize sections of Upper Moreland Township, the 16-member Revitalization Task Force has a broader objective of working with the Montgomery County Planning Commission to identify areas that could best benefit from county revitalization funding. The concurrent development of the Upper Moreland Revitalization Plan (2012) is a product of this effort, and this new study now incorporates a much larger area for revitalization beyond the township's traditional "downtown", with expansion consisting mostly of land on the western side of the SEPTA Line. This Revitalization Plan update and the Willow Grove Train Station Relocation Study are interrelated, and the Revitalization Task Force input along with direct project team outreach to Montgomery County served to coordinate the aspects of both studies.

[1] The Transportation and Community Development Initiative (TCDI) is a grant program of the DVRPC that supports local development and redevelopment efforts in qualifying municipalities of the Delaware Valley. Begun in 2002 to reverse the trends of disinvestment and decline in many of the region's core cities and developed communities, TCDI provides a mechanism for municipalities to undertake locally-directed actions to improve their communities, which in turn implements their local and county comprehensive plans and supports the goals and vision of DVRPC's long-range land use and transportation plan, Connections 2035.

[2] Upper Moreland Township Request for Proposals – Willow Grove Station Relocation Feasibility Study, revised August 19, 2010.

Exhibit 1-1: Initial Study Area and Station Relocation Focus Area

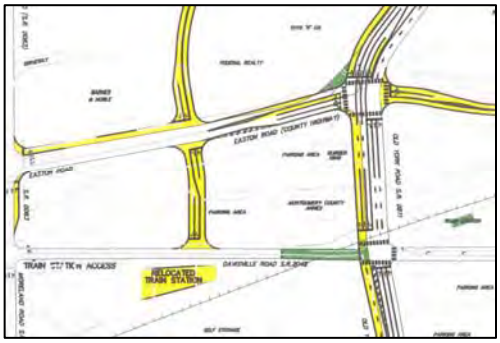


Past studies and developer-led proposals had considered various reconfigurations of Willow Grove, with some assuming the assembly of privately held parcels or the re-alignment of existing roads. However, the physical feasibility, impacts to rail/traffic operations and fiscal requirements (both private and public) to fund necessary rail station related infrastructure had not previously been explored in significant detail. Prior studies, both publicly funded and initiated by private developers, have considered redevelopment scenarios with the Willow Grove Station remaining in place, or illustrated station relocation and new trackwork concepts. Two examples below include:

- The 2003 Willow Grove Revitalization Plan noted that "the current location of the SEPTA Willow Grove Station could serve as an asset to the township's redevelopment, given aesthetic and circulation improvements and better pedestrian connections to downtown destinations."

- The 2007 Willow Grove Redevelopment Area Vehicular and Pedestrian Traffic Improvement Feasibility Study illustrated an option for relocating the train station approximately 800 feet inbound toward Center City Philadelphia (South Davisville Block), but noted that "Depending on the exact location of the station, moving the station south of S.R. 611 may result in…longer [traffic] stoppage than under existing conditions."

2003 Willow Grove Revitalization Plan – Phase 1: Ehrenpfort Block and Existing Station



2007 Willow Grove Redevelopment Area Vehicular and Pedestrian Traffic Improvement Feasibility Study – Option 5: Train Station Relocation

The major highway arteries of Easton Road and Old York Road (SR 611) bisect the commercial district of Willow Grove, and while they represent an opportunity to capture economic activity from vehicular traffic, congestion and impacts from rail grade-crossing activation are lingering concerns. Exhibit 1-2 provides an overview of relevant proposals and planning efforts prior to the inception of this study.

Exhibit 1-2: Previous Planning Studies

Year	Plan/Study	Lead Preparer	Willow Grove SEPTA Station Location Determination	
			Keep at Existing	Explore Relocation
1992	Core Area Study	McCloskey & Faber P.C.	✓	
1999	Revitalization Plan	Carter van Dyke	✓	
2003	Willow Grove Revitalization & Redevelopment Area Plan	KSK, Glatting Jackson, Urban Partners	✓	
2005	"New Main Street" parallel to York Road	Develcom, ARC Properties		✓ (north)
2007	Town Square – Preliminary Sketch Development Plan	Federal Realty	✓ (Phase I only)	✓ (south)
2007	Willow Grove Redevelopment Area Vehicular and Pedestrian Traffic Improvement Feasibility Study	McMahon	✓	✓ (south)
2008	611/263 Corridor Study	DVRPC		✓ (south)
2009	Former Toys R Us Site at Willow Grove Shopping Center	Federal Realty, Dewey Commercial	N/A*	N/A*
2012	Upper Moreland Revitalization Plan (2012)	Montgomery County	N/A*	N/A*
2012	Willow Grove Train Station Relocation Feasibility Study	Michael Baker, Jr. Inc., 4Ward Planning	✓	✓
* A recommended train station location was not a component of this plan/study				

The Goals Guiding the Study

Goals represent broad statements about long-term desired outcomes that shaped the analysis conducted by this study into conformity with local priorities. Study goals were assembled from multiple sources at the outset of this study. These sources included: 1) Prior revitalization planning studies, 2) SEPTA input solicited in response to station relocation proposals, 3) input from Revitalization Task Force members, and 4) community feedback.

Previous Planning Studies

The review of previously established community goals assures that any newly envisioned rail station and redevelopment concepts are consistent with the preferred future state of Willow Grove as determined through a public and open process. The 1999 revitalization study and the subsequent

2003 study conducted workshops and refined overarching goals based upon stakeholder and public input. Exhibit 1-3 lists these goals within five respective thematic categories.

Exhibit 1-3: Overarching Willow Grove Revitalization Goals Applicable to this Study

Economic Development Goals
Encourage mixed-use development
Discourage isolated "big box" development
Create incentives for the private sector to implement redevelopment scenarios
Provide for an economically viable business community

Housing Goals
Preserve adjacent residential neighborhoods
Discourage cut-through traffic in residential neighborhoods
Improve pedestrian connections to the town center
Discourage land uses that conflict with adjacent residences

Transportation Goals
Make the town center pedestrian friendly
Make the town center transit friendly
Improve vehicular circulation
Create more efficient parking facilities

Open Space Goals
Connect Memorial Park to the town center
Provide additional green space and park areas

Community Legacy Goals
Encourage architectural continuity
Develop a theme that relates to the history of Willow Grove

Revitalization Task Force Input

To establish and update goals specific to the Revitalization Task Force, a questionnaire card was completed by each member in attendance at the initial study meeting on March 23rd, 2011. The feedback received was varied, but the highest number of comments focused on the goal to address traffic congestion (10 out of 19 participants). Specifically, Task Force members detailed that these traffic impacts resulting from SEPTA trains approaching the current Willow Grove Station, activating the at-grade crossing gates, and subsequent interruptions to traffic flow. A compilation of these responses is provided in Exhibit 1-4. For more detail on the role and guidance provided by the Revitalization Task Force, as well as other comments received from outreach to the general public solicited throughout this study, see Chapter 2 - Public Involvement of this report.

Exhibit 1-4. Revitalization Task Force Goal Survey at Beginning of Study

What is your goal for participating in this project?*	Number of Responses**
Address traffic flow issues	10
Create a destination ("main street") in Willow Grove	5
Address building vacancies	4
Provide improved SEPTA rail service to Willow Grove	4
Provide a forward-looking Transit-Oriented Development plan	3
Make Willow Grove more walkable	3
Provide an opening [physical space] for more development	2
Address parking	2
Show Upper Moreland's willingness to pursue revitalization	2
Get something done in the short-term	2
Generate tax revenue	1
Maximize the value of township resources	1
Better cooperation among all parties	1
Secure public funding/SEPTA interest	1
Protect businesses	1
* The survey presented this as an open-ended question; some statements have therefore been generalized ** Multiple goals were stated by some participants in their response.	

SEPTA Input

In 2007, through discussions specifically related to Upper Moreland Township revitalization proposals, SEPTA indicated its goals as they relate to a possible relocation of the existing Willow Grove Station. These goals recognize that an overall improvement in the number and frequency of trains serving Willow Grove, regardless of the scale of development proposed, is limited by the current single track condition along the majority of the Warminster Line (explained further on pages 7-9 of this Chapter).

SEPTA goals include:

- **Preserve limited capital funds** – A continuing concern is the reduction in available funding through the Pennsylvania Legislature's Act 44 Transportation allocation, resulting in SEPTA's annual capital budget being cut by 25 percent ($110 million) from what had been previously planned, beginning in fiscal year 2011[9].

[9] Funding Outlook – SEPTA Fiscal Year 2012 Capital Budget and Fiscal Year 2012-2013 Capital Program Proposal

- **Reduce train travel times** – Consistent with "speed the trip" initiatives, which include installation of high-level platforms, running more express trains, or closing underutilized stations with no parking or bus connections.

- **Maintain station identity** – With expressed willingness to involve a commercial enterprise in partnership with construction of new facilities.

- **Increase commuter parking spaces** – Abundant parking correlates to ridership growth along commuter rail lines, and the Willow Grove Station currently features only 190 parking spaces for the estimated 491 daily passenger boardings.

- **Improve safety and accessibility** – Including Americans with Disabilities Act (ADA) compliant access onto platforms and rail vehicles.

- **Hold harmless future plans and maintenance obligations** – Any new station facility proposals should not preclude the future expansion of double track through the station area and SEPTA would prefer not to maintain and operate a parking garage.

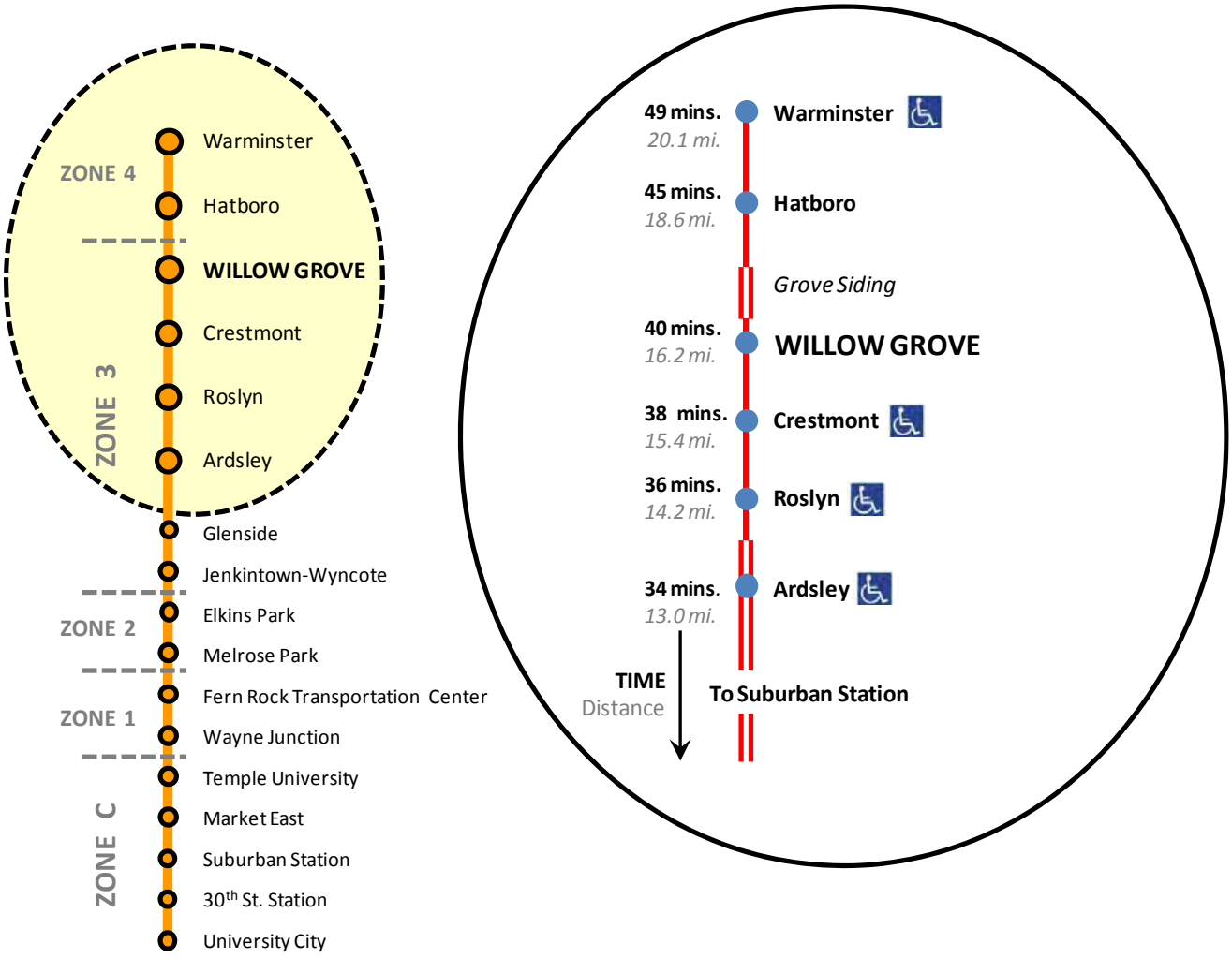
Other Considerations

Desired community goals were also inferred from other sources, such as prevailing zoning, Tax Increment Financing guidelines, and the concurrent update of the Upper Moreland Revitalization Plan (2012). Furthermore, the implicit goal to preserve public resources and limit public expenditure only to the extent justifiable by the rate of return in private investment encompasses all other aspects of establishing study goals. These goals all contribute to shaping specific elements of the rail station relocation concepts envisioned in the subsequent sections of this report, and are reflected in strategies that sought to reduce land acquisition costs, economize overall public infrastructure investments, and optimize the scope of redevelopment initiatives.

An Introduction to SEPTA's Warminster Line Service

The Warminster Line features 17 stops, across four fare zones (see Exhibit 1-5). The Warminster Line becomes a single-track branch after the Ardsley Station, with only one intermediate location (Grove Siding) available to allow trains to pass prior to reaching Warminster. The travel time, distance, and ADA accessibility of the stations on this segment of the Warminster Line are also depicted in Exhibit 1-5. The Willow Grove Station is currently not ADA accessible, and the absence of double track along this portion of the line will be addressed by potential station relocation solutions presented later in this report.

Exhibit 1-5: SEPTA Warminster Line Overview and Willow Grove Alignment Detail

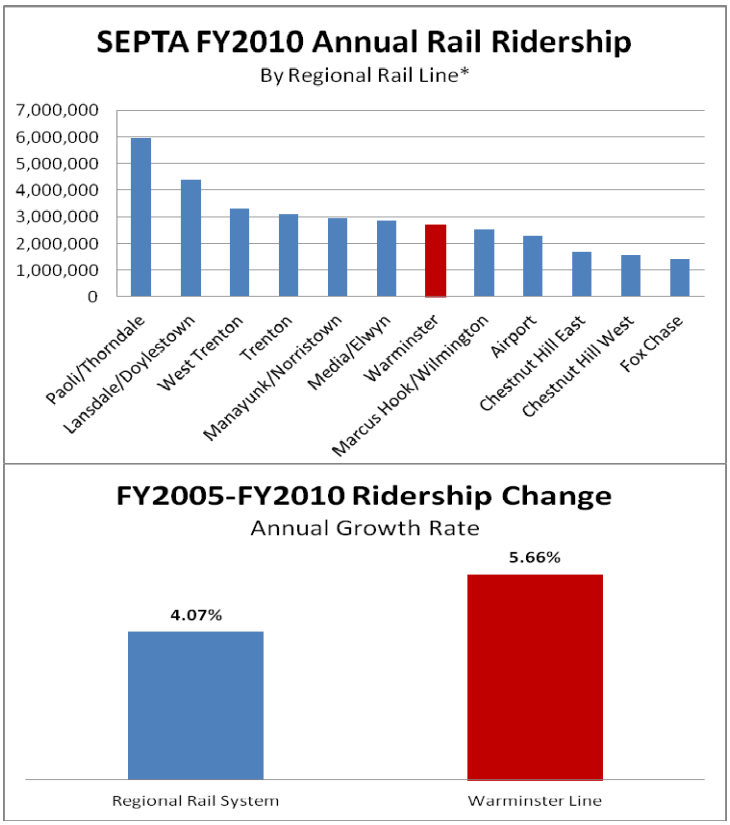


Even though the Warminster Line faces capacity constrains due to single track operations, the service area consists of a portion of the Philadelphia suburbs that is favorable to ridership growth (see Exhibit 1-6). A likely factor contributing to this growth is that no direct limited access auto connections exist to Center City Philadelphia from the area served by the Warminster Line, and the indirect auto routes are highly congested during peak commute times.

During weekday operations, two instances in the late afternoon schedules involve inbound and outbound trains scheduled to pass within two minutes of each other near the Willow Grove Station at Grove Siding. This condition, cited by public input, is a contributing factor in extending traffic delays along Old York Road and Davisville Road in the vicinity of the station. The activation of gates for these at-grade crossings often occurs during passenger loading and unloading of trains, and this is further exacerbated by not having sufficient time to clear traffic backups before activation again by another train. During weekend operations, all inbound and outbound trains are scheduled

to pass within four minutes of each other. See Chapter 3 on traffic impact analysis for additional details on the implications of crossing gate activation resulting from the current and proposed locations for Willow Grove Station operations.

Exhibit 1-6: Warminster Line Ridership



On-time performance of the Warminster Line is approximately 93%[10], which is consistent with the SEPTA system total. Safety precautions on the Warminster Line have been highlighted, with five pedestrians trespassing within the right-of-way and being struck by trains on the line in 2011. Also, a low-speed head-on collision occurred in 2006 between inbound and outbound trains in the vicinity of Crestmont Station.

SEPTA is implementing a Positive Train Control (PTC) system to stop trains that may inadvertently run through red signals. The two PTC project contracts, worth $100 million and covering the entire Regional Rail system, will consume a majority of the SEPTA Capital Budget over the next three years[11].

One final consideration to weigh in the analysis of any changes to the Warminster Line operations is that limited rail freight service (formerly CSX, and now operated by Pennsylvania Northeastern Railroad) for local shippers and interchange with the New Hope and Ivyland Railroad does occur in the overnight hours, passing through Willow Grove to/from Warminster.

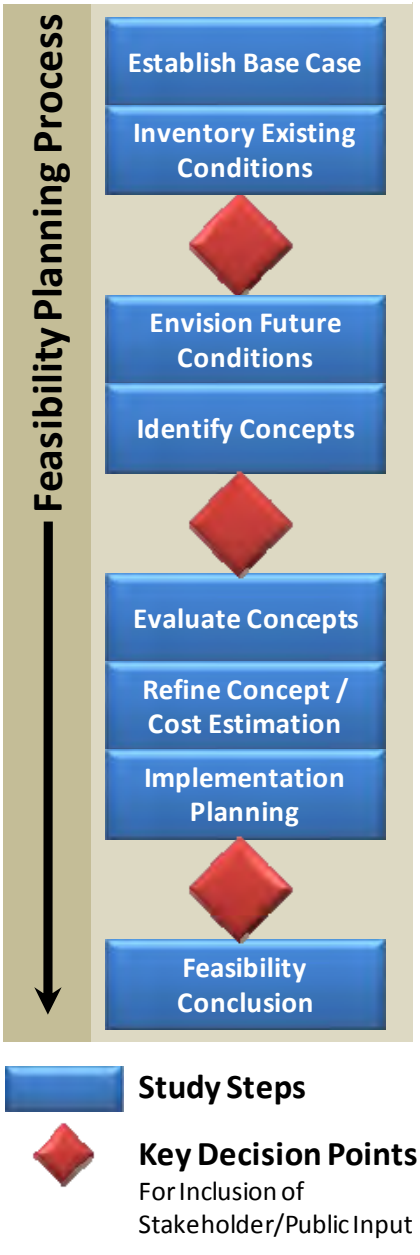
[10] SEPTA Regional Rail on-time performance Fiscal Month of February (1/29/2012-2/25/2019) – www.septa.org

[11] Federally mandated installation deadline of December 31, 2015 – Rail Safety Improvement Act (2008)

Feasibility Study Process

A well-formulated feasibility assessment will organize the analysis of concepts in such a way that decision-makers can understand the implications that direct each step of the process and consider the comparative trade-offs involved in selecting one outcome over another. The ultimate conclusion from a feasibility assessment may be that the optimum concept is not possible to implement. Exhibit 1-7 identifies key decision points that have shaped the direction of the study.

Exhibit 1-7: Feasibility Planning Process



The Willow Grove Station Relocation Feasibility Study began with an initial base case of testing the physical constraints of placing a rail station along the SEPTA right-of-way within a reconfigured Davisville Block as identified in the 2003 Willow Grove Revitalization Plan. With an emphasis on public participation, early in the process consensus was sought regarding the purpose and need of pursuing station relocation. Also, in anticipation of concern regarding the fiscal constraints, the study process sought to minimize the dependence of station relocation upon other unfunded and significant public expenditures (i.e. excessive property acquisition, realignment of roads, etc.) The evaluation process acknowledged that no one station location will be able to completely satisfy all desired outcomes, and this study will illustrate the trade-offs required.

Finally, given the significant infrastructure and property acquisition requirements (previous proposals requested up to $58 million in subsidy[12] without inclusion of rail station investments) the implementation steps of this process will be tailored to determine the lowest cost yet still functional rail station that can support other redevelopment initiatives. The process followed by this study was designed to develop and advance a rail station relocation concept with the best chance for testing feasibility against the economic realities of all parties (SEPTA, developers, Upper Moreland Township).

During the course of this study, the question often arose about which entity (township, developers, SEPTA) takes the lead in this process. The study team recognizes that accommodating the needs of a functional regional rail station at the outset best

[12] 2007 Willow Grove Concept Plan – Phase 1

dictates the other parameters. The reasons for this are two-fold. First, the desired revitalization vision from the township's perspective is ongoing, with an update to the Willow Grove Revitalization Plan initiated after this study began. Secondly, previous developer-led proposals and negotiations do not necessarily represent a public vision or preference, nor did they fully test the costing and functionality of a new rail station. Therefore, since revitalization objectives remain generalized and regional rail operational requirements are more definitive, this study will endeavor to advance the best possible train operations concept first, for testing against other constraints that influence what is truly feasible from a development perspective. This approach does not imply that SEPTA leads the process, only that decisions reached by the township and developers should hinge around proposals that could best benefit from and realistically accommodate the rail service purported to be essential to the transit-oriented development envisioned to come.

Warminster Line Train at Willow Grove

2. PUBLIC INVOLVEMENT

Conducted during the course of this study were a variety of public outreach, steering committee participation, stakeholder engagement, interviews, and presentations seeking community input and feedback. This section presents an overall timeline (see Exhibit 2-1) for these events and then provides additional details on the specific meetings, feedback received, and role of various groups.

Exhibit 2-1: Study Timeline of Outreach Events

Date	Event Type	Primary Agenda Item/Discussion
3/23/2011	Steering Committee Meeting*	Project introduction and anticipated results
6/1/2011	Steering Committee Meeting*	Existing conditions assessment/market analysis
6/23/2011	**PUBLIC MEETING**	**Study introduction, gather feedback on issues and opportunities**
8/26/11	Stakeholder Interviews	Past development proposals/location specific engineering and utilities discussion
9/28/2011	Steering Committee Meeting*	Presentation of station location concepts
10/13/2011	Stakeholder Interviews	Chamber of commerce input/former redevelopment coordinator/war memorial park implications
10/20/2011	Technical Review Meeting	Concept evaluations with SEPTA officials
11/9/2011	**PUBLIC MEETING**	**Gather feedback on station concepts/outline the evaluation process**
12/9/2011	Public Partners Meeting	Update meeting with Montgomery County, SEPTA and DVRPC officials
1/12 – 1/19/2011	Stakeholder Interviews	Outreach and information gathering from local developers
1/31/2011	Warminster TOD Tour	Study team tour of nearby transit-oriented development currently under construction
2/2/2011	Stakeholder Interviews	Station redevelopment role for Kremp Florist (adjacent property owner)
2/29/2012	Steering Committee Meeting*	Refined station concept presentation
3/5/2012	Technical Review Meeting	Presentation of station design elements, costing, and implementation with SEPTA, Montgomery County and DVRPC officials.
3/21/2012	War Memorial Board Presentation	Discussion regarding proximity/impacts of station development to the existing park.
4/17/2012	Steering Committee Meeting	Review of draft final report and financial impact/feasibility assessment
5/9/2012	**PUBLIC MEETING**	**Present study report, gather and address outstanding comments**
* - Steering Committee/Revitalization Task Force Meetings open to members of the general public.		

Revitalization Task Force – Steering Committee Meetings

A 16-member Revitalization Task Force served as the steering committee for the Willow Grove Station Relocation Feasibility Study. Participant backgrounds included architecture practice, business ownership, developers, residents, the Willow Grove Chamber of Commerce, and representatives from both the Upper Moreland Environmental Advisory Council and Historical Commission. The Revitalization Task Force was instrumental in developing the strategy to investigate alternative station locations, following a lack of consensus expressed at the intent of only exploring the South Davisville location as the sole site to pursue potential station relocation.

This strategy included: Determination of the needs and location potential to increase the functionality of a SEPTA Regional Rail station, which would need to be enhanced to accommodate new service in response to redevelopment. Second, recognizing that reducing traffic conflicts (and thereby traffic congestion), improving the pedestrian environment, clarifying site access and ensuring adequate parking are important goals to increase the vitality of Willow Grove and further distinguish the opportunities presented in station relocation areas. This was deemed critical so that concepts and locations that didn't meet basic functionality requirements did not advance further in the study even if they provided marginal benefits in other areas. Ultimately, the Revitalization Task Force guided the study to remain committed to the ultimate goal, namely the testing of station relocation concept with features that also benefit other entities to such an extent that they might be willing to share in the cost of achieving a surrounding transit-oriented redevelopment scenario.

Public Meetings

A total of three (3) meetings were scheduled to solicit feedback and comment from Upper Moreland residents, SEPTA patrons, and the general public. Public meetings were advertised via email, on local blogs such as the Upper Moreland Patch, through Facebook, on the Upper Moreland School District's news network, and with flyers distributed at local businesses and on cars parked at the train station. Summaries of these meetings are presented in this Chapter, with more detailed information on the comments and responses presented in Appendix A-1.

Meeting #1

The first public meeting occurred on June 23, 2011. The meeting drew approximately 100 members of the public. It was conducted in an open-house format, designed to facilitate in-depth discussion on many aspects of the study. Members of the Revitalization Task Force helped staff the various sections alongside with the consultant study team members.

The meeting yielded many comments and discussion points about the study itself and the issues and opportunities presented by relocating the train station. Many meeting participants wondered how the relocation area south of the current train station was selected, stating that they felt moving the train station to help the revitalization process was a worthy reason to move forward, but that only

examining a move to one location was limiting. An online survey, with computer work stations set up during the meeting, allowed participants to provide even more detailed feedback. Participants also had the option of completing the survey via the project website. From survey responses collected (48) there were split opinions among the public between how to accommodate a better pedestrian environment to help the future revitalization of Willow Grove's core yet also address vehicular traffic delays, specifically a desire to introduce railroad crossing improvements.

Meeting #2

The second public meeting occurred on November 8, 2011. Approximately 70 members of the public, local business owners, members of the Revitalization Task Force, and other stakeholders attended the meeting. The meeting ran in two sessions, presentating of alternative locations and concepts for a relocated train station. Attendees had the opportunity to ask questions throughout the presentation; they also were provided pens and sticky notes to place their comments directly on presentation boards which illustrated each concept in detail. This approach allowed for the collection of preferences and concerns that related to all or part of each concept displayed at the meeting. Additionally, since some individuals had overall comments rather than site-specific ones, general feedback forms were also available. General feedback included:

- Traffic continues to be a concern, especially the implication of closure of Davisville Road to Second Alarmers Rescue Squad fire and EMS access.
- Even if relocated, residents want to see a reuse plan for the existing station, feeling this is an important community element, no matter its future use.
- By necessity, concepts showed property acquisitions and participants expressed concern at the future well-being of existing local businesses either forced to move or relocate.
- Even though financial information was not yet compiled, some participants stated that they felt leaving the train station at its current location or moving it north would be less expensive.

Meeting #3

A final presentation, focused on the process and conclusions of the study was held on May 9th 2012. Approximately 45 attendees were recorded for the two presentation and feedback sessions that were held. The presentation was followed by a comment session organized into three (3) topic areas. These areas included Outreach, Station Area Development, and Funding Conclusions. Each station was staffed by a project team member to provide specific detail and receive public comment on these topic areas. Participants were invited to circulate among all three stations in order to assure full interaction and their ability to provide comments and questions for each appropriate topic. Attendees also had additional options to provide feedback. A comment form was distributed at the meeting to provide more specific feedback, and an electronic version of the comment form was made available on the project website. General feedback included:

- Several participants recognized that regardless of the conclusions on feasibility, the study had enabled the community to make informed decisions about revitalization and the train station.
- Traffic and circulation issues continued to dominate the discussion of envisioned station features, with interest expressed in the use of technology to reduce the length of grade-crossing activation at the York Road crossing.
- The funding and feasibility conclusions were generally supported, with several participants stating that they had anticipated the conclusion. Given funding shortfalls, one participant asked if consideration had been made to selling branding or naming rights to the station.

Project Website

This study invited stakeholders and the general public to view materials, presentations and receive updates on a project website. The web page (www.willowgrovestation.com) was established and linked to the Revitalization Task Force webpage of the Upper Moreland Township site. The webpage also became a site for the completion of online surveys, the collection of comments and a resource for providing general information and links to transit-oriented development and other background information.

Technical Review Meetings

At key intervals during the development of concepts and testing of assumptions, the study team held technical meetings to gain valuable insight from SEPTA. The purpose of these meetings was not to get specific agreement from SEPTA on a station design nor a funding commitment, but rather to test the soundness of concepts and station locations that have been gathered through the initial project goals and public feedback to date.

Two (2) technical review meetings were held during the study, with the first meeting's purpose to gather input on the operational and environmental issues that may be associated with a station relocation. The second meeting investigated the specific design elements of a new station concept, as well as providing an opportunity for SEPTA to provide input on the phasing and implementation steps that would need consideration during potential construction and development build-out. Throughout the station development process, design elements from other recently upgraded SEPTA stations (Croydon, Ambler, Langhorne) and unit cost information was collected by the project team, and technical consultation and coordination with key SEPTA staff occurred beyond these meetings alone.

SEPTA reviewers participating in the formal technical reviews represented Engineering, Strategic Planning and Analysis, Long Range Planning, Track Department, Signals, and Real Estate representatives. The testing of various platform configurations, track/infrastructure requirements, and development potential was incorporated into the different concepts developed, enabling SEPTA to comment upon a variety of approaches to station upgrades.

SEPTA participation provided valuable insight into key technical issues, including:

- Understanding of other bottlenecks/limitations to train speed/travel time beyond the Willow Grove study area.
- Placement of high-level platforms in curving versus straight track.
- Evaluation of access and site circulation issues, especially for bus and passenger drop-off
- Parking space need, parking footprint, and anticipated or desired ridership growth along the Warminster Line
- Input on other station location sites as a means to reduce double track requirements and subsequent costs.
- Implications of potentially shifting grade crossing/traffic delays to Moreland Road and mitigation strategies.
- Issues concerning station spacing/consolidation of stations along the Warminster Line

These meetings indicated that the ability to avoid future conflicts at busy grade crossings, especially if train frequency were to increase, is a shared priority. It was further felt that a technical/scheduling solution to the issue of grade crossing delay may prove a valuable component of any new station concept. Other items of note that were raised during these technical reviews were the extremely

limited nature of the SEPTA Capital Budget to fund any of the indicated improvements and the observation that some concepts would hinge upon significant acquisition of surrounding private property, a potential source of issues and delay in the development process. SEPTA was particularly interested in how sufficient parking could be accommodated. Especially regarding structured parking, input received indicated that even if the market today cannot support a privately funded structure, this study should illustrate how a transition from surface to structured parking could be envisioned in the future. Additional details from these two meetings are provided in Appendix A-2.

Public Study Partners

As administrators of the TCDI grant and with involvement with ongoing revitalization initiatives within the community, DVRPC and Montgomery County (MCPC) respectively were engaged throughout the study process and at times during shared meetings, which also included SEPTA, Revitalization Task Force Members and Upper Moreland Township. Two (2) such events were held during the duration of the study.

The first event consisted of an interim briefing in December 2011. Three key items raised during this briefing included:

1) Consider a station design that can accommodate expanded shuttle service, especially in regards to ongoing redevelopment of the former Willow Grove Naval Air Station in Horsham. It was felt that Willow Grove Station could serve as the regional rail gateway to this new development (MCPC).

2) Enhance the focus on development opportunities at the optimum station site, including establishing an implementation and action plan approach for key decision-makers (SEPTA).

3) Station location evaluation criteria should be presented in rank order. Although this isn't a scientific selection process, some factors such as constructability and property control, for example, may prove more important decision factors than aesthetics and walking access (DVRPC).

A second event consisted of a site tour of the Station at Bucks County– a transit-oriented development adjacent to the Warminster Station in January, 2012, facilitated by developers J.G. Petrucci Co. The tour was designed to provide a hands-on review of a representative example of an ongoing redevelopment along the Warminster Line, specifically an apartment style complex with retail component immediately adjacent to an existing station. Officials from Petrucci were available to answer questions about their project as well as discuss the applicability of 'lessons learned' to potential redevelopment in and around the Willow Grove Station.

Additional Stakeholder Interaction

Feedback and active engagement of a wide range of stakeholders was incorporated throughout this study. The list of primary project stakeholders is presented in Exhibit 2-2.

Exhibit 2-2: Study Stakeholders

Stakeholder groups	
Abington Township	Montgomery County Redevelopment Authority
Area Developers	PennDOT
Business Owners	SEPTA
DVRPC	The Partnership TMA of Montgomery County
Greater Willow Grove Chamber of Commerce	Upper Moreland Township
Local Residents	War Memorial Association
Montgomery County Planning Commission (MCPC)	Willow Grove Park Mall (PREIT)

The stakeholders listed participated in the public, revitalization, and technical meetings previously outlined. On occasion, additional interaction was sought by the project team to address specific topics and the direction of the study. The additional interaction followed two approaches. First, meetings were conducted for confirmation of study direction, discussion of strategies, and buy-in from the participating public study partners. Second, at various milestones during the feasibility study process, targeted outreach interviews to assess specific aspects and impacts of concepts, gather and assess developer interest, and coordinate with other ongoing initiatives were conducted.

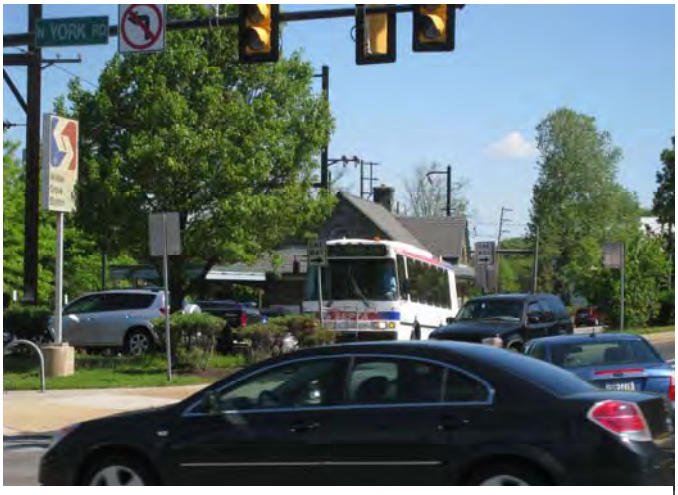
Exhibit 2-3: Individual Interviews Conducted During the Study

Name	Organization
Charles Kremp	Kremp Florist
Roger Myers	Former Chamber Commerce President
Jason Duckworth	Arcadia Land Company
Charles Gallub	Develcom
Ralph Storti	War Memorial Association Board
David Joss	Federal Realty Investment Trust
Greg Rogerson	J.G. Petrucci Company
Arthur Adams	A H Adams & Co.
Carol McCrone	Former Upper Moreland Director of Redevelopment
Erik Garton	Gilmore & Associates (Township Engineer)
Mike Narchowich	Senior Community Planner - Montgomery County
Ashwin Patel	PennDOT

3. WILLOW GROVE CONDITIONS ASSESSMENT

The first study step in determining the feasibility of relocating the Willow Grove SEPTA station was to identify location specific issues and opportunities that would positively or negatively impact rail station operations and the prospects for future adjacent redevelopment. Working with the Revitalization Task Force, the study team prepared an assessment of conditions that corresponded with stated goals in Chapter 1, such as an assessment of transit-oriented development favorability, analysis of traffic impacts from train operations, and review of any environmental constraints that could challenge the design or radically impact the construction costs of a new rail facility.

Station Context



SEPTA Willow Grove Station as viewed from the York Road and Davisville Road Intersection

The initial project study area (depicted in Exhibit 1-2) consists of 54 different parcels. These include a variety of parkland, county office space, light industrial, commercial, and public transportation uses. This area represents much of the historic core of Willow Grove, which has been transformed by major highway arterials, such as York Road (PA 611) and Moreland Road (PA 63) into an auto-oriented landscape with extensive surface parking coverage. The remainder of surrounding lands in Upper Moreland Township is lower density residential properties (see Exhibit 3-1). Moreland Road comprises the boundary of Upper Moreland Township and Abington Township. Located in Abington Township is the Willow Grove Park Mall and a SEPTA bus transfer station, situated less than ½ mile from the Willow Grove Station. SEPTA bus routes 22, 55, 80, 95, and 310 serve[13] this area, along with locally provided shuttle services and senior shared-ride connections.

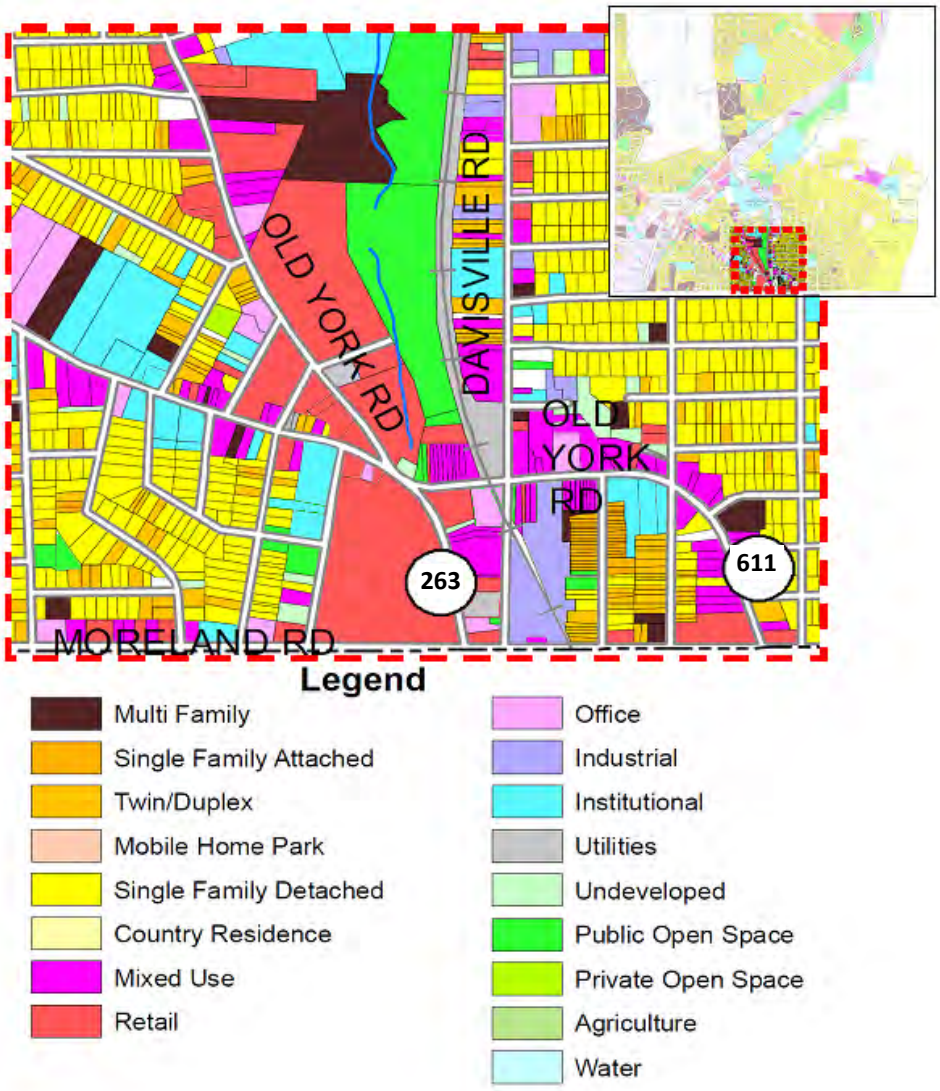
While not officially designated as historic, the Willow Grove Train Station dates from 1935, and retains historic characteristics. The station is situated at the corner of York Road and Davisville Road, adjacent to the Ehrenpfort Block, a series of connected stores on the east side of York Road, extending from Easton Road south to the railroad station[14]. This block was built in the early 1920s,

[13] Only the SEPTA Route 310 (Horsham Breeze) directly serves the Willow Grove Station. SEPTA Route 80 does not serve Willow Grove Park Mall

[14] The Morelands and Bryn Athyn, Old York Road Historical Society, 2009.

and currently features numerous vacant and underutilized storefronts. In contrast, other surrounding parcels along York Road are Bally Fitness[15] further north, and just south from the station the Mandarin Garden Chinese Food Restaurant, both erected in the mid-1980s.

Exhibit 3-1: Upper Moreland Land Uses in Vicinity of the Willow Grove Station



Source: Upper Moreland Open Space Plan

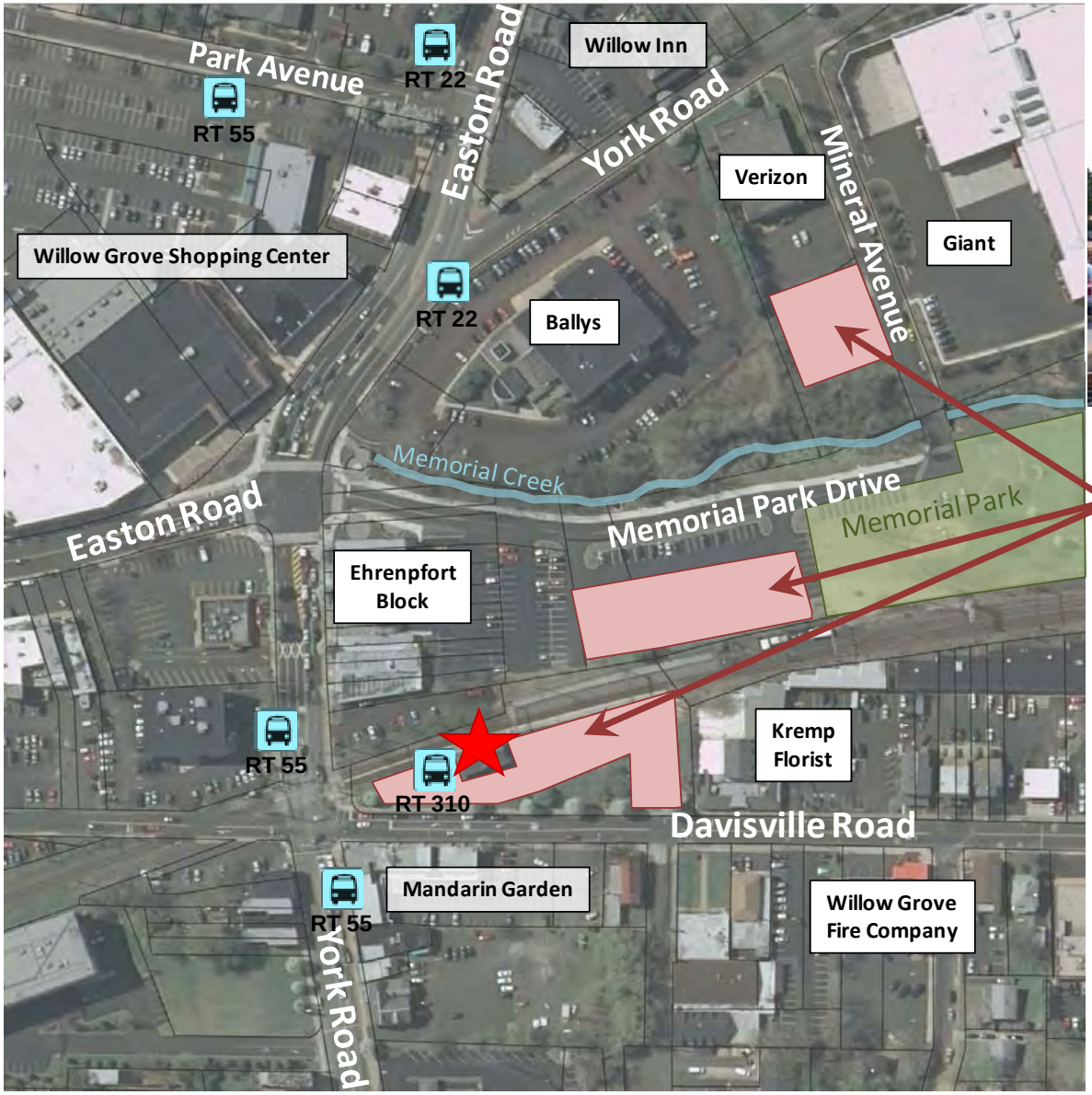
Kremp Florist, immediately north of the current station made major renovations to its Willow Grove Store in 2003. The last surrounding parcel is occupied by Veterans Memorial Park, created at the end of World War II and an integral part of Upper Moreland Township's Parks and Recreation system.

[15] LA Fitness acquired Ballys in December 2011 and closed the Willow Grove facility in 2012.

In 2009, Upper Moreland Township completed the Memorial Drive Project, creating a new entrance to Veterans Memorial Park. This project included a fully signalized, pedestrian accessible intersection at Easton and York Roads in the heart of downtown Willow Grove allowing for easier pedestrian access to the SEPTA station and downtown stores. Enhanced and expanded parking (with 131 spaces leased for SEPTA use) resulted from this project, with subsequent revitalization phases adding a new streetscape in front of the Ehrenpfort Block.and stream bank enhancements along adjacent Memorial Creek. See Exhibit 3-2 for additional station area context photos and Exhibit 3-3 for an overview of the surroundings and SEPTA statistics.

Exhibit 3-2: Existing Station area photos. Left – Ehrenpfort Block streetscape. Top right – Memorial Park Drive/Creek. Bottom Right – Leased parking on Verizon Property

Exhibit 3-3: Willow Grove Station - Surroundings and Statistics



★ - Willow Grove Station

- SEPTA Bus Stops (Route #)

SEPTA WILLOW GROVE STATION

Station Parking

Type	Spaces Availability	Price
Daily	116 FULL	$1 / day
Permit	32 FULL	$20 / month
Verizon Lot	42 28	$0.50 / day
Total Parking: **190 spaces**		

Station Ridership (2009)

Weekday Boarding	**491**
Weekday Alightings	**448**

Previous development proposals had considered relocation of the existing SEPTA station north or south from its present location. Two major developer proposals that tested station features and redevelopment scenarios include:

- In 2005, developer Charles Gallub prepared preliminary sketches for a $150 - $200 million redevelopment project, consisting of approximately 20-acres and extending from the present corner of Memorial Park Drive north along York Road, encompassing the former site of Home Depot (now Giant Supermaket). In this plan, the train station was proposed to be located immediately north of Kremp Florist, with a new station and office facility occupying air-rights over the SEPTA right-of-way. Station parking was to be accommodated by an elevated pedestrian walkway to a shared parking structure across from the Willow Inn, with the current split intersection between York and Easton Road in this vicinity reconfigured.

- In 2007, Federal Realty prepared concept plans for a $400 million Phase 1 redevelopment at the intersection of York Road, Easton, Road and Memorial Park Drive. A key feature was centralized parking structures (total of three) for both retail and train patrons. Public investment would include intersection improvements, parking and property acquisition. This initial phase illustrated a town square concept created across from the Memorial Park Drive entrance with the stated dual purpose of enhancing park access and train station connections.

Other concepts from the 2003 Willow Grove Revitalization Plan considered the closure of Davisville Road and the relocation of the train station south of York Road. The location proposed for the relocated station in the South Davisville Block is currently a single parcel of property currently occupied by an oil service company, car wash, and automobile repair building among other commercial uses (see Exhibit 3-4).

Issues and Opportunities

Even before specific developer interest is ascertained on a particular rail station site, the suitability to construct a functional rail station that meets current and future needs must be tested. The following factors detailed in the remainder of this section can benefit or impede station functionality.

Traffic Conflicts

Initial feedback from the Revitalization Task Force indicated concern over the traffic impacts that result from train operations at the current Willow Grove Station location. The potential to minimize these impacts was deemed an essential component for testing the issues and opportunities presented by alternate station location sites. Nominally, grade crossings are activated approximately 1,500 feet (approx. ¼ mile) from a crossing location. The gates remain down during the approach of the train and while it passes through the intersection. This process is dependent on the speed of the approaching train.

Exhibit 3-4: South Davisville Block photos. Left – Commercial uses between York Road and Moreland Road. Top Right – Looking east towards York Road (existing station). Bottom Right – SEPTA train within the South Davisville Block.

Currently, at the Willow Grove Station when a southbound (toward Center City) train stops before the York Road at-grade crossing, the gates remain down during the duration of the passenger loading/unloading process and until the train begins moving again and fully clears the intersection. In the northbound (toward Warminster) direction, when longer trains stop after the York Road intersection (typically during the afternoon peak), the longest trains are unable to clear the intersection. Therefore the gates also remain down throughout the outbound passenger loading/unloading process, with some passengers discharged directly onto the York Road pavement from train doors within the intersection. These conditions were previously affirmed in the 2007 Vehicular and Pedestrian Traffic Impact Study.

The platform length of the existing station cannot accommodate 6-car trains, requiring unloading in York Road.

The current study team conducted field view observations to determine representative times for these delays. The length of time of traffic interruption due to grade crossing activation for trains in the southbound direction ranged from

2:10 – 2:30 minutes. In the northbound direction, this delay ranged from 1:10 – 1:30 minutes. The same delay of 1:10 – 1:30 minutes is observed for trains in both directions at the Moreland Road grade crossing. An estimate of the total weekday delays at both of these crossings due to passing SEPTA trains (43 trains) is just over two hours[20] over a 24-hour weekday period.

Relocating the train station to a site between York and Moreland Roads would have the effect of shifting the delays to Moreland Road in the southbound direction and to York Road in the northbound direction. Absent any mitigation techniques, the net increase in total weekday delay at these two grade crossings could add an additional 20 minutes to the existing two hours of delay (see Chapter 4 – Concept Evaluation). Independent of station location choice, it is recognized that there is an opportunity to shorten train dwell time through the use of high-level platforms, which would be installed as an essential component of a new Willow Grove Train Station. Faster loading/loading times would offset to some degree the grade crossing delays required for station stops in close proximity to an at-grade crossing. Observations performed at other Regional Rail high platform stations indicate that an eight to 15 second savings may be expected during each loading/unloading period due to increased accessibility. The ability to open additional high-level doors on the new SEPTA Silverliner V equipment could further reduce delays.

Pedestrian Environment

In order for the Willow Grove Station to be a catalyst for redevelopment, it is envisioned to be a center piece in a higher-density, mixed-use, pedestrian-friendly development, giving pedestrians the opportunity to walk between the transit station and their destinations. The improvement to pedestrian connections is essential for the success of any transit-oriented development project. The opportunities presented by a more centrally located Willow Grove Station include:

- Create higher-density living environments in proximity to downtown Willow Grove amenities (often sought out by young professionals, students, local workers, and senior citizens).
- Generate increased pedestrian activity that can support retail and reinvigorate existing retail locations.
- Create opportunities for infill development and redevelopment in underutilized areas.

A quarter-mile radius represents a typical benchmark for the distance and time (about a ten-minute walk) that most people would be willing to walk to a transit station. The project team prepared maps that compared this "walking zone" for the existing Willow Grove Station and a proposed station relocation site in the South Davisville Block (see Exhibit 3-5 and Exhibit 3-6).

[20] This includes scheduled train movements only and is exclusive of non-revenue operations and freight train activity.

Exhibit 3-5: Current Willow Grove Train Station ¼-mile Walk Distance

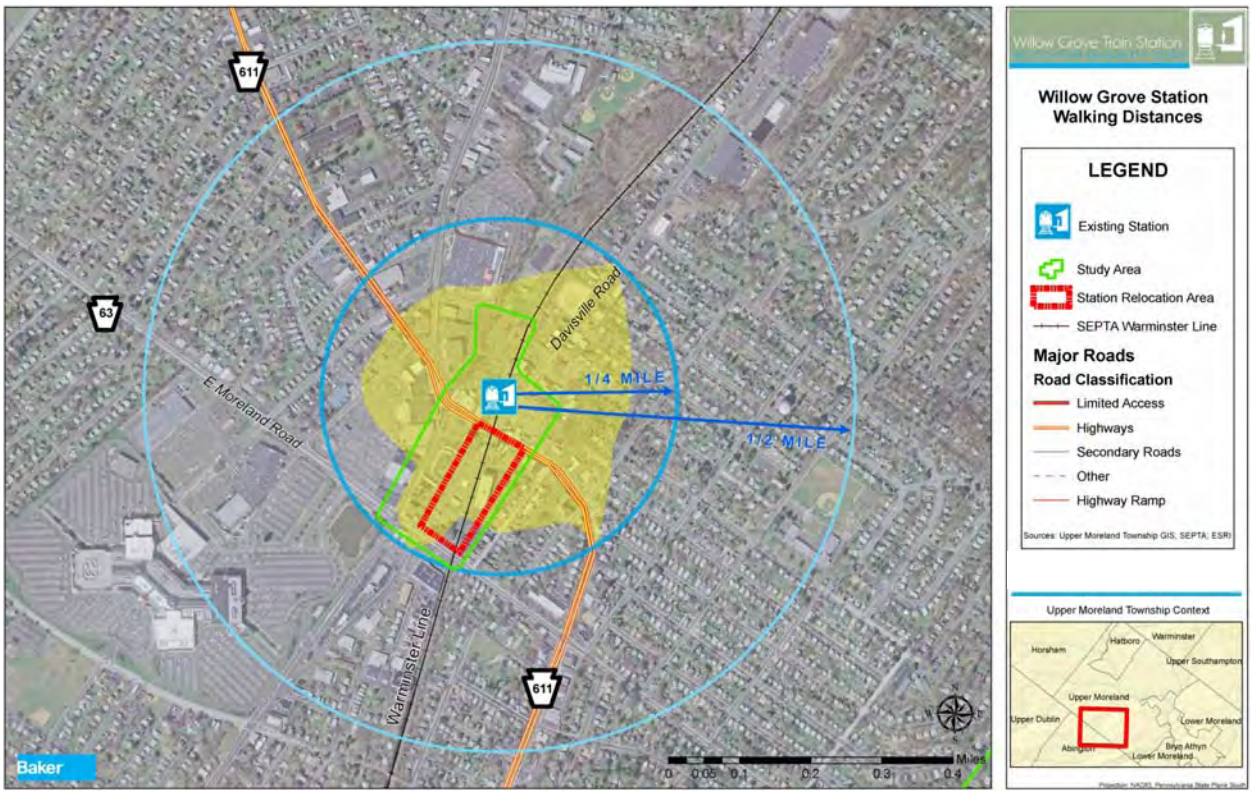
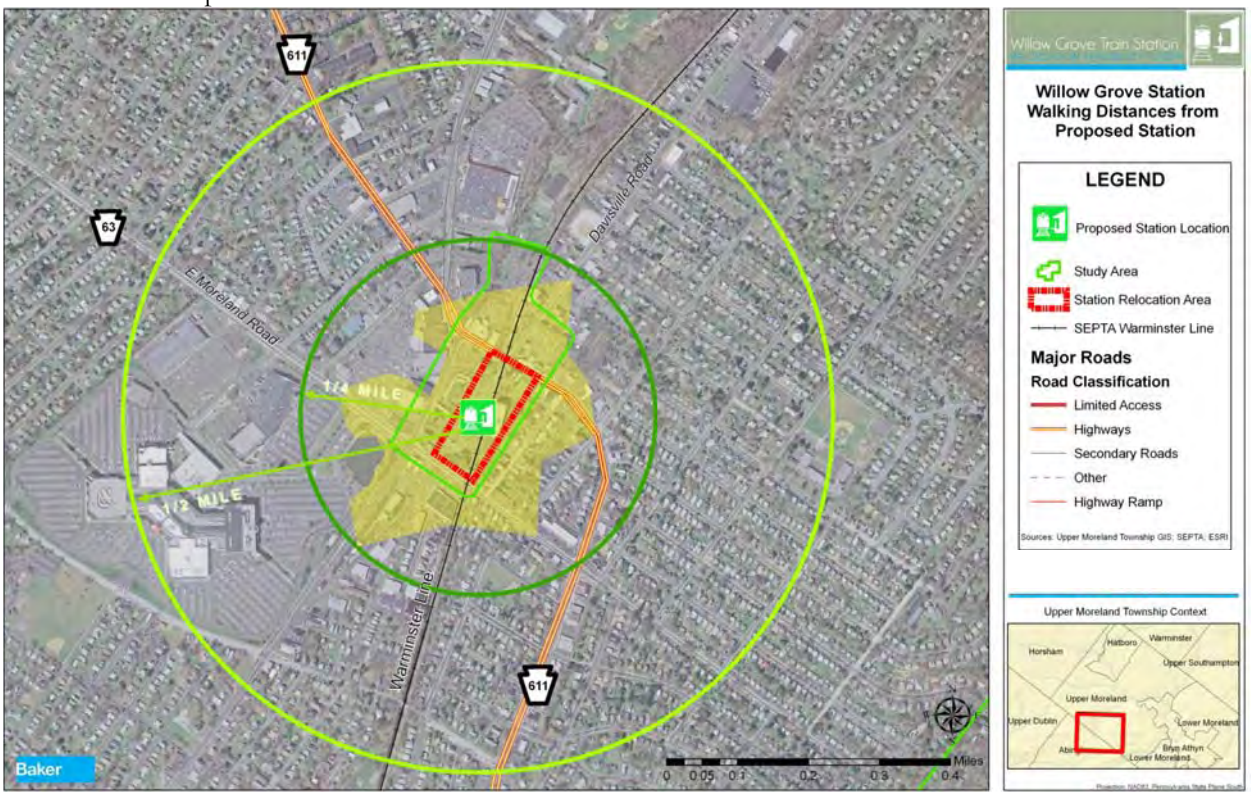


Exhibit 3-6: Proposed South Davisville Block Train Station ¼-mile Walk Distance



A key finding is that **if a station were to be relocated to the South Davisville Block without a scale of redevelopment that would also include new streets and passages through the solid frontage wall of the Willow Grove Shopping Center along Easton Road, that walking access would be more restricted than from the current station location.**

This frontage along Easton Road is a barrier to pedestrian mobility in Willow Grove.

Upper Moreland Township is addressing these issues through other initiatives, such as the Revitalization Plan Update (2012) and a recent Placemaking grant initiative. The opportunity to continue coordination between these efforts must be maintained. There is often the misperception that streetscape improvements alone will be enough to attract pedestrians and business into a station area.

Other Factors Influencing the Station/Redevelopment Relationship

- **Parking Expansion** – Limited transit customer parking is currently available at the Willow Grove Station. The ratio of parking provided to station ridership is significantly lower than at other comparable SEPTA rail station locations (see Appendix C). Physical space requirements preclude a significantly larger surface parking facility in this location and necessitate an investigation into more costly structured parking. Concept features may include one large adjacent structure or smaller lots interspersed with residential and commercial uses that could more easily be shared by local businesses and residents.

SEPTA Permit Parking at the Willow Grove Station

- **Space Requirements** – Sufficient space for a new rail station platform is essential. A design goal of 550 feet plus sufficient buffer space from nearby grade crossings challenges previous development proposals that included a 400 foot platform for the South Davisville Block. While the platform can be accommodated if Davisville Road remain open, the safety buffers to adjacent rail crossings would be compromised.

- **Improved Bus Connections** – The current SEPTA Route 310 Horsham Breeze is not scheduled to transfer with all Warminster Trains arriving/departing in Willow Grove. The bus access and drop-off (adjacent to the current station) is difficult and cramped, with no pick-up or drop-off location that doesn't also interfere with access to parking and vehicular circulation.

- **Double Track Potential** - There is currently sufficient right-of-way for this additional track at the existing and initially proposed station relocation. This currently unutilized right-of-way, however, is located on the north side of the existing track, which would require construction of two platforms.

- **Prior Investment** - Investment in Memorial Park Drive and streetscape improvements along York Road already directly benefit the existing rail station. Improvements to a gateway entrance for Memorial Park have also been planned, which could be strengthened by continued investments in this location, which support these initiatives.

Memorial Park redesigned entrance – proposed (2009)

- **Utilities** - The existing PECO substation at Davisville Road currently occupies a significant portion of redevelopable land and would be in close proximity to a relocated station in the South Davisville Block. The removal of this facility, which would likely present itself as a locally undesirable land use if it remained adjacent to newer development, would potentially result in complex negotiations and additional cost incurred in any surrounding redevelopment plan.

- **Floodplains** - Memorial Creek, a tributary to the Pennypack Creek, is prone to some flooding conditions. The presence of this watercourse will naturally limit the surrounding redevelopment potential and intensity of future buildings adjacent to the current station site. The channelized creek bed contains the floodplain, however alluvial soils and poor drainage conditions were found during implementation of Memorial Park Drive.

- **Adaptive Re-use** - There is an opportunity for re-use of higher density buildings in proximity to the South Davisville Block location, with both the Montgomery County Annex Building and the Public Storage facility possibly being incorporated into future redevelopment plans.

- **Traffic Calming** – Traffic does not appear to adhere to the posted 25mph speed limit along York Road in the vicinity of the current station. A pedestrian-friendly main street environment would benefit the transit-oriented scale of redevelopment envisioned and

improve safety along the roadway for both vehicles and pedestrians. This however may also conflict with goals to improve vehicular circulation and the Township will need to continue to weigh the trade-offs regarding traffic calming initiatives.

- **Sustainability** - There are significant opportunities to incorporate SEPTA's Sustainability Program elements into this project. These features and a LEED certification were obtained for recent station facility upgrades at Fox Chase Regional Rail station.

SEPTA Fox Chase Station – An example of sustainable design

- **Zoning** – The Upper Moreland Town Center Zoning district encompasses the current station location and the South Davisville Block. This zoning builds upon the standards set within the 2003 Willow Grove Redevelopment and Revitalization Plans, including the intent to:
  - Encourage development adjacent to and oriented towards the Willow Grove Train Station and bus routes to increase transit ridership
  - Encourage an adequate amount of parking in convenient locations throughout the district in centralized parking structures and surface parking lots to support the economic development and transit ridership in the area

- **Topography** - The slightly higher elevation of the railroad tracks versus Davisville Road in the vicinity of the Davisville Block could facilitate the construction of a pedestrian underpass in this location and minimize grading or construction of elevator towers which would be associated with provision of a mid-platform crossing of the SEPTA tracks.

- **Historic Resources** - The existing train station building is viewed as a community asset. It could assume a role as a café or small office space as part of an accompanying redevelopment effort.

- **Naval Air Station Redevelopment** – The future repurposing of the Willow Grove Naval Air Station (approximately 4 miles north in Horsham Township), has the potential to establish expanded shuttle service to area Regional Rail stations. The proposal which is anticipated to be implemented within 8-10 years, features more than 1,400 residences, including townhouses and single-family houses, a 40-acre middle school, and a town center featuring retail, dining, and open space. A planned 133-acre office park is also expected to bring more than 7,000 jobs to the community.

As noted in this section, there are many opportunities and issues to be addressed in accessing the feasibility of a station relocation project. No new development investment, however, will occur unless there is sufficient profit motive to overcome the risk and/or uncertainty faced by a private developer. Given the current constrained capital funding outlook for public transit in the Commonwealth, SEPTA is also looking for private sector partnership opportunities rather than sole reliance on publicly funded transit capital outlays. The ultimate success of bringing a joint development project to fruition, however, may not rest in the establishment of a public/private partnership, but how to time and scale public expenditure with what the private and investment market will realistically bear given likely economic returns. The following section outlines initial investigations by the project team into some of these prevailing market and real estate conditions.

Market and Real Estate Analysis

To establish a framework for an analysis of the current and potential station area reinvestment opportunities, the project team studied the demographic and socio-economic trends of the Willow Grove Primary Market Area (PMA), represented by a 10-minute drive-time contour surrounding the train station; Montgomery County; and the Philadelphia Metropolitan Statistical Region (MSA). The purpose of this analysis was to provide recommendations for establishing transit-oriented redevelopment (TOD) scenarios with the greatest likelihood of success. This approach is typical of the services provided to developers and municipal partners and is designed to accomplish the following:

- Gain an understanding of the existing market conditions and underlying factors that may influence changes in these conditions.
- Identify latent demand for goods and services by establishing the mix, size and scope of redevelopment, which thereby aids in the identification of prospective development partners.
- Develop effective strategies to market the opportunities provided within the study area to meet material demands, and
- Set realistic targets for the growth and anticipated returns of redevelopment for a reasonable horizon of time and dollars.

The project team assessed the overall market demand based on not only national TOD experience and economic development analyses, but also on experience working on prior and applicable public and private development proposals. Utilizing a combination of published government data and proprietary analysis software, the project team prepared a series of data tables comparatively illustrating labor market trends for the, Montgomery County and the Philadelphia Metropolitan Statistical Area (MSA). Labor data was assembled from the latest Pennsylvania Department of Labor figures. For the real estate market component of this analysis, proprietary software (of

project team member 4Ward Planning), secondary market reports and information gained through interviews, was used to profile residential, office, and retail market trends within the Willow Grove PMA. Factors profiled included inventory, absorption pace, sales and lease rate trends, rental rates, vacancies, and a summary of development activity within the PMA. Coordination with the Revitalization Task Force assured the incorporation of planned and proposed residential, retail and office projects, and informed the estimations of timing, target markets, and potential impact on the Willow Grove study area. Complete details of this extensive analysis can be found in Appendix B. A summary of key findings and highlights is presented in the sections that follow.

Demographic Trends

While population and household formation have either slowed or declined within the Willow Grove PMA over the past ten years—and projections suggest this trend will continue through 2015—there still exists sufficient density within a ten-minute drive of the proposed station area to merit interest from the private development community to pursue TOD project. Comparatively, the Willow Grove PMA has much greater population and household density than both Montgomery County and the Philadelphia MSA, with fewer automobiles per household. These indicators are seen as being favorable to the development of TOD projects. When compared to other local and regional suburban TOD sites, the Willow Grove area shows similar or greater-than-average population, household density, aggregate income, and vehicles per square mile than comparison sites. The last indicator frames the issue that **while current transit service is likely contributing to lower automobiles per household in Willow Grove compared to its surroundings, the area still remains more auto-oriented than traditional transit-centered communities.**

While household size within the PMA showed a slight increase over the past ten years, analysis of similar data on other projects concludes that this phenomenon is likely due in large measure to household consolidation in light of recent macroeconomic conditions (the recession and housing crisis, specifically). Longer term trends, regionally and nationally, suggests households will continue to contract, contain fewer school age children, and, as a consequence, be less dependent upon automobile travel as the principal mode of transportation.

Other findings include:

- By 2015, the number of households within the Willow Grove PMA earning $75,000 or more per year are projected to represent more than a 45 percent increase over the number of area households earning a similar income in 2000. The projected increase in upper income households within the PMA bodes well for attracting a variety of retail (e.g., restaurants, convenience goods, personal services) to the PMA.

- A projected growth of over 24 percent in the 55-and-older population within the Willow Grove PMA from 2000 to 2015. This demographic cohort typically resides in small households (e.g., empty nesters or single persons), have relatively higher discretionary

incomes, and are increasingly utilizing mass transit for both entertainment and work related destinations.

Labor and Industry Trends

Notwithstanding a modest decline in jobs between 2007 and 2009 (corresponding with economic declines in this timeframe), the Willow Grove PMA experienced net job growth over the 2005 to 2009 period, demonstrating an overall healthy employment market.

Given that a relatively large number of workers either commute into Philadelphia from the Willow Grove PMA or commute from Philadelphia into the PMA, establishment of TOD around a commuter line providing service to and from Philadelphia would likely be well received by area residents and workers alike. **More than 30,000 workers currently commute into the PMA for outlying areas, a factor which could potentially grow the market for additional and closer housing options.**

Other findings include:

- Employment in the professional, scientific, and technical services sector grew by a robust 71 percent between 2007 and 2009, in the targeted Willow Grove study area. By comparison, employment in this industry sector remained flat in overall Montgomery County and the Philadelphia MSA during the same time period.

- Approximately 20 percent of workers living within the study area commute to jobs in Philadelphia. Similarly, approximately 20 percent of persons employed within the Willow Grove study area commute from Philadelphia. Due to the centralized nature of the SEPTA regional rail system, these trips may be best suited for ridership growth potential along the Warminster Line.

Real Estate Trends

Given that regional and national economic conditions have not improved, appreciably, in the nearly four years since the country's economy went into recession in 2008, real estate conditions, generally, for the Willow Grove PMA have held up reasonably well. The combination of increasing household income, educational attainment, and age are all favorable trends with respect to market viability for revitalizing current retail and service amenities in Willow Grove. However, a significant finding that impacts the composition on redevelopment proposals is the fact that **existing market trends indicate there is little need for appreciably more retail in the Willow Grove PMA.** By itself, a well executed TOD project typically will generate specific demand for small format retail close-in (surrounding) the station (e.g., florist, dry cleaners, coffee shop, café, etc.). Additionally, if existing retail is properly connected in the pedestrian realm, there exists the potential for increased demand to existing and currently underperforming retail locations nearby. It is estimated that the TOD

created market for new retail space would be comprised of an additional 10,000 square feet of small specialty and convenience space in the immediate vicinity of the Willow Grove station stop. This retail demand is significantly less than past development proposals with estimates of adding up to 1 million square feet of new retail space in the community.

While new housing development has trended downward – particularly over the past four years – there are sufficient signs that growing demand for multi-family rental housing is on the rise. Conversely, new Class A office development is likely several years off as relatively high vacancies will need to be pared down first. However, TOD projects are capable of creating demand for new office space (small, though it may be) in markets that generally have little demand, based on the access to quality mass transit and associated amenities.

Other findings include:

- Identified market trends within Montgomery County suggest there is growing demand for multi-family rental units over the coming years – a percentage of which could easily be captured by a Willow Grove TOD project.

- Based on modest population growth, pent-up housing demand from commuting workers and the need to replace physically obsolescent housing units, the Willow Grove Market area has an estimated demand for more than 23,000 housing units over the next five years. A small percentage of these units could be developed within a half-mile of a prospective Willow Grove TOD project.

4. STATION RELOCATION CONCEPTS

This chapter outlines the steps, intermediate concepts, and methodology for developing a preferred scenario (station location and surrounding redevelopment). There are three primary components of this planning process:

1) Identification of all possible station location possibilities/scenarios

2) Illustration of how one particular location/scenario best fulfills the evaluation criteria for project success (based upon established study goals and objectives), and

3) Refinement and provision of more design/implementation details for the preferred concept

Feedback through multiple outreach efforts (outlined in Chapter 2) did not result in agreement on any particular or specific station relocation sites to further investigate. However, it was consistently stated that locations north of the existing station should be considered. One contributing factor for this stated preference was the concern that only a more northerly station could diminish rail crossing interference on York Road (traffic delays due to trains approaching and/or stopping at the platforms). Many study participants expressed concern that a South Davisville location could potentially shift additional delays to Moreland Road while delays at the York Road grade crossing would remain. Concepts were therefore developed for an additional location north of the current station, but still within close proximity to the core of Willow Grove to assist in revitalization efforts and underscore the role of walkable connections to promote transit-oriented development.

Concept Identification

Three station locations sites: South Davisville, current station location, and North Davisville, were retained for further analysis (see Exhibit 4-1). An overview matrix of basis for selection of these options and a listing of the most relevant factors (from Chapter 3) requiring investigation was prepared as a key component of the feasibility study process (see Exhibit 4-2).

Exhibit 4-1: Station Overview Locations

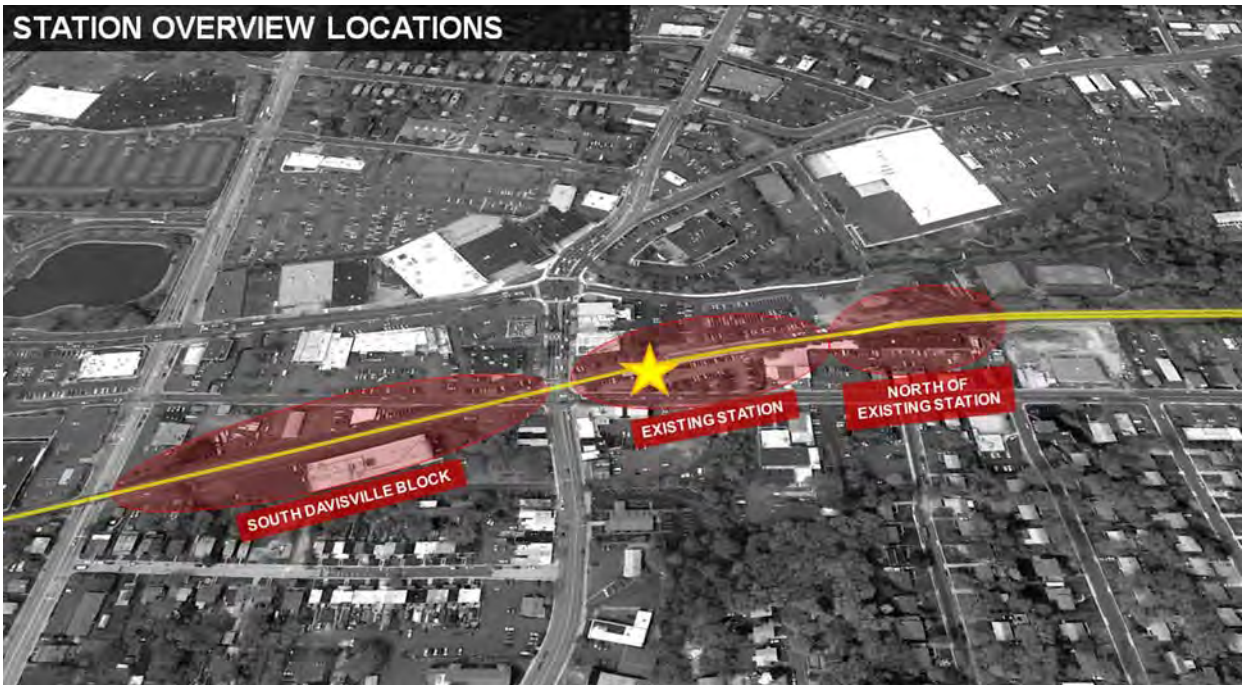


Exhibit 4-2: Location Selection Rationale and Site Specific Context Issues

Location	Selection Rationale	Context Issues
South Davisville Block (Concept A)	Identified in the TCDI Grant	Control of land
	Proximity to Willow Grove Core	Awkward development site
	Straight track for new platforms	Spread of traffic impacts
		

Exhibit 4-2 (continued): Location Selection Rationale and Site Specific Context Issues

Location	Selection Rationale	Context Issues
Existing Station (Concept B)	Station parking not fully utilized	Existing traffic impacts
	Baseline for Cost/Benefit	Disjointed site configuration
	Surrounding investments	How to encourage development
		
North of Existing Station (Concept C)	Grade crossing separation	Disruption (park, businesses)
	Davisville Road revitalization	Farther from Willow Grove Core
	Use existing double track	Barriers to pedestrian movement
		

A total of two initial station design concepts were developed for each location, to facilitate the testing of various infrastructure assumptions. **The six concepts represented rough sketches intended to facilitate discussions on study outcomes and determination of relocation feasibility.** These concepts were especially useful visualizations for the technical discussions with SEPTA, as it enabled rail operating issues such as platform configuration, interface with local transit, and parking to be vetted. All concepts were subjected to technical revision, modification, and fatal flaw determinations during this process. The six concepts included:

1) **Concept A1** – South Davisville Block station location – assume Davisville Road would close and area would be reconfigured by significant redevelopment. Double track extended southward past Moreland Road.

2) **Concept A2** – South Davisville Block station location – assumes Davisville Road remains, and station footprint is only on the land parcel initially proposed in the TCDI grant and independent of other redevelopment initiatives. Double track extended southward past Moreland Road.

3) **Concept B1** – Existing Station location – assumes reconfiguration of existing SEPTA/municipal land to increase parking. Double track extended through the station area and across York Road.

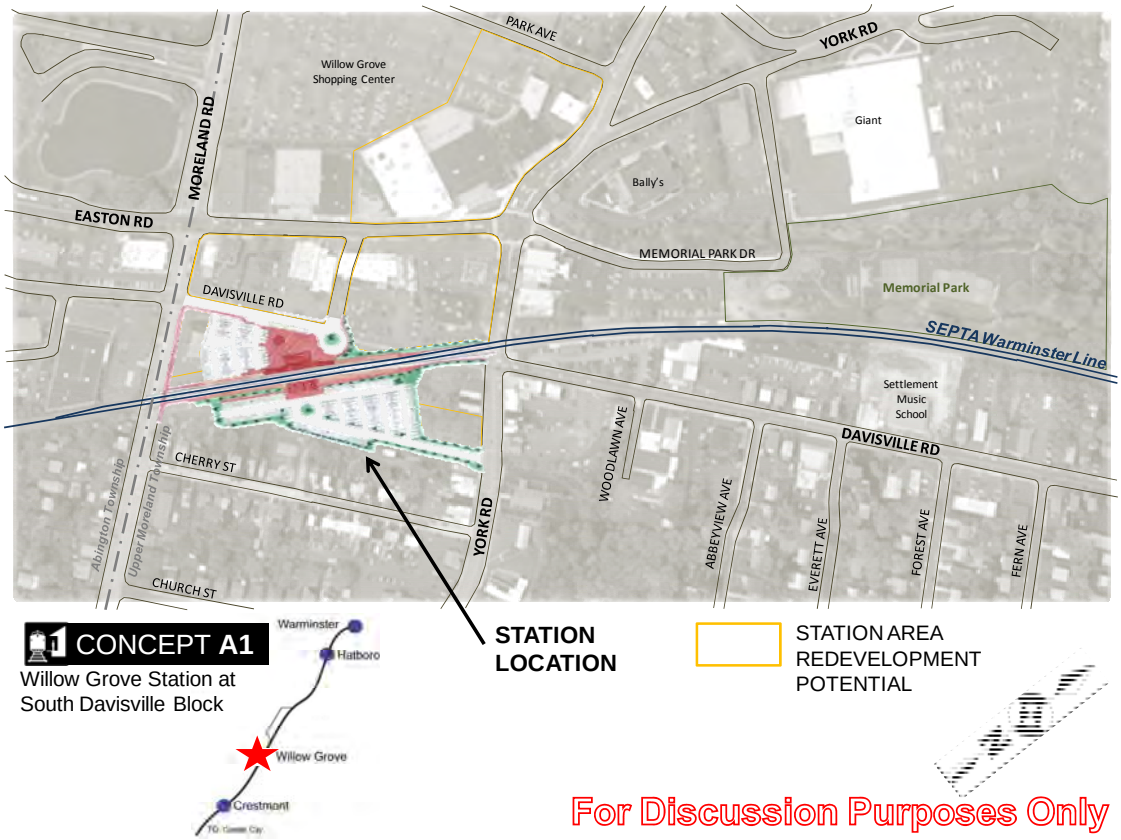
4) **Concept B2** – Existing Station location – assumes an expansion of station frontage along Davisville Road. Grove Siding extended through the station area, resuming single track prior to York Road.

5) **Concept C1** – Station location moved north of current location to support redevelopment of former station site and potentially mitigate the train/traffic interface. Grove Siding pushed north to allow single track (one platform) station design within the station area.

6) **Concept C2** – Station location moved north and station facility switched to Memorial Park side to facilitate full redevelopment along Davisville Road. Platforms placed alongside existing Grove Siding double track, requiring no additional investment in trackwork.

These concepts, including overview and detailed sketch components are presented in Exhibit 4-3 through Exhibit 4-8.

Exhibit 4-3: Concept A1 Overview and Sketch Details



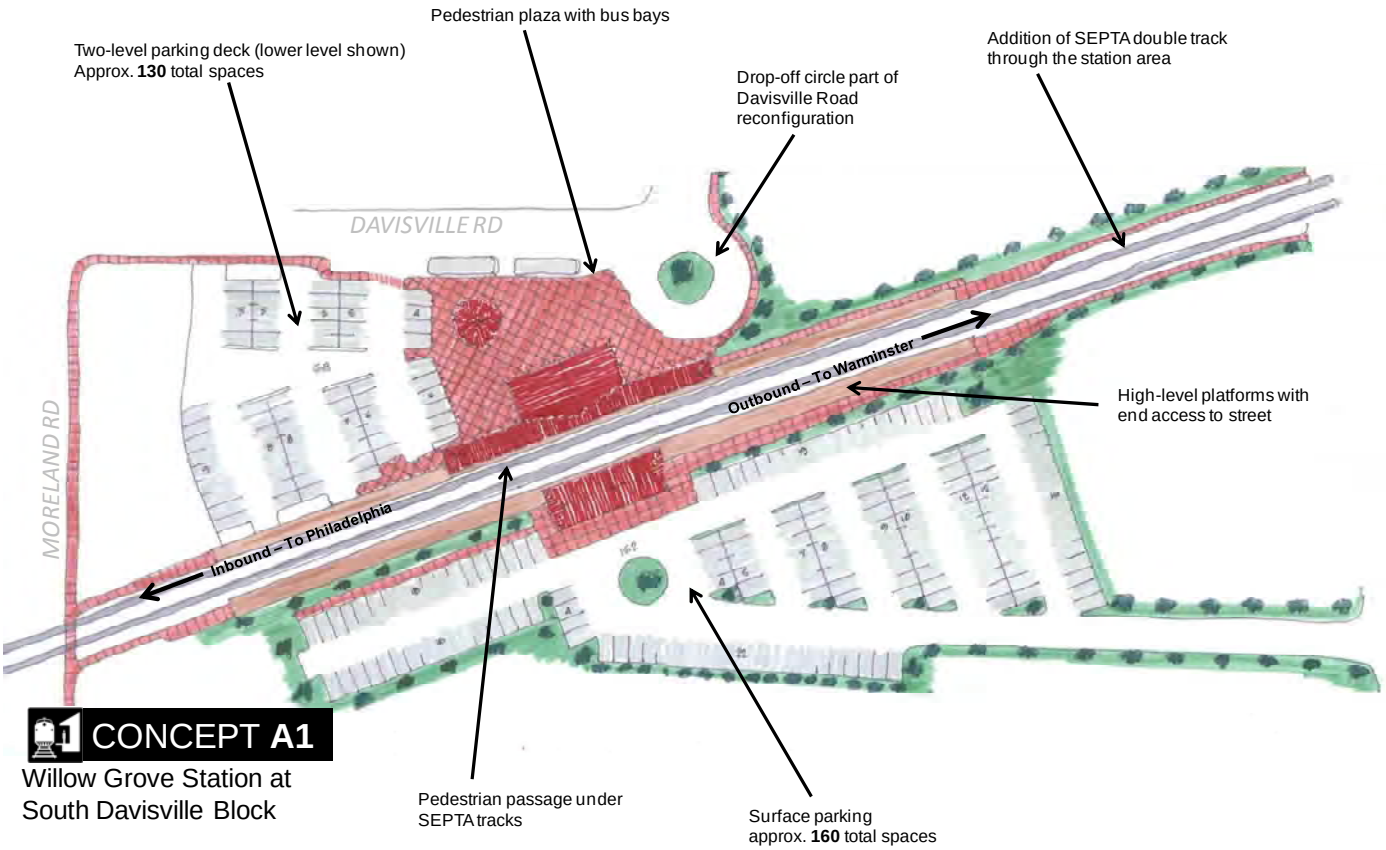
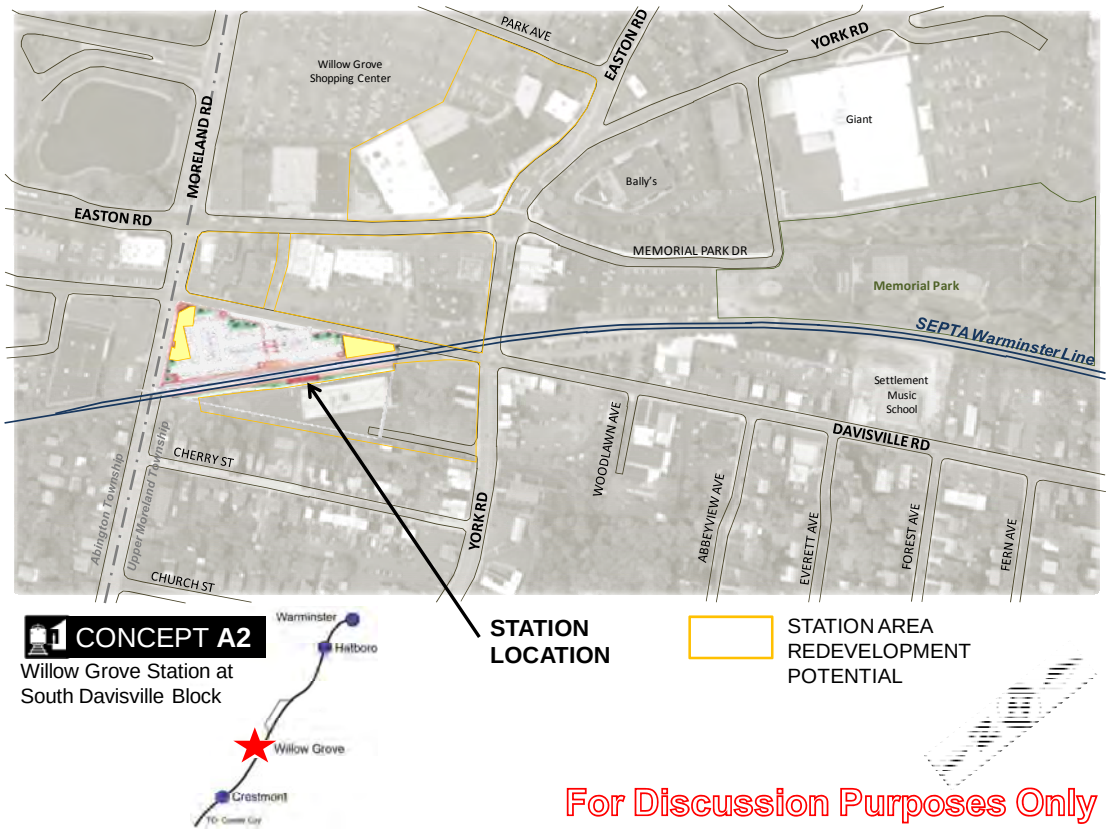


Exhibit 4-4: Concept A2 Overview and Sketch Details



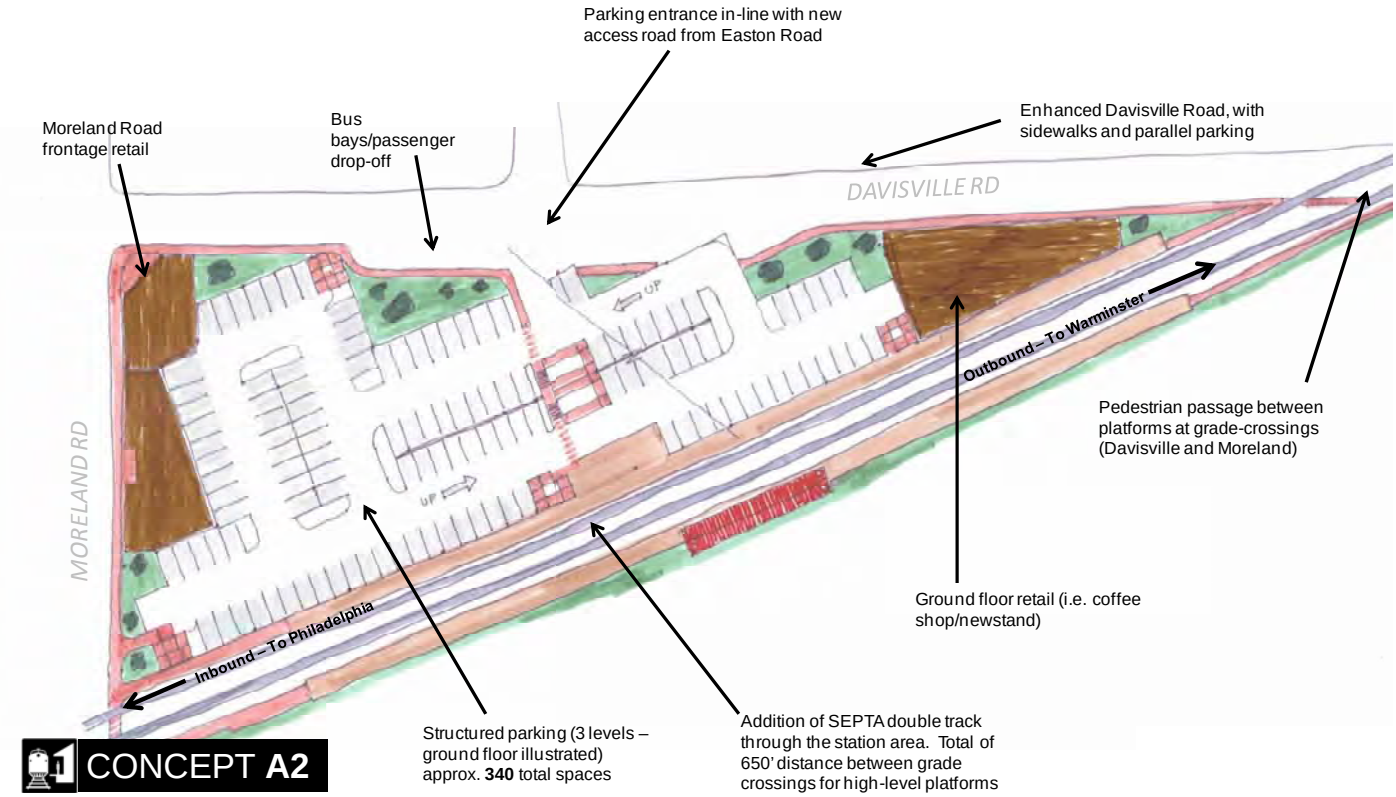
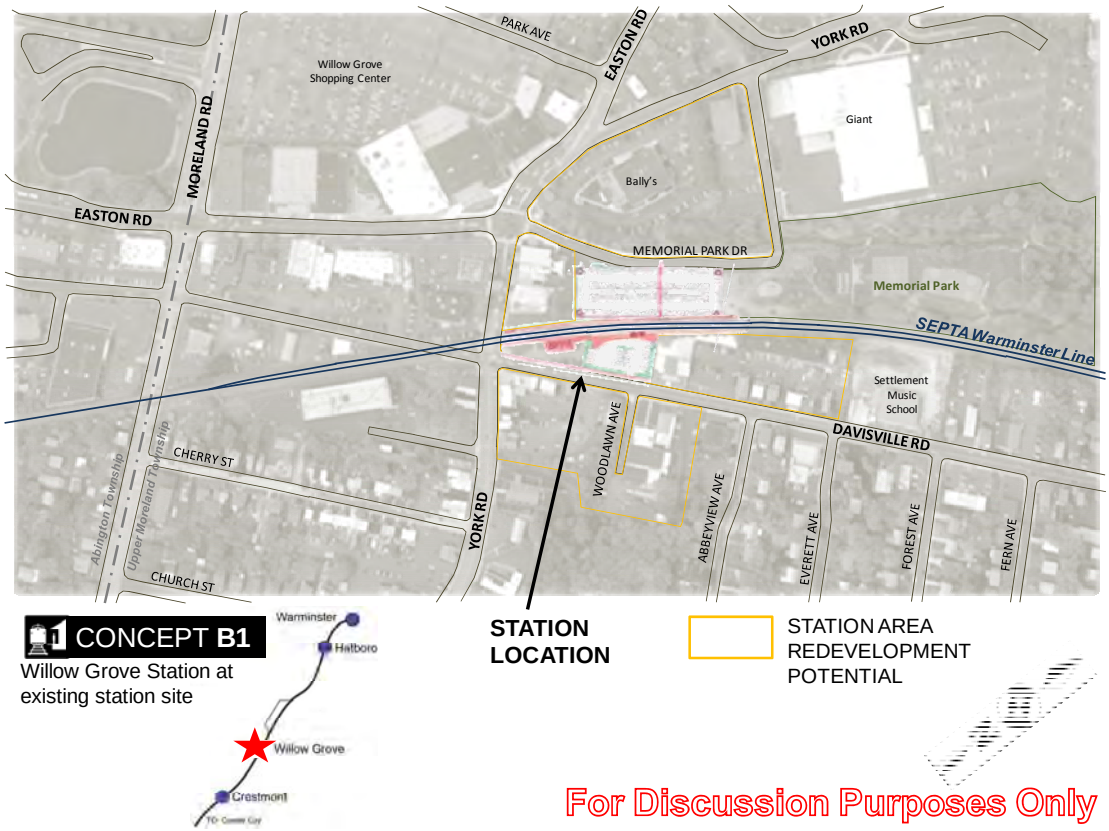


Exhibit 4-5: Concept B1 Overview and Sketch Details



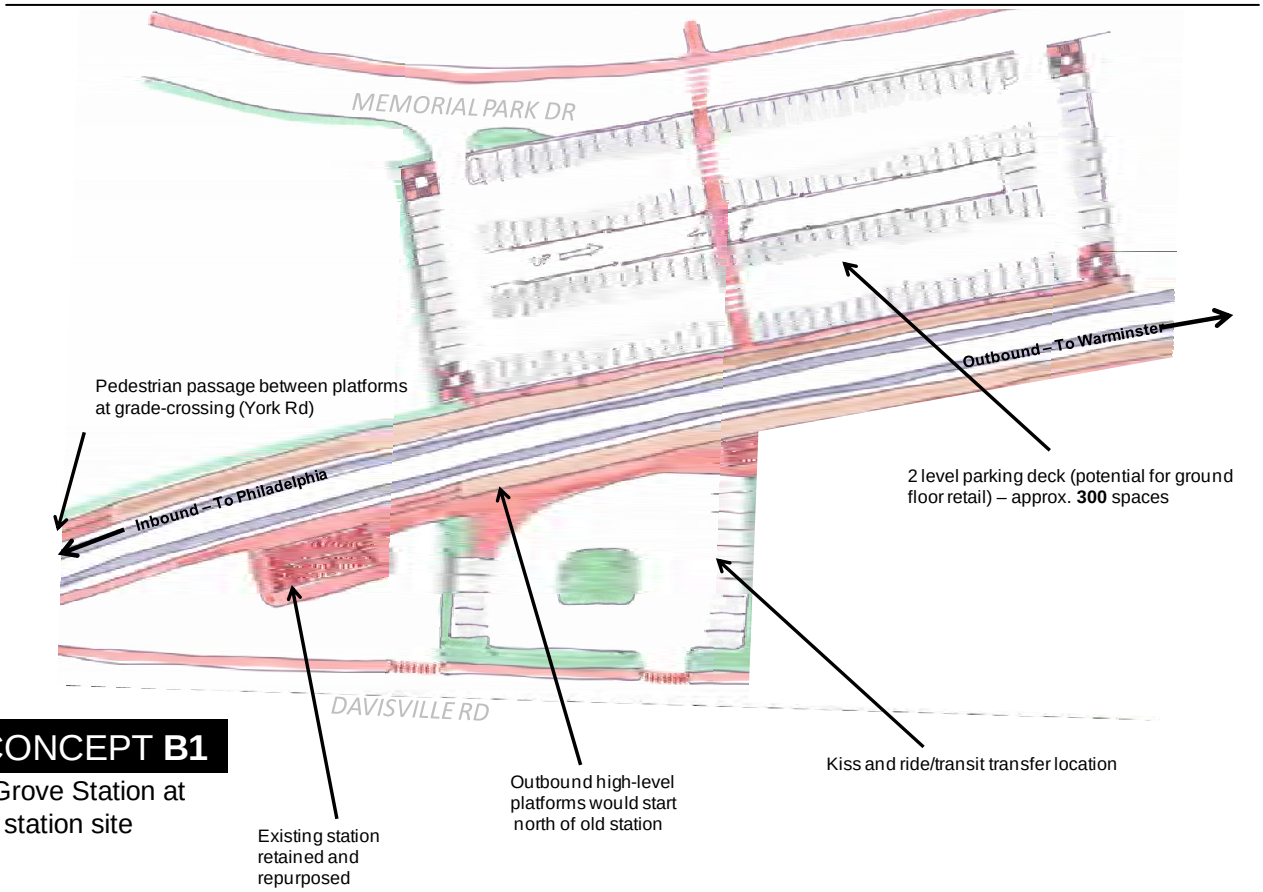
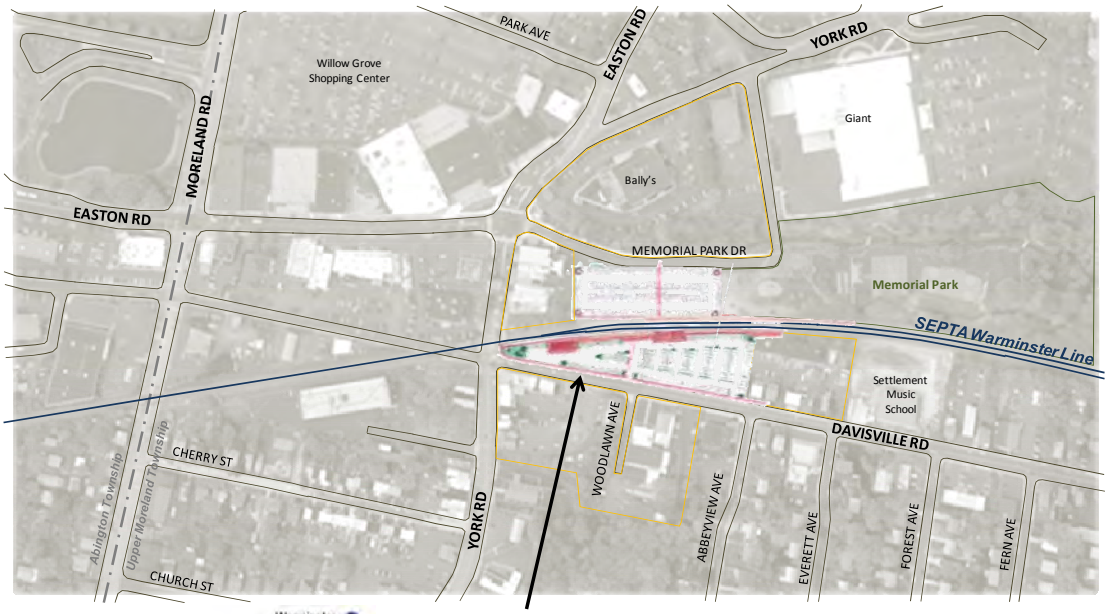


Exhibit 4-6: Concept B2 Overview and Sketch Details



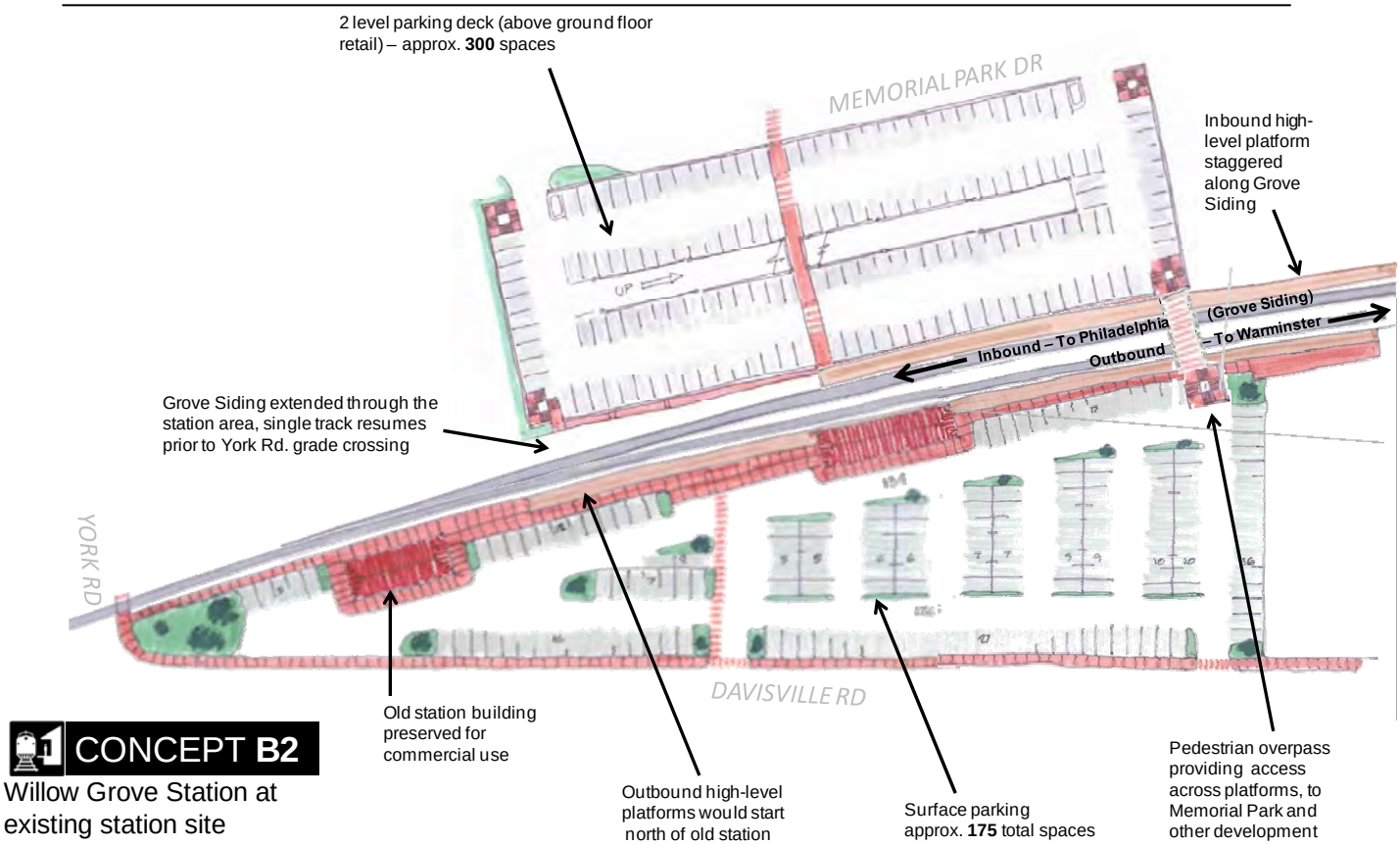


Exhibit 4-7: Concept C1 Overview and Sketch Details

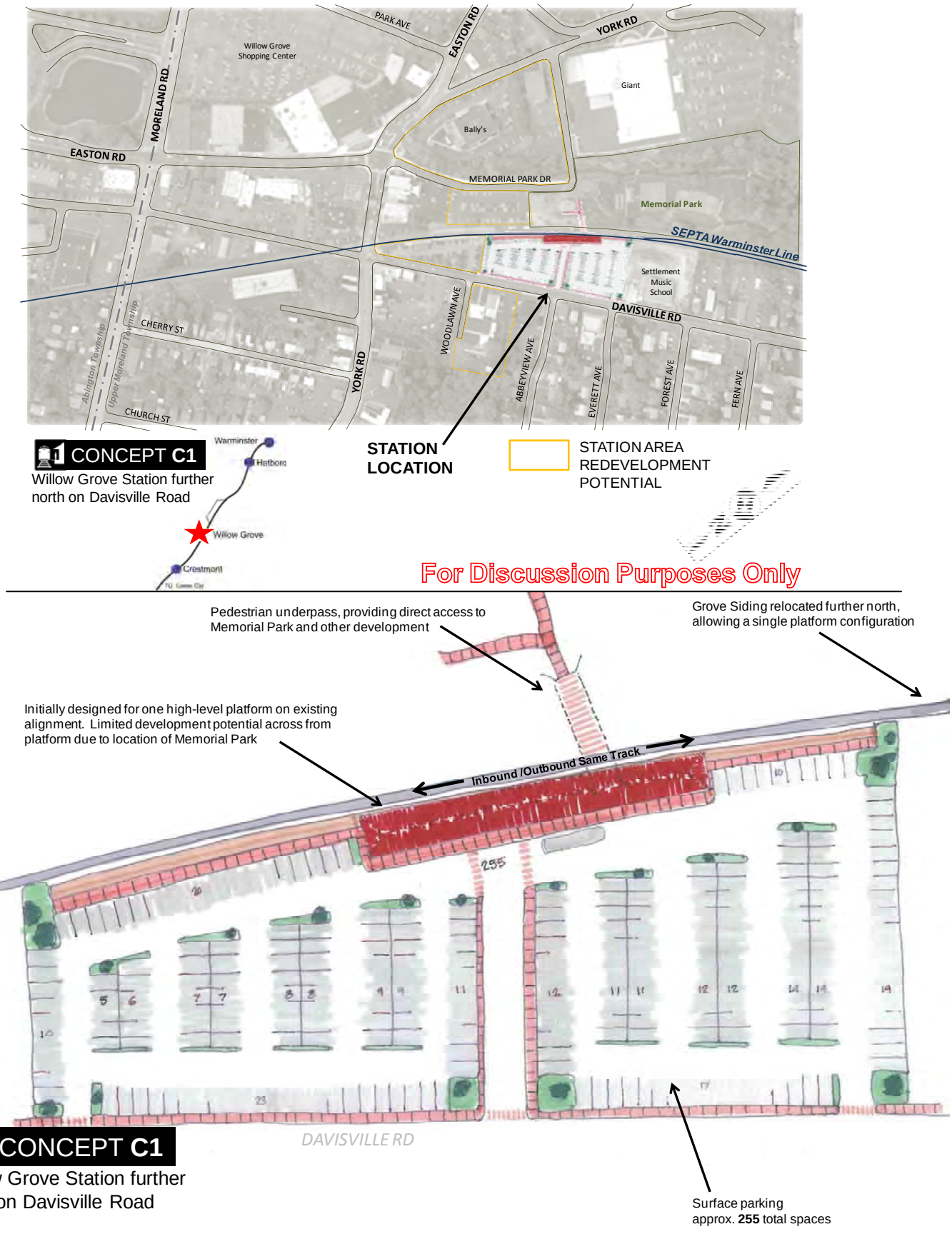
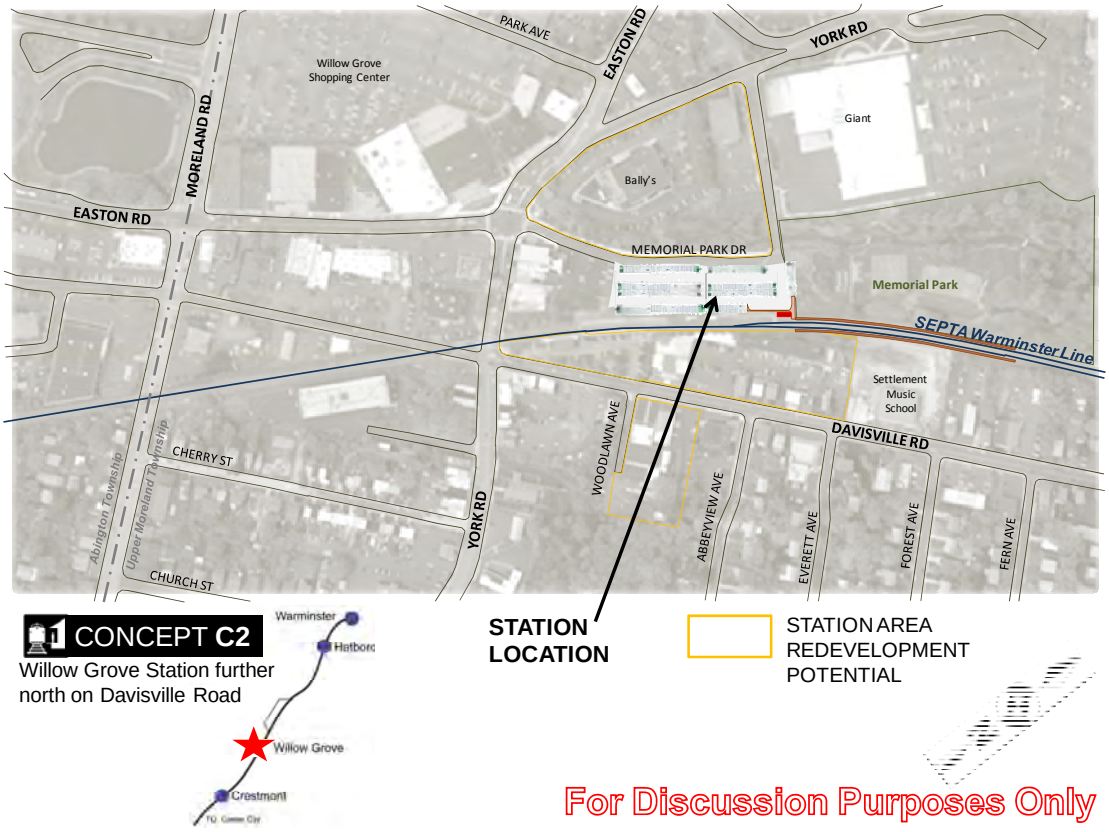
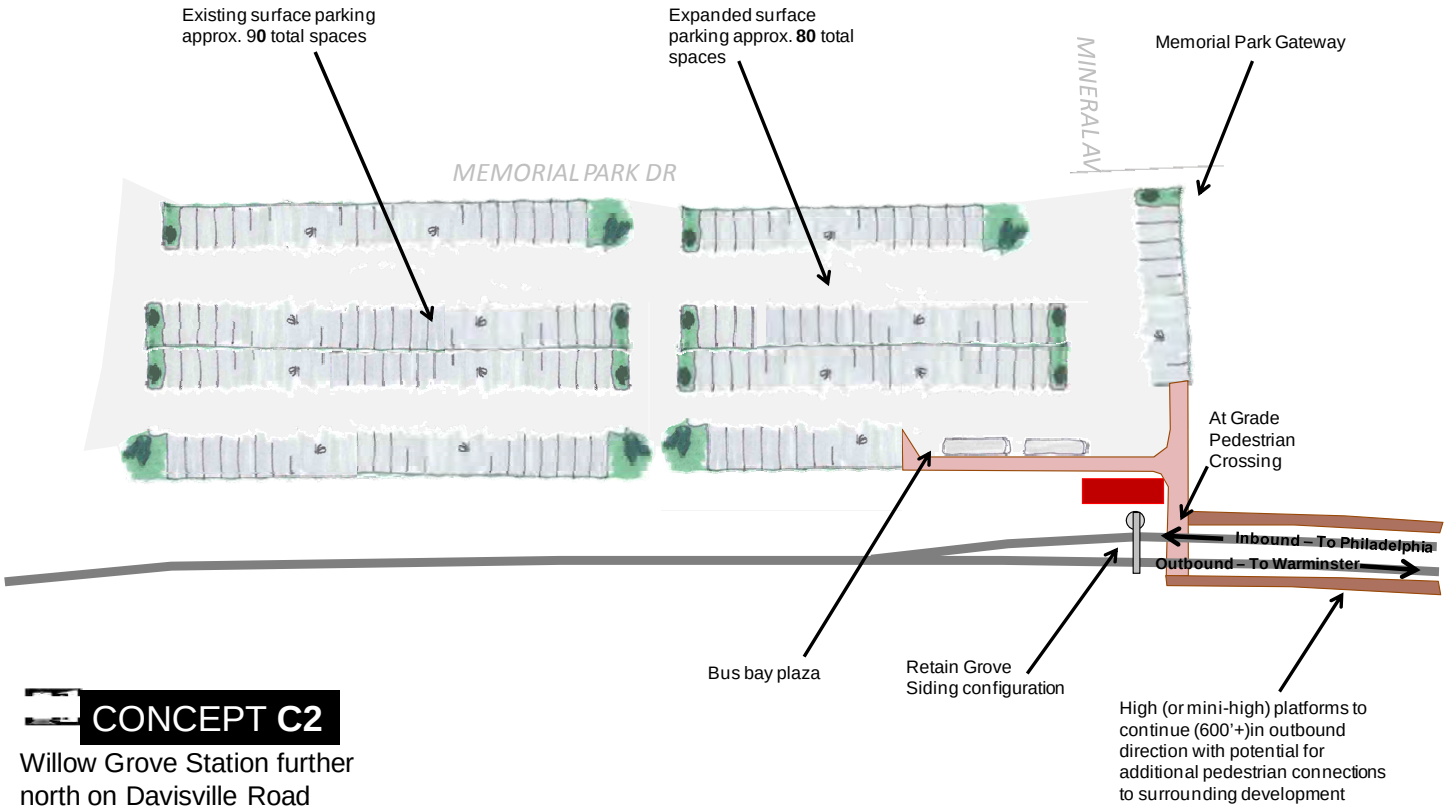


Exhibit 4-8: Concept C2 Overview and Sketch Details

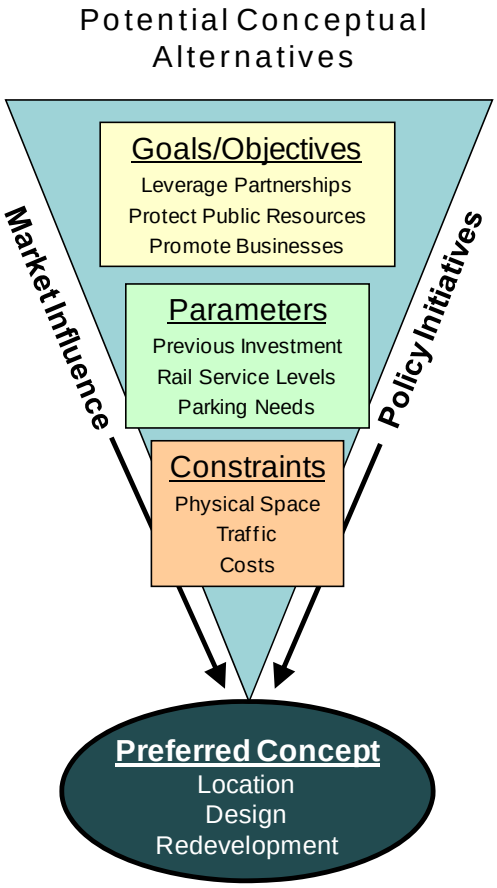




Concept Evaluation

Criteria were developed to help assess the relative merits of the six concepts and create a comparison based on the degree to which each satisfies the previously identified goals and objectives. **The primary outcome of this evaluation is to inform decision makers on the most promising concept to pursue in further analysis.** This process is referred to as 'screening,' and is typical for planning studies that weigh numerous alternatives to achieve the same goals and objectives. The screening process typically progresses from a qualitative ranking of concepts to a more detailed calculation of design and financial indicators. The stages of an overall screening process and the various inputs that shape selection of a preferred concept are depicted in Exhibit 4-9.

Exhibit 4- 9: Evaluation Screening Process - reducing many alternatives to a preferred scenario.



The initial screening evaluation features qualitative observations and quantitative determinations prepared at the conceptual level. A qualitative assessment is approached in a descriptive and subjective nature, based upon professional judgments of the study team. This analysis is sufficient to identify any 'fatal flaws' or other deficiencies inherent in each concept. The purpose of this

approach is to avoid expending study resources on concepts that at this early stage can already be determined as sub-optimal.

Other perspectives on the evaluation of these concepts includes SEPTA's Sustainability Program, adopted by the SEPTA Board in January 2011, which formalized the organization's commitment to sustainability. The plan's comprised of two key principles[21], stated below:

- **Leverage Existing Assets:** SEPTA is asset rich but resource poor - one of the most expansive rail transit systems in the United States, but also one of the oldest. Adhering to this principle, SEPTA has successfully advanced initiatives that focus on a "fix it first" mindset as outlined in the Authority's Five-Year Strategic Business Plan to improve the system's state of good repair.
- **Budget Neutral:** All sustainability initiatives are evaluated based on measures of cost effectiveness and return on investment. Adhering to this principle, SEPTA has successfully advanced cost-saving and revenue-generating initiatives.

These principles don't imply that new rail station projects aren't desirable to SEPTA. On the contrary, these statements serve to connect the theme of sustainability and state of good repair, and in particular, rededicates SEPTA to pursuit of forging innovative partnerships to advance such capital-intensive projects.

The main objective of this study effort is to identify the optimum location for advancing the design and capital components of a sustainable regional rail station, and then test the investment required against the surrounding redevelopment potential in order to forge a mutually beneficial partnership. Thus, **the conclusion of this evaluation process prompts either the elimination or rethinking of station relocation areas based on the trade-offs reflected through the evaluation criteria represented.** Exhibit 4-10 presents an evaluation matrix, depicting criteria developed and resultant findings.

[21] "SEPTA to host Industry Sustainability Conference," March 20, 2012 journal entry, www.septa.org/sustain/blog

Exhibit 4-10: Station Concept Evaluation Matrix

Evaluation Criteria	Station Area Concepts					
	Concept A1	Concept A2	Concept B1	Concept B2	Concept C1	Concept C2
Qualitative Observations						
Constructability/Cost – *the station facilities and associated property acquisitions required, are minimized while still improving the operational functionality of the station.*	☆☆☆ 0	★☆☆ 1	★★☆ 2	★☆☆ 1	☆☆☆ 0	★★☆ 2
Integration with adjacent community – *the station minimizes conflict with surrounding land uses, environmental concerns, and historic properties and fits within the character of surrounding development.*	★★☆ 2	★☆☆ 1	★★★ 3	★☆☆ 1	★★☆ 2	★★☆ 2
Growth potential - *is the site robust enough to function as a regional transportation hub in the future, accommodating the potentially larger number of daily users accessing the station by a variety of modes?*	★★★ 3	☆☆☆ 0	★★☆ 2	★★★ 3	☆☆☆ 0	★☆☆ 1
Property control/acquisition – *indicates that where private property is required for station expansion or relocation, the parcel is either currently available for sale, or relocation may prove beneficial to the existing property owner. The acquisition of land for station facilities must not be cost-prohibitive.*	☆☆☆ 0	★☆☆ 1	★★★ 3	★★☆ 2	☆☆☆ 0	★★☆ 2
Development potential surrounds new station – *based upon the site layout and potential redevelopment parcel locations, the new station could eventually be surrounded by larger-scale redevelopment efforts rather than be located at their periphery.*	★★☆ 2	★☆☆ 1	★★★ 3	★★☆ 2	★☆☆ 1	★☆☆ 1
Allows for phased development – *a site more supportive of modular development allows the individual components (double track, pedestrian underpasses, parking structures, etc.) to be included on an as needed basis and as funding becomes available.*	☆☆☆ 0	★☆☆ 1	★★☆ 2	★☆☆ 1	☆☆☆ 0	★★★ 3
Independence from other initiatives – *does the station site function only if other major initiatives are undertaken? For example, if access to the site is dependent upon the construction of new roads, or the extension of existing roads it may face greater implementation obstacles.*	☆☆☆ 0	★☆☆ 1	★★☆ 2	★☆☆ 1	★★☆ 2	★★☆ 2
Walk access - *good pedestrian circulation to, from, and across train platforms is essential for the smooth and safe operation of stations. Circulation patterns should be as simple, obvious, and comfortable as possible.*	★★☆ 2	★☆☆ 1	★☆☆ 1	★★★ 3	★☆☆ 1	★★☆ 2
Promotes shared use of facilities – *the station location maximizes the potential to allow shared use of parking with businesses and promotes further joint development opportunities.*	★★☆ 2	★☆☆ 1	★★☆ 2	★☆☆ 1	☆☆☆ 0	★☆☆ 1
Station area promotes existing community assets – *the station location provides for the best potential to enhance public investments already in place.*	☆☆☆ 0	★☆☆ 1	★★★ 3	★☆☆ 1	★☆☆ 1	★★☆ 2
Visual impact - *will the site yield a station that has the potential to be a prominent feature or landmark in the townscape?*	★★★ 3	★★☆ 2	★☆☆ 1	★★☆ 2	★☆☆ 1	☆☆☆ 0

☆☆☆- ★☆☆- GOOD ★★☆- BETTER ★★★- BEST

Exhibit 4-10 (continued):
Station Concept Evaluation Matrix

Evaluation Criteria	Station Area Concepts					
	Concept A1	Concept A2	Concept B1	Concept B2	Concept C1	Concept C2
Quantitative Observations						
Located along straight track – *High-level rail platforms associated with a new station are typically required to be located on a straight horizontal tangent and not within any curve along the alignment. This is to ensure that the minimum "gap" occurs between the edge of the platform and the door of the rail vehicle allowing for proper ADA access.*	Straight	Straight	1° 00' Curve	1° 00' Curve	1° 30' Curve	1° 30' Curve
Measure: Degree of curvature as specified in the Warminster Line track geometry chart.						
Parcel suitability to redevelopment – *following the programming of station facilities, the remaining parcels within and adjacent to the station site are of a size and shape that is sufficient for the scale of development envisioned.*	14 parcels, 10 owners, 0.9 acres	15 parcels, 11 owners 2.15 acres	22 parcels, 6 owners, 2.9 acres	19 parcels, 4 owners, 2.9 acres	9 parcels, 4 owners, 1.4 acres	14 parcels 6 owners 2.9 acres
Measure: Number of parcels immediately adjacent to the station concept site, number of property owners and largest size parcel of contiguous ownership.						
Land control (municipal/agency facilities) – *identifies the number station location parcels that include existing SEPTA or municipal land holdings, providing a greater degree of certainty regarding acquisition cost/potential.*	0.5 parcels	0 parcels	2.5 parcels	2.5 parcels	0.5 parcels	2.5 parcels
Measure: Number of station concept parcels utilizing SEPTA or Upper Moreland/County property (1/2 parcel counted for adjacent property).						
Minimal business displacement – *the development of a new station location should minimize the impact to or removal of currently viable businesses within the community.*	6	5	0	1	6	0
Measure: Number of operating businesses potentially displaced as determined from site assessment surveys.						
Ease of access – *automobile access and parking facilities are straight-forward and consolidated in a manner that supports quick entry and egress from the station.*	3 entry points 500 ft. walk	1 entry point 800 ft. walk	2 entry points 750 ft. walk	4 entry points 500 ft. walk	3 entry points 300 ft. walk	3 entry points 550 ft. walk
Measure: 1) Total number of automobile access points per station concept and 2) maximum walking distance from parking locations to a station platform.						

Exhibit 4-10 (continued):
Station Concept Evaluation Matrix

Evaluation Criteria	Station Area Concepts					
	Concept **A1**	Concept **A2**	Concept **B1**	Concept **B2**	Concept **C1**	Concept **C2**
Maximizes new parking on site – *the station area has the potential to increase existing station parking immediately adjacent to the station facility.*	290 spaces 53% increase	340 spaces 79% increase	300 spaces 58% increase	475 spaces 150% increase	255 spaces 34% increase	212 spaces 12% increase
Measure: 1) Total number of estimated parking for each concept and 2) the percentage compared to existing parking (**currently 190 daily/permit spaces**).						
Minimizes traffic delays around at-grade crossings – *the station site reduces the delays to the local traffic network that result from trains approaching and operating within the platform area adjacent to at-grade highway crossings.*	**+20** minutes 16% increase	**+20** minutes 16% increase	**-7** minutes 6% decrease	**-27** minutes 22% decrease	**-7** minutes 6% decrease	**-26** minutes 21% decrease
Measure: Estimated difference in daily traffic delay (**weekday baseline of 2 hours, 6 minutes**) at York, Moreland and Davisville Road based upon station site survey, potential signal improvements and comparable high-platform loading characteristics.						
Station footprint – *the station site has sufficient capacity, beyond parking space, to accommodate additional amenities and function as a transfer location to/from area transit routes.*	1.40 acres (north) 2.15 acres (south)	1.60 acres	1.27 acres (north) 0.39 acres (south)	1.27 acres (north) 2.20 acres (south)	2.65 acres	1.35 acres
Measure: Total contiguous acreage of station footprint.						
Environmental mediation – *the station location topography and drainage characteristics are generally supportive of expanded development and/or require minimal design remediation.*	12' vertical differential 600' distance to floodplain	12' vertical differential 600' distance to floodplain	2' vertical differential 250' distance to floodplain	2' vertical differential 250' distance to floodplain	8' vertical differential 200' distance to floodplain	8' vertical differential 200' distance to floodplain
Measure: 1) Maximum vertical distance from railhead to ground level of station footprint. 2) Distance from station footprint to 1 percent chance annual floodplain.						
Maximizes rail distance between stations – *the speed of commuter rail service is enhanced by maximizing distance between intermediate stations. The potential station site should promote greater distances between existing stations.*	0.61 miles - inbound to Crestmont	0.61 miles - inbound to Crestmont	0.77 miles - inbound to Crestmont	0.77 miles - inbound to Crestmont	0.87 miles - inbound to Crestmont	0.89 miles - inbound to Crestmont
Measure: Rail distance (miles), direction, and name of the nearest SEPTA Warminster Line Station						

Of the three alternative locations that were considered for a new Willow Grove Station, the current location was deemed most feasible for further testing against potential redevelopment scenarios. Key matrix findings and observations supporting this conclusion:

- The site is already situated on parcels that feature some degree of municipal and SEPTA control. Property acquisitions, a significant source of public subsidy for publicly endorsed redevelopment efforts, would therefore be minimized.
- Previous public investments have been focused in this area, including Memorial Park Drive, streetscape improvements, and pedestrian crossing initiatives. Enhancing the train station in place capitalizes on these previous expenditures and also limits the amount of additional public expenditure needed to address the suboptimal road network and pedestrian connections at other locations.
- Traffic impacts at the current site could be mitigated with improved signal technology, allowing the existing site to function better and strengthen business already in the vicinity, rather than displacing functional, albeit less desirable, commercial interests.

The South Davisville location initially shows strong potential for growth of adjacent redevelopment and a visual impact for creating a Willow Grove town center. Additionally, this site features straight track for implementation of high-level rail platforms. However, significant challenges remained:

- The lack of property control and the need for significant additional site preparations (closure of Davisville Road, construction of new roads, site remediation), ultimately requiring a greater expenditure of funds than implementing a rail station at the other two locations.
- The physical site constraints and potential traffic impacts at this location generated concern from stakeholders, during the initial technical review meeting, and from the general public.

The North Davisville location also provided some benefit for potentially limiting additional infrastructure expenditure, however it featured shortcoming such as:

- It would require displacement of functioning businesses, and would infringe upon War Memorial Park.
- This location would be less of a centerpiece to surrounding redevelopment in the Willow Grove core, and likely favor further redevelopment along the adjacent portion of Davisville Road.

The resultant selection of the existing location during this process represents the best possible compromise between the high cost (and public expenditure) and unsupportable intensity of redevelopment required for a South Davisville project and the limited pedestrian connections to Willow Grove core revitalization of any rail station relocated north in order to eliminate traffic impacts. The refined components for an enhanced train station facility at the current location are detailed in the subsequent chapter.

5. STATION DESIGN CONCEPTS AND CAPITAL PROGRAM ELEMENTS

Station Design Concepts

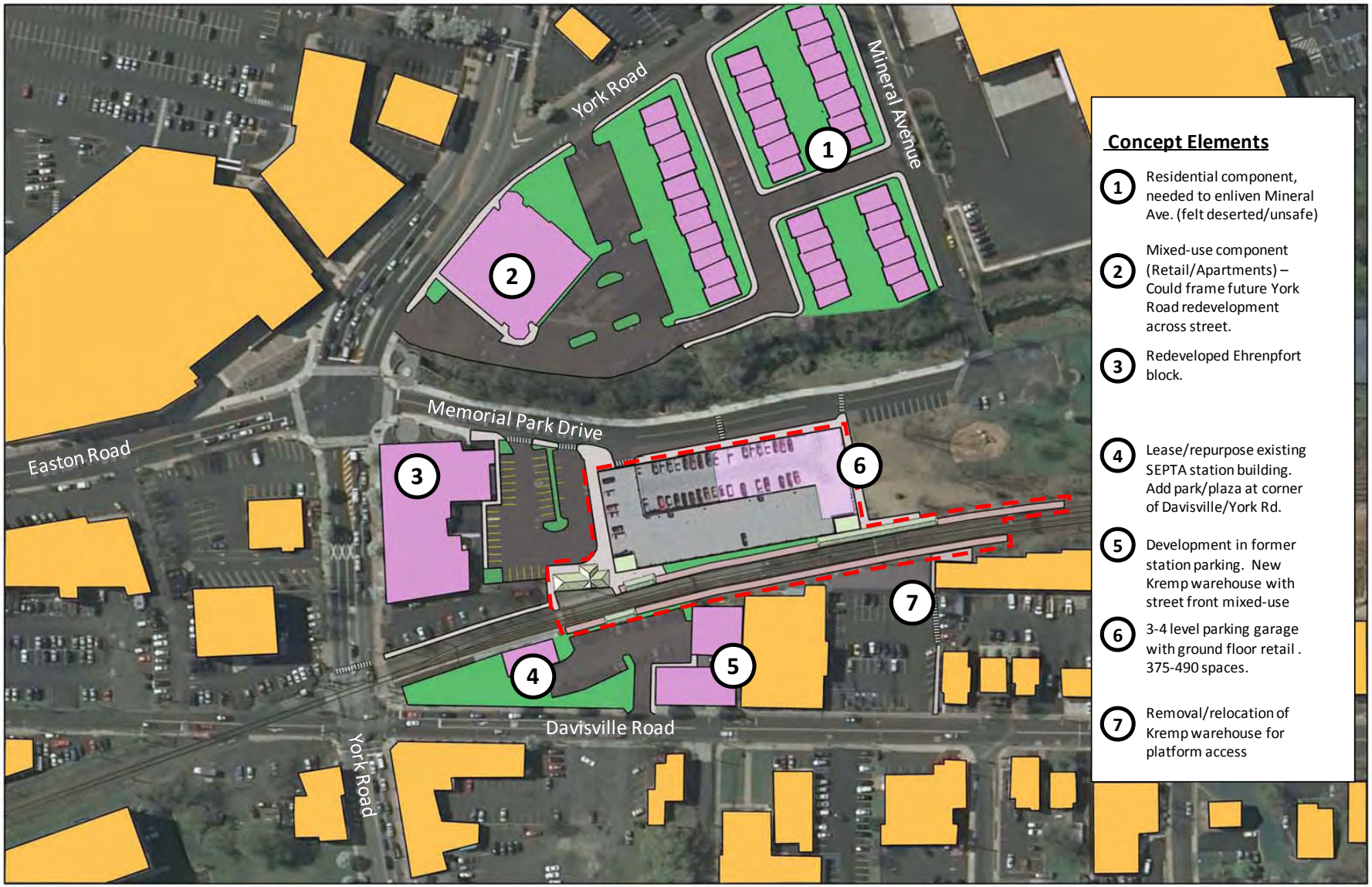
The evaluation and determination of the most feasible rail station location resulted in the selection of the current site of the SEPTA Willow Grove Station as the most favorable site for further development of a new station concept. Concepts B1 and Concept B2 from the initial site evaluation provided a starting point for developing the specific functional and technical aspects of a new Regional Rail station. This chapter outlines specific station design considerations, which will derive the preliminary capital program cost estimates for this refined concept. Design components will represent the balance between the technical requirements of enhancing the functionality of a suburban commuter rail station, while promoting maximum redevelopment potential in order to offset costs and justify the undertaking. Primary station design elements include (see Exhibit 5-1):

- **Track Improvements/Signals –** The reconfiguration of Grove Siding to extend double track through the station area and modifications to signaling to reduce grade crossing impacts.
- **Station Facility -** New building and passenger drop-off area relocated adjacent to a new inbound station platform.
- **Platforms –** The introduction of two high level platforms for each track, including canopies and ADA accessible ramps.
- **Parking** – Consolidation and net increase of parking spaces through the incorporation of a parking garage for use by both rail passengers and surrounding business/residents.

Additionally, the project team provided a cursory review of additional design components that would further strengthen the connection between the station and surrounding development. These secondary design elements included:

- **Streetscapes –** Improvements to automobile circulation, on-street parking, and the incorporation of bike racks, pedestrian paths and other features to improve and encourage non-automobile access to the station.
- **Wayfinding/Signage –** Identification of key locations and signage that would promote the station and facilitate patrons locating ingress and egress points into the station area.

Exhibit 5-1: Refined Station Concept Elements



Station Facility

SEPTA Langhorne Station

The refined concept proposes the construction of a new station building behind the Old York Road Ehrenpfort Block of businesses. Automobile access to the station would be provided primarily along Memorial Park Drive, with secondary ingress/egress provided along Mineral Avenue. The station building would be adjacent to a new four story parking structure and would consolidate ticketing; passenger waiting, passenger pick-up/drop off, and a bus transfer area for smaller transit vehicles on the inbound side of the newly double tracked station area. The station facility dimensions, amenities and design themes would be consistent with other station upgrades, such as recently occurred at Langhorne, Ambler and Fort Washington SEPTA Regional Rail Stations. The approximately 54 existing business parking spaces immediately behind the Ehrenpfort block would be reconfigured in a design with 36 new parking spaces, to allow for auto circulation and transit bays. The resultant parking deficiency (between old and new) would be accommodated through introduction of on-street parking and excess parking garage capacity.

The physical geometry and site remains relatively constrained, therefore only 30-foot or smaller transit vehicles are to be received on-site in the vehicular turn-around area. This would accommodate existing SEPTA Route 310 Horsham Breeze, TMA, and anticipated future shuttle service to a redeveloped Willow Grove Naval Air Station. Longer buses (40-foot), used on occasion when SEPTA needs to substitute buses for rail service, would continue to access the station along Memorial Park Drive. Traffic flow to the station facility would feature separate entrance and exit points, allowing for a one-way flow of vehicles for passenger drop off.

Platforms


SEPTA Ft. Washington Station

Two new high-level platforms would be constructed along the inbound and outbound tracks. The platforms would be slightly offset, with the outbound platform beginning beyond the existing railroad at-grade pedestrian crossing[23].

The inbound platform would begin approximately 60 feet further north of the outbound platform, to

[23] SEPTA technical review has indicated that several factors, such as curving trackage and high level platforms, will limit sight distances for a pedestrian crossing in this location. Further design and safety analysis would be needed to determine the ultimate feasibility and location for retaining an at-grade crossing component of this station design.

accommodate the station facility/sightlines and provide sufficient buffer to assure rail cars would not be in danger of striking the platform while negotiating the relocated track switch. Platforms would extend a minimum of 550-600 feet in length, northward from the station area.

A minimum of two ADA ramps will be provided at the southern end of each platform, with accessible parking being made available at the ground level of the parking garage. Additional stair and ramps can be provided at the northern end of the inbound platform following construction of the parking garage. Platform access on the northern end of the outbound platform would be facilitated by the relocation of the Kremp Florist warehouse.

Physical constraints associated with Kemp Florist warehouse and track proximity

Platform canopies will be provided, along with shelters and glass block windscreens for on-platform passenger waiting areas. The construction technique is anticipated to utilize precast, high level platforms erected atop precast foundation with a minimum platform width of 10 feet and an additional 8 feet in width at shelter locations per SEPTA design guidelines.

Other platform design considerations include the demolition of existing low-level platforms, the incorporation of two catenary towers within the platform area, and the physical constraints (slope/building clearance) anticipated to be encountered during construction of the outbound platform as it extends behind Kremp Florist.

Structured Parking Garage

Based on the comparative analysis of parking provision at select SEPTA stations, a target was established to provide parking for approximately 65% of current weekday boardings (see Appendix C). This results in a total of 320 spaces needed for current SEPTA boardings, and at a minimum represents a 68% increase above the currently provided 190 daily and permit parking spaces available. The design for parking also includes municipal needs, accommodation of displaced parking resulting from the new station facility construction, and room for parking demand growth.

To fulfill these needs within the constraints of available or readily obtainable property surrounding the station, a structured parking design is incorporated into the refined concept, on the site of the existing SEPTA and municipal surface parking lot, located between Memorial Park Drive and the

Warminster Line tracks. The parking structure footprint would measure approximately 128 feet in width by 300 feet in length and feature a single point of access off of Memorial Park Drive. Approximately 9,500 square feet of ground floor retail space would be included, with some frontage facing Memorial Park.

The garage would feature ADA accessible parking on the ground level, in addition to spaces designated for rental cars, to accommodate an existing business. Using a two-way, single parking ramp arrangement, each full length ramp/level would accommodate just under 120 vehicles. Initial demand would be met with a four-level structure, providing parking for approximately 375 vehicles. The facility could be specifically designed, however, to accommodate one additional 5th level. This additional level could then be implemented only in direct response to further redevelopment of existing surface parking, rail ridership growth, and business needs.

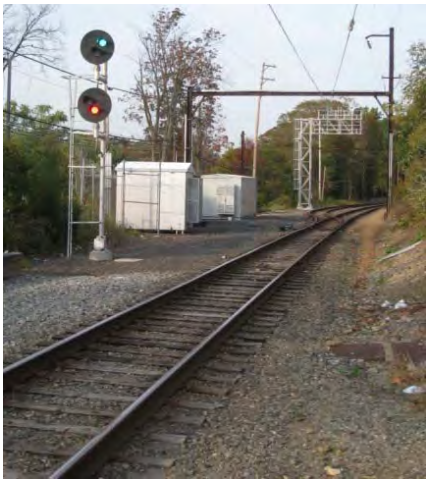
Example of structural steel municipal parking garage - Lewistown, ME.

The structure would include three (3) stair towers. A stairway entrance on Memorial Park Drive would specifically accommodate access to the garage from surrounding development. The northern-most trackside tower would accommodate an elevator, and would be designed such that the longer term inclusion of a pedestrian bridge crossing of the tracks with additional elevator/stair tower to the outbound platform would not be precluded. The parking garage could feature structural steel construction with an exterior designed to integrate with SEPTA station and municipal design themes. The future incorporation of a solar power array at the top level along with stormwater management would be included as environmentally sustainable design elements.

Soil analysis and subsequent construction of Memorial Park Drive have indicated that alluvial soils are present, particularly near Memorial Creek. These soils are not well suited for baring significant structural loads, and the reduced foundation loads afforded by structural steel construction, along with some cost savings and a more open design, could justify this type of facility. Furthermore, the concept design incorporates both a parallel parking lane and sidewalk between Memorial Park Drive

and the parking garage, features which are both functional for the use envisioned and which also serve to place the structure as far as possible from the waterway and the most substandard soils.

Track Improvements/Signals



Grove Siding Signal

As an initial step towards design of a new station area, without undertaking the additional expense to increase double track beyond what is needed to support two high-level platforms, this concept envisions an extension of the existing Grove Siding 680 feet southward through the station area. Beyond Ardsley in the outbound direction, the remaining 7 miles of the Warminster Line are single track, with the Grove Siding as the only location for trains to pass until reaching the terminal track in Warminster. Grove Siding is 2,500 feet in length and located immediately north of the existing Willow Grove Station. The removal and repositioning of signal equipment would enable double-track to be extended through the station area. The further expansion of double track along the Warminster Line is a long term goal of SEPTA, to enhance service frequency and performance of this line. The siding turnout would be relocated just north of the at-grade crossing of Old York Road, maintaining single trackage through multiple at-grade highway crossings[24].

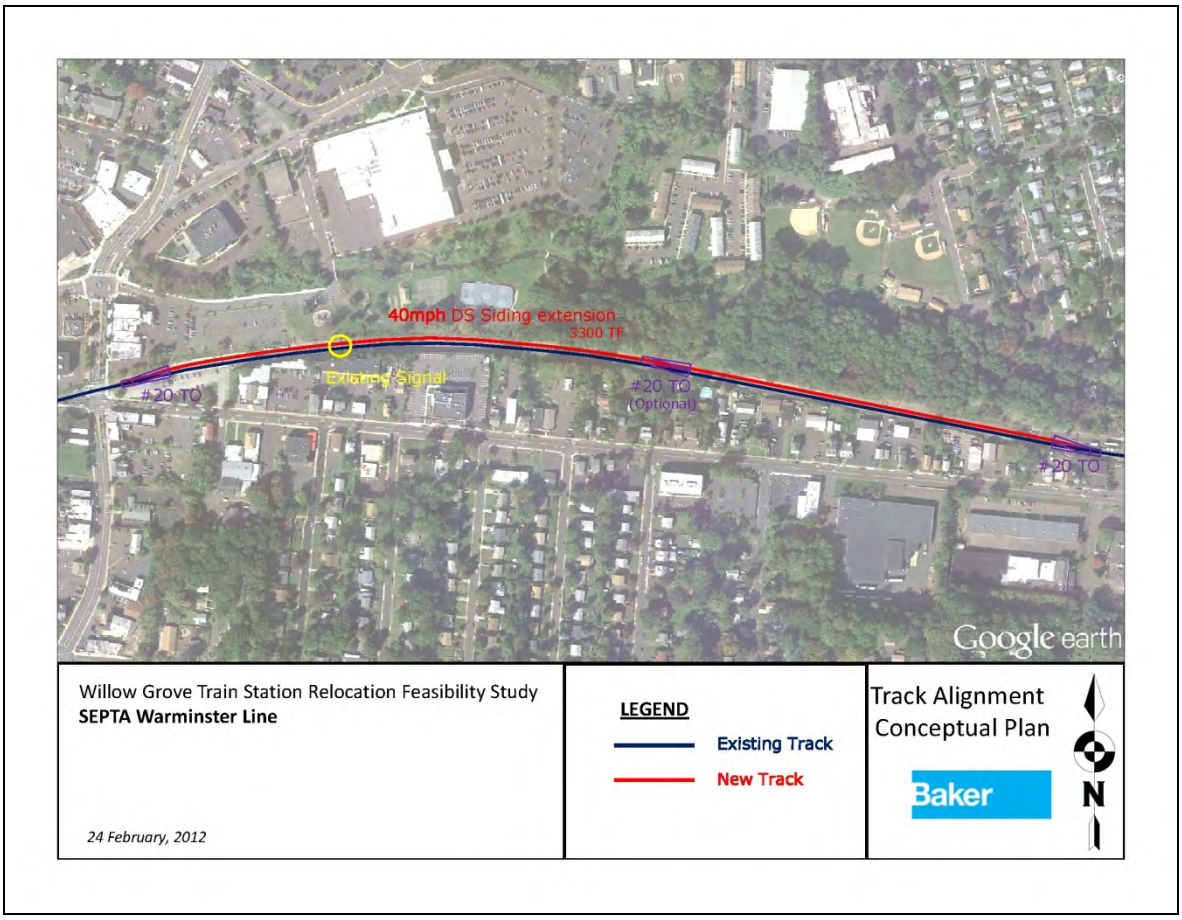
Depending upon desired operational scenarios, an additional turnout could be placed at a mid-point in Grove Siding to allow run around of trains while still providing access to each platform. This configuration exists at Warminster, with an 800 foot 'pocket track' located inbound from another turnout that provides access to the single platform at that location. Replicating this arrangement at Willow Grove would enable future transit service expansion to feature trains originating and terminating in Willow Grove (see Exhibit 5-2).

In addition to relocating the Grove Siding turnout, the existing signaling system, tower, and control cabinetry would be removed with enhanced grade-crossing circuitry installed to enable inbound trains within the station area to not immediately trigger crossing gates along Old York Road. The modifications envisioned include implementing an Intelligent Grade Crossing at this location, which combines Intelligent Transportation Systems on roadways with Intelligent Railroad Systems such as Positive Train Control (PTC). PTC systems provide continuous, real-time information on train location and speed which can be integrated with constant warning time (CWT) devices to give a consistent warning time to drivers that can account for trains stopping within the approach control circuits of the Old York Road grade crossing. This application of technology could therefore limit

[24] SEPTA technical review indicates that the siding points must be located more than 20 feet from the highway crossing to stay clear of accidents and snow accumulation from plowing.

the activation of traffic control devices until a minimum of 20 seconds prior to departure from the station platform. This feature may reduce by up to 30-40 seconds the current inbound grade crossing activation time, which averages approximately 2 minutes and 20 seconds.

Exhibit 5-2: Potential Grove Siding Track Reconfiguration.

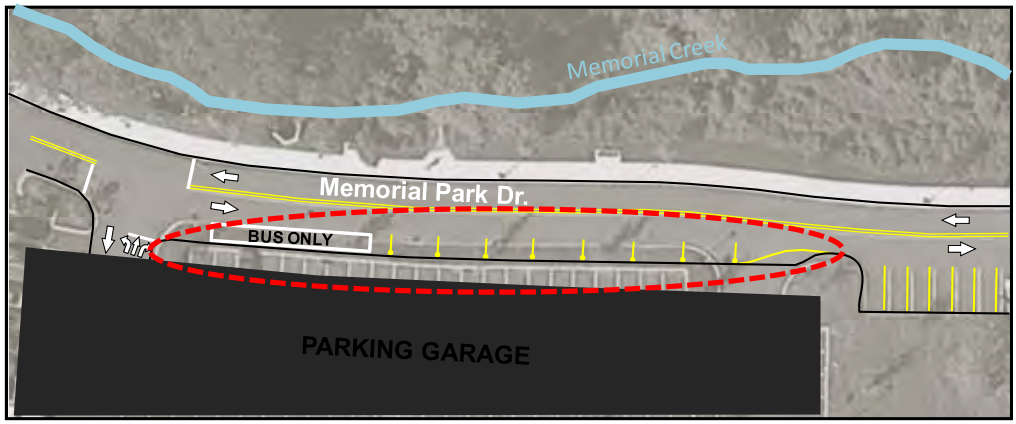


Streetscapes

New access points into the station area and the long-term potential to introduce new traffic circulation patterns could re-enforce the idea of creating pedestrian-friendly environments in close proximity to the revitalized train station. Two specific modifications are envisioned in this design concept:

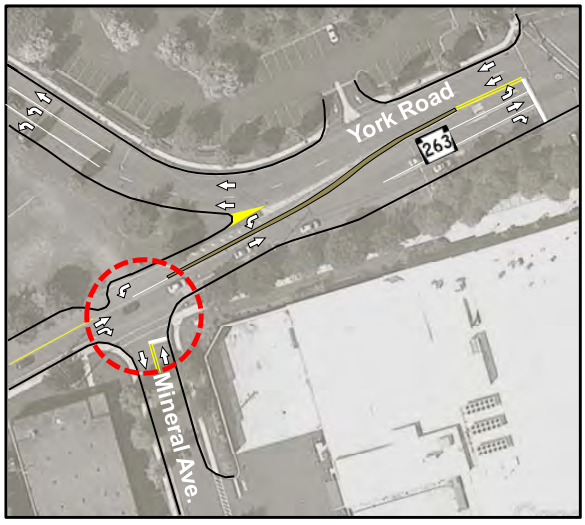
1) **Memorial Park Drive Streetscape** – The design of the parking structure is intended to be located a far as possible from Memorial Creek which flows just north of Memorial Park Drive. This is due to the presence of substandard alluvial soils located adjacent to this watercourse. The resultant increased set-back for the parking and retail component of this parking garage would thus allow for a parking lane along the southern side of Memorial Park Drive as well as an additional SEPTA bus drop-off for larger buses that cannot directly

access the station building. This parking would add a more urban element to Memorial Park Drive, provide further traffic calming for the pedestrian movements anticipated, and directly serve ground floor retail locations.



Memorial Park Drive Streetscape

2) **Left Turn into Mineral Avenue** – To improve access and circulation around the newly proposed train station concept, access into the station area from the northeast along York Road (PA 263) would be facilitated by adding a left-turn lane into Mineral Avenue. Currently all traffic heading southbound is diverted just before the Willow Inn to a signalized intersection with Easton Road (PA 611). This new movement would support direct station access and into new surrounding development. It is anticipated that the traffic calming introduced both along Mineral Avenue and Memorial Park Drive would prevent this route becoming a preferred shortcut for through traffic wishing to continue southbound.

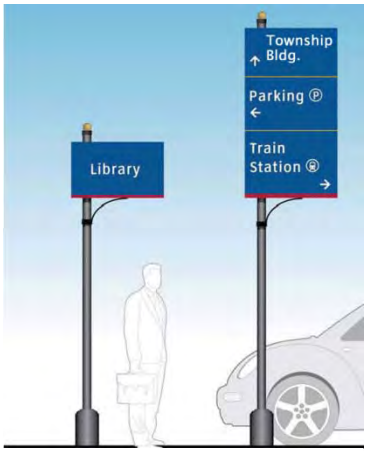


Left Turn into Mineral Avenue

The streetscape improvements illustrated here, could also support the introduction of bike lanes in certain areas (as well as shared road design for Memorial Park Drive and Mineral Avenue - sharrows) and further promote the recreational connectivity to Memorial Park.

Wayfinding/Signage

Construction of a new train station facility and access points will require the installation of signage to provide wayfinding information. Highway signage will be installed to help people navigate to the station from surrounding roads and highways. Outlying locations identified would include the approaches to the station area from Moreland, York, Easton, and Davisville Roads. At a minimum, gateway signage at Memorial Park Drive and Mineral Avenue, identifying station parking would be implemented. Signage on Davisville Road near the existing station and Old York Road intersection would be beneficial in guiding drivers to the passenger pick-up/drop off location adjacent to the new station facility off Memorial Park Drive.



Wayfinding Signage

Pedestrian-based signage would be beneficial for both access to the station and to provide passengers exiting trains with information on key locations nearby (i.e. township building, library, Memorial Park, etc.) Pedestrian signage to platform entrance points, especially on the outbound platform behind Kremp Florist, would also be beneficial, as the platforms would be slightly below grade and not highly visible from the street. Internal station area signage would be implemented, to assist people in locating the track crossing locations, platforms, ticket counter, restroom, handicapped parking, parking payment kiosk, and any other facilities.

Capital Program Elements

Estimated capital costs incurred for the Willow Grove Station Redevelopment Concept have been prepared for a number of the design elements described above. In anticipation of the subsequent implementation planning, an initial project cost was prepared in high-level detail in Table 1. An initial project cost for the design elements identified for this concept is estimated to be **$26.7 million**. This initial project cost will serve as a baseline for developing the range of station costs to be explored in the implementation planning chapter that follows. In this analysis, a lower bound will be contemplated to identify if a less capital intensive scenario could still achieve improvement in station functionality and provide some limited development potential. A higher bound for costs in the implementation timeframe would include full build out and some of the optional features described in the design feature descriptions, such as a full upgrade of Willow Grove siding to track speed (40mph), expanded parking garage, and installation of a pedestrian bridge to connect inbound and outbound platforms. In all cases, capital costs have been derived for similar station construction projects and local experience. Further stages of the project development process and initial preliminary engineering will further identify specific site preparation challenges, more exact unit cost/quantities, and allow for less contingency as costs are refined further.

Exhibit 5-3: Estimated Project Costs for the Willow Grove Station Redevelopment Concept		
DESIGN ELEMENT	**DESCRIPTION**	**ESTIMATED COST (000s)**
Track Improvements /Signals	Extend existing Grove Siding 680 feet inbound, 20 mph track, new #15 turnout; Design and installation of new track signals; train detection, and grade-crossing circuitry at York/Davisville Road crossing	$1,020
Station Facility	Design and construction of passenger waiting area, ticket counter, and restroom; Parking lot redesign, paving, striping, and landscaping. Bus shelter and street furniture for transfer area.	$1,250
Platforms	Design and construction of two 550-foot ADA-compliant, high-level platforms with canopy areas; Four (4) ramps total for two platform access areas per platform. Retaining walls/additional site prep for outbound platform; New ADA at-grade pedestrian crossing.	$6,855
Structured Parking Garage	Construction of a 4 story structural steel parking facility with 375 spaces, three stair wells and one elevator. Includes 9,500 square feet of ground floor retail space.	$8,100
Streetscape Improvements	Inclusion of new left turn into Mineral Avenue. Additional signage.	$100
	Subtotal Capital Costs	***17,325***
	Scope Contingency (15%)	$2,599
	Subtotal Construction Costs	***$19,924***
	PE Design (15%)	$2,989
	Construction Engineering/Inspection (8%)	$1,594
	Maintenance of Traffic (MOT) and Mobilization (20% of trackwork construction ONLY)	$204
	Right-of-Way/Utilities (10%)	$1,992
	Estimated Project TOTAL COST	**$26,703**

6. IMPLEMENTATION PLANNING

The capital program for the Willow Grove Station Concept represents the end product of a planning process focused on a redevelopment vision for the existing train station and surrounding parcels. The vision is a generalized representation of possibilities that may entice private development, but as such it will ultimately be constrained by fiscal limitations and municipal approvals. Implementation Planning recognizes that this vision is unlikely be implemented at once, and a phased approach to development and station area upgrades may be assumed. This phased approach would be consistent with projections of funding availability, SEPTA Warminster Line service planning and ridership growth, parking demand trends, and market timing of surrounding development. The ultimate station development costs are increased over the duration of project implementation as a result of proceeding incrementally. Also, more care will be required to assure future design compatibility and seamless integration of physical components. However, the incremental approach may afford the most funding flexibility to SEPTA and municipal stakeholders.

An analysis has been prepared of the stepwise increments from the lowest and highest bounds of envisioned station area capital investments. The implementation plan presented in this section identifies an initial near-term, mid-term and longer term implementation scenario. At each increment, the decisions, capital improvements, and coordination among stakeholders is outlined.

As a result of this process, an initial expenditure is estimated to be $15.1 million, representing perhaps the lowest cost upgrade to the station without fully implementing all the detailed capital program elements. This level of investment can still gain improvements over train/traffic conflicts at Old York Road and provide the functional integration of ADA compliant features at the station, but would do less to engage/entice new development and address long term parking deficiencies. As such, this scenario is viewed for implementation planning purposes as the near term (0-3 year) interim step towards more fully investing in the train station as funding/developer interest continue to grow. As a contrast, a long term scenario, that envisions the full buildout of the station as detailed in the description of capital program elements, is estimated at over $32 million. Each step along the proposed implementation timeline will afford stakeholders the opportunity to make informed decisions on how logistically, and determine if even fiscally possible, it is to proceed fully with station redevelopment.

Lowest cost station upgrade improvements include:

- Two new high-level platforms
- Expanded/enhanced surface parking (60 new spaces)
- New trackwork enabling passing and future double track integration
- Improved grade crossing train detection, reduced gate activation
- New signage, new Mineral Avenue left turn access to the station

Near Term Investments (0-3 years)

Key Decisions

- **Expand surface parking** – This is an interim requirement, necessitated by the fact that construction of a future parking garage and the alteration of the existing parking behind the Ehrenpfort block will remove a significant portion of currently available parking (up to 68 community and 74 SEPTA parking spaces) during site preparation and construction phases.
- **Movement of Kremp Florist warehouse** – The physical constraints and unfavorable sightlines/safety issues (up to 50% of the inbound platform obscured from view) would necessitate a discussion and plan for future relocation and funding of a new Kremp Florist warehouse. The planning of this new warehouse would need to coincide with the reprogramming of the existing Davisville Road SEPTA surface parking.
- **Inclusion and prioritization of Willow Grove trackwork/platform funding needs on SEPTA Capital Program** – While a generalized amount for Warminster Line station upgrades have been indicated in the current Capital Program, these amount can be updated as necessary based on the trackwork modifications/signal upgrades and initial station redevelopment as determined in this implementation plan – specific to the Willow Grove station. Key to this decision is also the ultimate prioritization of improvements at Willow Grove with respect to other anticipated/deferred station upgrades (i.e. Hatboro) along the line. Inclusion of the project elements in the Capital Program does not guarantee full funding is in place, but serves as a placeholder for SEPTA capital needs determination.

Capital Improvements

The following station elements would be implemented in the near term:

- **High-level platforms and canopies** – SEPTA technical review indicates their preference for installing two high-level platforms concurrent with extension of Grove Siding. This approach indicates that a single platform upgrade (while perhaps more cost effective in the near term only) is not favored and that initial cost savings in station infrastructure in the near term would primarily result from not constructing a new passenger waiting building to replace the existing structure and enhance small bus and vehicular circulation.
- **Extension of Grove Siding through the station area** – would require an additional and intermediate switch within the Grove Siding in order to support access to only one platform (inbound side - as indicated above) and still allow trains to pass. Upon mid-term implementation of the outbound high-level platform, the intermediate switch would potentially allow for originating/terminating trains at Willow Grove.
- **New/enhanced surface parking at Verizon/Bally's site** – Requiring existing parking lots to be joined, some expansion on the former Bally's site to merge with existing Verizon parking, and restriping/resurfacing.
- Pedestrian connection to York Road along Inbound track

- Pedestrian crossing and intersection improvement on York/Davisville Road
- Mineral Avenue left turn

Transit Service Planning Implications

- **Service Planning for Increased Warminster Line service** – The trackwork and infrastructure envisioned could support additional train service to Willow Grove. The ability to integrate this service into the fleet, labor, and scheduling requirements for the Warminster Line should commence, such that additional service in future years can coincide with the completion of capital improvements. Initial options for SEPTA to explore include the extension of some short-turn trains to/from Glenside (see Exhibit 6-3) to travel express to Willow Grove. This approach would necessitate additional capital costs (train sets) and increased operational costs (labor time) as trains terminating in Willow Grove will have limited ability to return to Center City (and may require storage). However, this may still prove a less complex proposition than adjustment of schedules to achieve uniform headways at Willow Grove (i.e. closer to every 15 minutes) during the peak.
- **Assess transit growth potential** – Generalized targets of parking accommodation and ridership were assumed for this project. In particular, as details emerge from the Horsham Township Authority regarding redevelopment proposed for the Willow Grove Naval Air Station, the anticipated transit travel demand to/from the Willow Grove Station will come into focus. This station is envisioned as the transit gateway to this new development, with the impacts on ridership, station area circulation impacted in this role.

Agreements/Coordination

- Establish a parking lease agreement with new Bally's site owner for additional Willow Grove Station surface parking during the interim period prior to construction of a new parking facility. The terms of the agreement could be conditioned on the available funding and likely timeline for parking garage construction. In anticipation of this approach, the current agreement between SEPTA and Verizon would need to be reviewed to determine if physical alterations (removal of fencing and connecting surface parking directly to the Bally' sites) can be negotiated. In addition to this effort, Upper Moreland Township could commence safety/aesthetic upgrades surrounding the Verizon lot along Mineral Avenue (vegetation removal/lighting) – as a possible component of ongoing streambank stabilization initiatives.
- Environmental Clearance – While initial environmental screening has been completed, an environmental assessment would be needed in anticipation of federal funding solicitations to contribute to the capital costs outlined herein. As surrounding land uses have been previously disturbed, a Finding of No Significant Impact is anticipated. Environmental clearance must be received prior to the obligation of federal funds.
- Design study to determine the configuration and impact of a left turn into Mineral Drive. Determination and agreement on additional right-of-way that may be potentially needed.

This concept element to coordinated with ongoing and proposed improvements for the PA 263 corridor, and consistent with PennDOT standards and approval process.

- Engage Ehrenpfort businesses and parcel owners to acquire additional rights for redevelopment of the parking area adjacent to the proposed new station facility.
- Continue revitalization planning to identify additional areas for parcel assembly (similar to South Davisville block initiative), funding mechanisms, and facilitate developer inquires to these areas. Effect changes in zoning/density to facilitate identified redevelopment parcels or targets (dwelling units/square footage) to generate sufficient offsets to further station area investments at the municipal level.

Exhibit 6-1: Estimated **Near Term** Costs for the Willow Grove Station Redevelopment Concept

DESIGN ELEMENT	**DESCRIPTION**	**ESTIMATED COST (000s)**
Track Improvements /Signals	Extend existing Grove Siding 680 feet inbound, upgrade as a through 40mph track, three new #20 turnouts to allow platform access and passing; Design and installation of new track signals; train detection, and grade-crossing circuitry at York/Davisville Road crossing	$2,220
Platforms	Design and construction of two 550-foot ADA-compliant, high-level platforms with canopy areas; Two (2) ramps total for two platform access areas per platform. Retaining walls/additional site prep for outbound platform; New ADA at-grade pedestrian crossing.	$5,905
Surface Parking Expansion	Resurfacing of Verizon lot, acquisition/expansion of 60 additional spaces on Bally site. Improved landscaping and lightinh for enhanced safety.	$1,413
Streetscape Improvements	Inclusion of new left turn into Mineral Avenue. Additional signage.	$50
	Subtotal Capital Costs	***9,588***
	Scope Contingency (15%)	$1,438
	Subtotal Construction Costs	***$11,026***
	PE Design (15%)	$1,654
	Construction Engineering/Inspection (8%)	$882
	Maintenance of Traffic (MOT) and Mobilization (20% of trackwork construction ONLY)	$444
	Right-of-Way/Utilities (10%)	$1,103
	Estimated Initial Implementation COST	**$15,109**

Exhibit 6-2: Near Term Implementation - Station Concept Elements

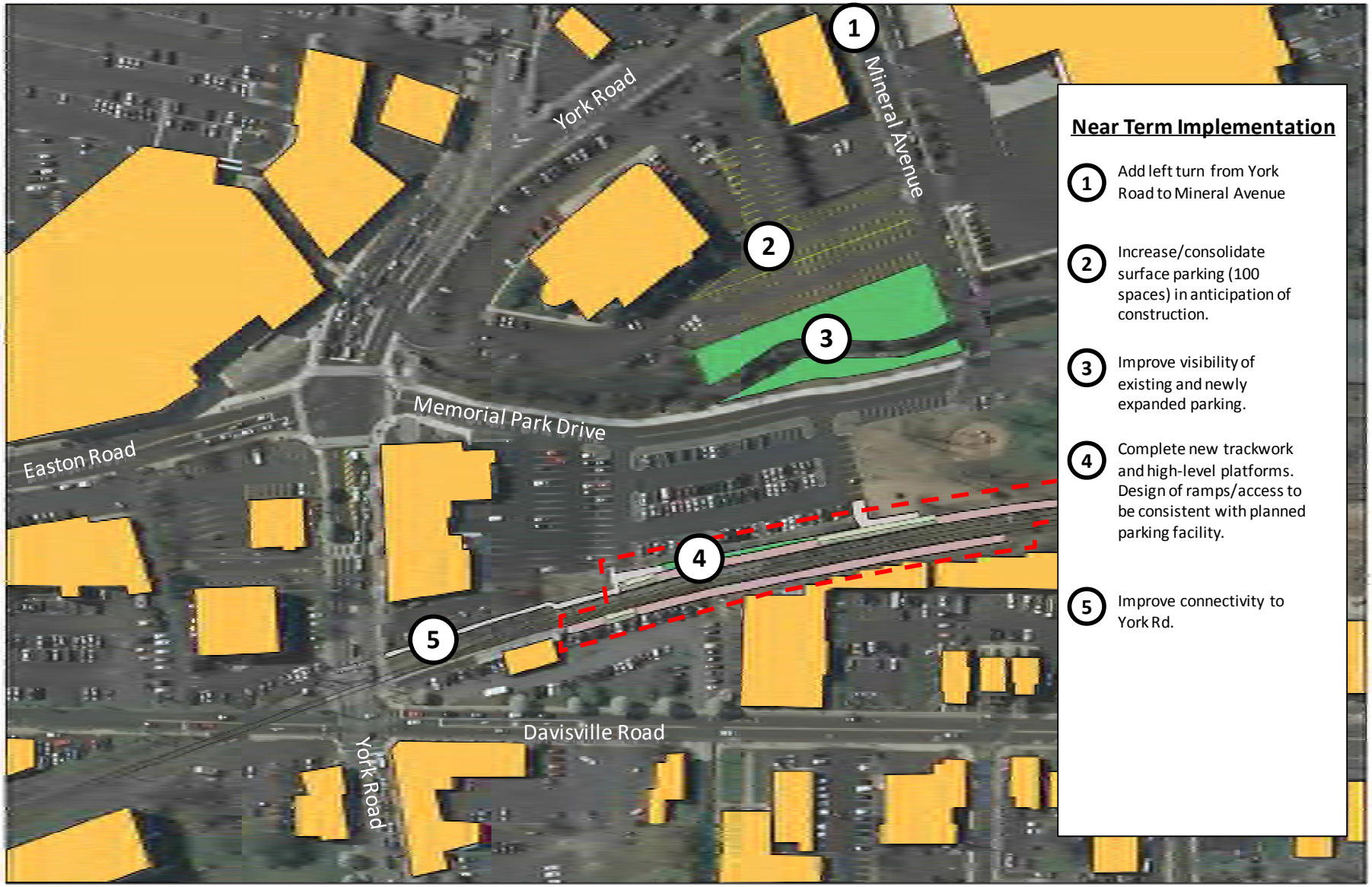


Exhibit 6-3: Service Planning Implications for Increased Willow Grove Rail Service

MONDAYS through FRIDAYS (Except MAJOR HOLIDAYS)

TO CENTER CITY

Fare Zone	Services	Stations	Train Number	401	499	403	405	407	409	4211	4311	4213	6415	415	4219	4815	419	423	427	431	435	439	443	447	451	4265
				AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM
4		Warminster		—	—	—	—	5:40	—	R6:17	—	6:50	R7:14	—	R7:49	—	8:40	9:41	10:41	11:41	12:41	R1:41	2:41	R3:41	R4:42	R5:37
4		Hatboro		—	—	—	—	5:44	—	6:21	—	6:54	7:19	—	7:54	—	8:44	9:45	10:45	11:45	12:45	1:45	2:45	3:45	4:46	5:41
3		Willow Grove		—	—	—	—	5:49	—	6:26	6:43	6:59	7:24	7:50	7:59	—	8:49	9:50	10:50	11:50	12:50	1:50	2:50	3:50	4:50	5:48
3		Crestmont		—	—	—	—	5:51	—	6:28	E	7:01	7:26	E	8:01	—	8:51	F9:52	F10:52	F11:52	F12:52	F1:52	F2:52	F3:52	F4:52	F5:50
3		Roslyn		—	—	—	—	5:52	—	6:31	X	7:04	7:29	X	8:04	—	8:53	9:54	10:54	11:54	12:54	1:54	2:54	3:54	4:54	5:53
3		Ardsley		—	—	—	—	5:56	—	6:34	P	7:07	7:32	P	8:07	—	8:55	9:56	10:56	11:56	12:56	1:56	2:56	3:56	4:56	5:56
3		Glenside		—	—	—	5:29	5:59	6:29	6:38	6:51	7:10	7:35	7:58	8:11	8:19	8:59	10:00	11:00	12:00	1:00	2:00	3:00	4:00	4:59	6:00
3		Jenkintown-Wyncote		—	4:31	5:01	5:31	6:01	6:31	—	6:54	7:13	7:40	8:01	—	8:23	9:01	10:03	11:03	12:03	1:03	2:03	3:03	4:03	5:02	6:03
2		Elkins Park		—	4:33	5:03	5:33	6:03	6:33	E	6:57	E	E	8:04	E	8:25	9:03	10:05	11:05	12:05	1:05	2:05	3:05	4:05	5:04	6:06
2		Melrose Park		—	4:35	5:05	5:35	6:05	6:35	X	6:59	X	X	8:06	X	8:27	9:05	10:07	11:07	12:07	1:07	2:07	3:07	4:07	5:06	—
1		Fern Rock T. C.		4:08	4:38	5:08	5:38	6:08	6:38	P	7:02	P	P	8:09	P	8:30	9:08	10:10	11:10	12:10	1:10	2:10	3:10	4:10	5:09	6:11
1		Wayne Junction		4:12	4:42	5:12	5:42	6:12	6:42	—	7:06	—	—	—	—	8:34	9:12	10:13	11:13	12:13	1:13	2:13	3:13	4:13	5:13	6:15
C		Temple University		4:18	4:48	5:18	5:48	6:18	6:48	6:54	7:11	7:28	D7:56	8:18	8:27	8:40	9:18	10:19	11:19	12:19	1:19	2:19	3:19	4:19	5:19	6:21
C		Market East Station		4:25	4:55	5:25	5:55	6:25	6:55	7:00	7:17	7:34	D8:02	8:25	8:33	8:47	9:25	10:25	11:25	12:25	1:25	2:25	3:25	4:25	5:25	6:28
C		Suburban Station		4:30	5:00	5:30	6:00	6:30	7:00	7:05	7:22	7:39	D8:07	8:30	8:38	8:52	9:30	10:30	11:30	12:30	1:30	2:30	3:30	4:30	5:30	6:33
C		30th Street Station		4:34	5:04	5:34	6:04	6:34	7:04	7:09	7:26	7:43	8:11	8:34	8:42	8:56	9:34	10:34	11:34	12:34	1:34	2:34	3:34	4:34	5:34	6:37
C		University City		4:36	5:06	5:36	6:06	6:36	7:06	7:11	7:28	7:45	—	8:36	8:45	—	9:36	10:36	11:36	12:36	1:36	2:36	3:36	4:36	5:36	6:39
		Train continues to		AIR	AIR	AIR	AIR	AIR	AIR	NWK	ELW	WIL	—	AIR	MHK	CHW	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	AIR	WIL
		(see *Destination Codes*)		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM

Evening Fares Apply →

TO GLENSIDE AND WARMINSTER

Fare Zone	Services	Stations	Train Number	6400	402	404	5408	412	416	420	424	428	432	436	438	440	442	5444	6444	6446	6448	450	2450	454
				AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM
C		University City		—	5:27	6:27	—	8:27	9:27	10:27	11:27	12:27	1:27	2:27	2:57	3:27	3:57	—	—	—	—	6:57	8:08	8:57
C		30th Street Station		4:59	5:30	6:30	7:33	8:30	9:30	10:30	11:30	12:30	1:30	2:30	3:00	3:30	4:00	4:27	4:57	5:00	5:28	6:00	6:11	7:00
C		Suburban Station		5:04	5:35	6:35	7:38	8:35	9:35	10:35	11:35	12:35	1:35	2:35	3:05	3:35	4:05	4:32	5:02	5:05	5:33	6:05	6:16	7:05
C		Market East Station		5:09	5:40	6:40	7:43	8:40	9:40	10:40	11:40	12:40	1:40	2:40	3:10	3:40	4:10	4:37	5:07	5:10	5:38	6:10	6:21	7:10
C		Temple University		5:13	5:44	6:44	7:47	8:44	9:44	10:44	11:44	12:44	1:44	2:44	3:14	3:44	4:14	4:41	5:11	5:14	5:42	6:14	6:26	7:14
C		North Broad		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D5:16	—	—	—	—
1		Wayne Junction		5:20	5:50	6:51	7:53	8:50	9:50	10:50	11:50	12:50	1:50	2:50	3:21	3:51	4:21	4:47	—	D5:22	—	D6:21	—	7:21
1		Fern Rock T. C.		5:24	5:53	6:55	7:56	8:53	9:53	10:53	11:53	12:53	1:53	2:53	3:25	3:55	4:25	4:51	E	D5:26	5:51	D6:25	6:35	7:24
2		Melrose Park		5:27	5:55	6:58	7:58	8:55	9:55	10:55	11:55	12:55	1:55	2:55	3:27	3:57	4:28	4:54	X	D5:29	—	D6:28	—	7:27
2		Elkins Park		5:29	5:57	—	8:00	8:57	9:57	10:57	11:57	12:57	1:57	2:57	3:30	4:00	4:30	4:56	P	D5:31	—	D6:31	—	7:29
3		Jenkintown-Wyncote		5:31	6:00	7:01	8:03	9:00	10:00	11:00	12:00	1:00	2:00	3:00	3:33	4:03	4:33	5:00	—	D5:34	5:58	D6:34	6:41	7:32
3		Glenside		5:33	6:03	7:04	8:06	9:03	10:03	11:03	12:03	1:03	2:03	3:03	3:36	4:06	4:36	5:03	5:28	5:37	6:02	6:37	6:45	7:35
3		Ardsley		5:36	—	7:07	8:08	9:06	10:06	11:06	12:06	1:06	2:06	3:06	—	4:09	4:39	D5:06	D5:31	E	D6:05	E	6:48	7:38
3		Roslyn		5:39	—	7:10	8:12	9:09	10:09	11:09	12:09	1:09	2:09	3:09	—	4:12	4:42	D5:09	D5:34	X	D6:08	X	6:51	7:41
3		Crestmont		F5:41	—	F7:12	F8:14	F9:11	F10:11	F11:11	F12:11	F1:11	F2:11	F3:11	—	F4:14	4:44	D5:11	D5:36	P	D6:10	P	6:53	F7:43
3		Willow Grove		5:44	—	7:15	8:17	9:14	10:14	11:14	12:14	1:14	2:14	3:14	—	4:18	4:48	D5:15	D5:40	5:47	D6:14	6:45	6:57	7:46
4		Hatboro		D5:51	—	D7:27	8:22	9:19	10:19	11:19	12:19	1:19	2:19	3:19	—	D4:23	D4:52	D5:19	D5:46	—	D6:19	—	D7:02	D7:51
4		Warminster		R5:55	—	R7:31	R8:27	9:24	10:24	11:24	12:24	R1:24	R2:24	R3:24	—	R4:28	4:57	R5:24	R5:51	—	6:24	—	7:07	7:57
				AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM

Evening Fares Apply →

New service highlights (EXP – Express to/from Willow Grove)

Minimal schedule modification, extending or joining trains originating/terminating in Glenside with express service to Willow Grove.

Mid Term Investments (4-10 years)

Key Decisions

- **Set parking garage pricing policy** – While the capital component of parking garage implementation has been estimated through the station design process, the ongoing operation/maintenance of this facility will need to be determined. Initial parking analysis for SEPTA station parking from this study, should be supplemented with a more broad-scale needs assessment for parking throughout the core Willow Grove area as well as generated from new redevelopment. Findings of a 2010 DVRPC SEPTA Regional Rail Shed Analysis concluded as many as 56% of parking at the Willow Grove Station is by Upper Moreland residents. A strategy to preserve and possibly set a higher parking pricing strategy for non-residents would be a possibility to explore to keep this facility as a community asset. Parking pricing would be utilized more as a means to address parking demand, rather than being envisioned as a significant source of revenue.
- **Use of former station building** – The introduction of a new station facility would allow Upper Moreland residents to help determine the future role of the existing Willow Grove station building. While revenue uses may be preferred, such as a small office or coffee shop, other applications as a community facility may wish to be explored. The desire for SEPTA to retain some surface parking on this site versus consolidate all parking into a parking structure should also be examined in conjunction with the parking garage pricing analysis previously identified. The amount of parking to be maintained versus redevelopment of the existing station site would need to be consistent with the earlier decision on whether to relocate the Kremp Florist warehouse.

Capital Improvements

The following station elements would be implemented in the mid-term:

- **New transit building/facility** – including the development of a new passenger drop off parking and a transit transfer area.
- **Parking garage facility** – initially to provide 375 parking spaces on four levels with the option to expand to an additional level.

Transit Service Planning Implications

- **Design of additional shuttle service** – Following the development of the Willow Grove Naval Air Station, and perhaps as a component of traffic impact mitigation, new shuttle service to/from the Willow Grove train station could be designed. It is also likely that shuttles from more remote lots (i.e. Giant supermarket) may be needed to supplement the lost surface parking during parking garage construction.
- **Implement increased Warminster Line service** – Based on the service planning conducted previously, the procurement and service planning preparation for increased

Warminster Line service could begin once necessary equipment, crew schedule and potential train set storage issues have been resolved. Local shuttle service, as detailed previously, would also be adjusted to meet all inbound/outbound trains and supplement existing routes. An operating funding strategy to support these new services would need to be identified.

Agreements/Coordination

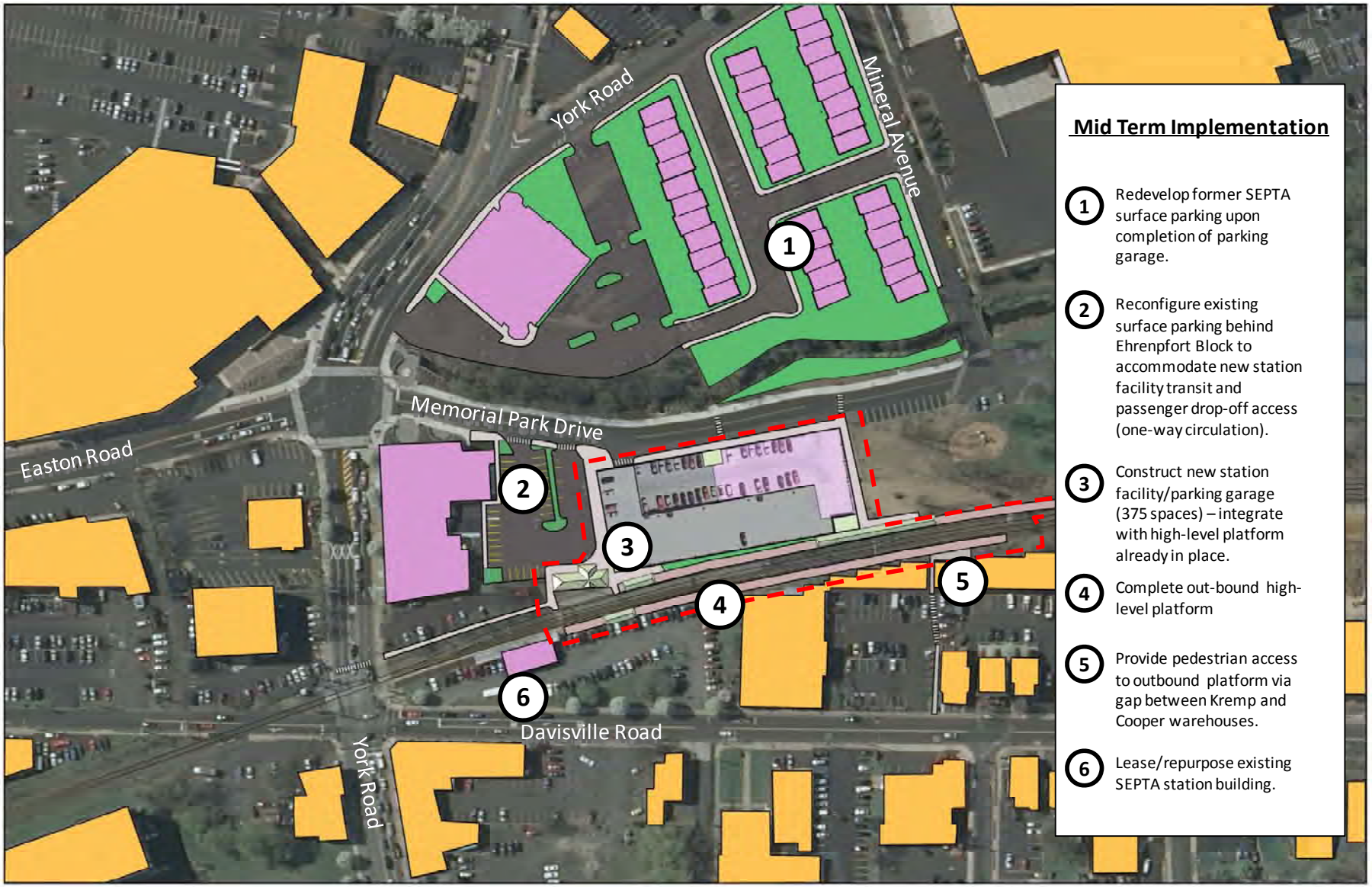
- Prepare a station lease agreement, possibly with Upper Moreland Township directly and reflecting other arrangements where municipalities lease stations from SEPTA, often for a nominal $1 a year, with the agreement that the municipality would restore and maintain the building.

Exhibit 6-4: Estimated **Mid-Term** Project Costs for the Willow Grove Station Redevelopment Concept

DESIGN ELEMENT	**DESCRIPTION**	**ESTIMATED COST (000s)**
Station Facility	Design and construction of passenger waiting area, ticket counter, and restroom; Parking lot redesign, paving, striping, and landscaping. Bus shelter and street furniture for transfer area.	$1,250
Structured Parking Garage	Construction of a 4 story structural steel parking facility with 375 spaces, three stair wells and one elevator. Includes 9,500 square feet of ground floor retail space.	$7,600
	Subtotal Capital Costs	***8,850***
	Scope Contingency (15%)	$1,328
	Subtotal Construction Costs	***$10,178***
	PE Design (15%)	$1,527
	Construction Engineering/Inspection (8%)	$814
	Maintenance of Traffic (MOT) and Mobilization (20% of trackwork construction ONLY)	$0
	Right-of-Way/Utilities (10%)	$1,018
	Additional Mid Term Estimated Project Costs[25]	**$13,536**

[25] All future cost estimates are presented in current year (2012) dollars.

Exhibit 6-5: MidTerm Implementation - Station Concept Elements



Long Term Investments (beyond 10 years)

Key Decisions

- **Pursuit and encouragement of continued major redevelopment –** As the newly functional station and mid-term redevelopment take shape, the continued transformation of Willow Grove into a Town Center can expanded to more outlying properties.
- **Determine further station investment** - Determine if future ridership/development warrants further expansion of station area parking, through the implementation of an additional parking garage level and a pedestrian bridgeg. Resolve whether improved access to Memorial Park also justifies a pedestrian crossing, perhaps contingent on further redevelopment of Davisville Road properties between Old York Road and Overlook Avenue.
- **Expanded double track implementation along Warminster Line –** Determine if the further expansion of double track, beyond the Willow Grove/Grove Siding station area to the north and south is necessary and feasible.

Capital Improvements

The following station elements would be implemented in the long term:

- **Pedestrian bridge** – With footprint at the site of the former Kremp Florist warehouse. Warehouse would be relocated to the opposite side of their facility, replacing current SEPTA surface parking near the former Davisville Road station building.

Transit Service Planning Implications

- **Transit Priority Implementation** – Depending on ridership growth, the redevelopment of the Willow Grove Naval Air Station and other developments outside of the station area in Upper Moreland Township, the on-time performance of the shuttle transit service to the new Willow Grove Station may be impacted by increased traffic. In order to maintain the functionality of the new station as both a gateway and circulator connection, transit priority measures may be necessary at key intersections along these routes.

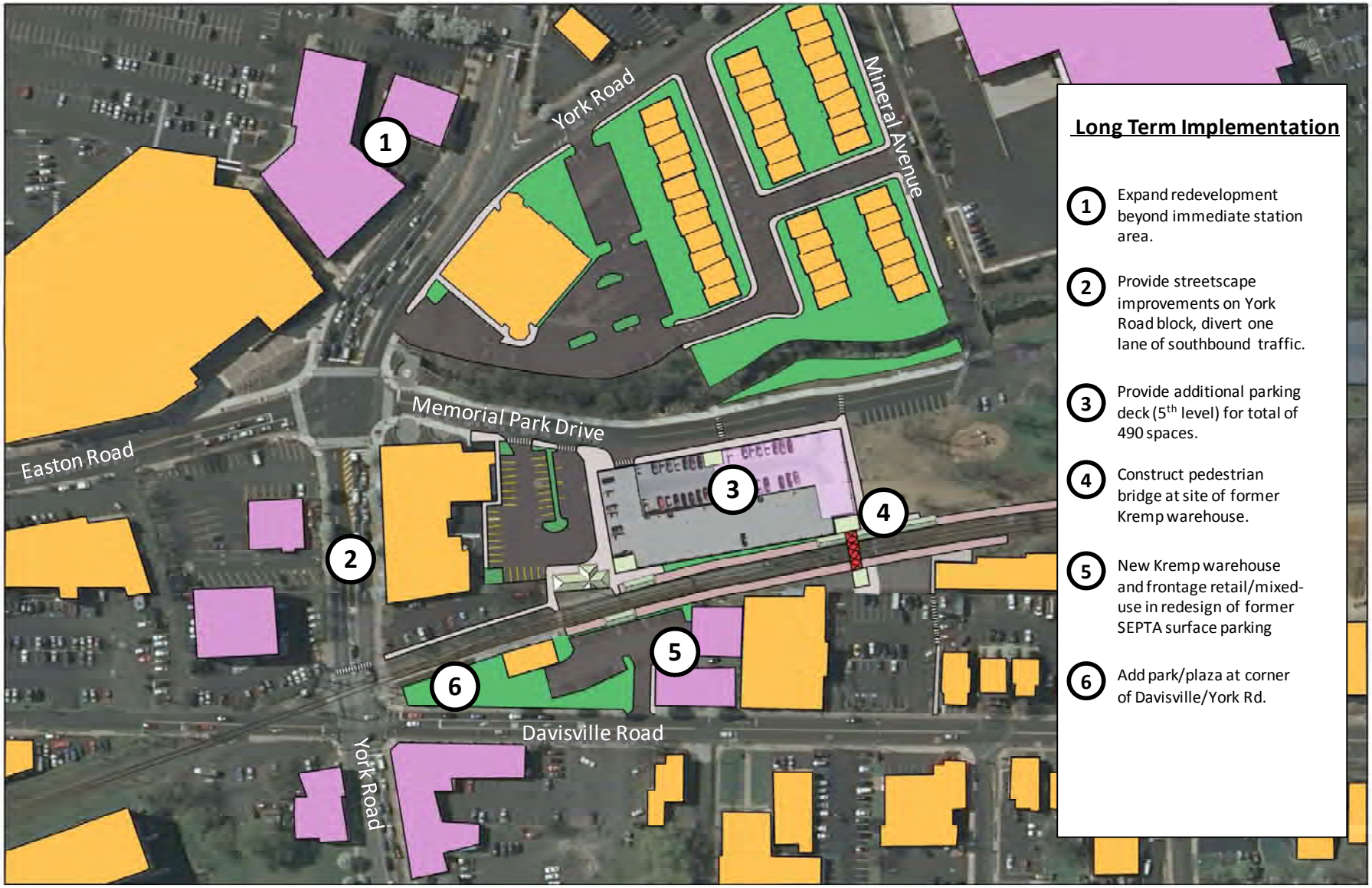
Agreements/Coordination

- Since the site constraints on certain portions of the current Willow Grove station would not lend themselves to infill development, not convenient and easily accessible parking, the possibility of developing a corner park at Old York Road and Davisville Road could be coordinated with local merchants. Kremp Florist had indicated a desire to display flowers and possibly maintain such a park.

Exhibit 6-6: Estimated **Long Term** Project Costs for the Willow Grove Station Redevelopment Concept		
DESIGN ELEMENT	**DESCRIPTION**	**ESTIMATED COST (000s)**
Parking Garage Modifications	Addition of a 5th level to existing parking garage; Installation of pedestrian overcrossing from parking garage to outbound platform, including additional stair tower and elevator.	$3,972
Streetscape Improvements	Reconfiguration of southbound traffic through station area along York Road; Pedestrian wayfinding signage.	$100
	Subtotal Capital Costs	***4,072***
	Scope Contingency (15%)	$611
	Subtotal Construction Costs	***$4,683***
	PE Design (15%)	$702
	Construction Engineering/Inspection (8%)	$375
	Maintenance of Traffic (MOT) and Mobilization (20% of trackwork construction ONLY)	$0
	Right-of-Way/Utilities (10%)	$468
	Additional Long Term Estimated Project Costs[26]	**$6,228**

[26] All future cost estimates are presented in current year (2012) dollars.

Exhibit 6-7: Long Term Implementation - Station Concept Elements



7. FISCAL / ECONOMIC ANALYSIS

This chapter builds upon the market analysis (see Chapter 3) and investigates a more in-depth build-out and related financial feasibility analysis associated with hypothetical TOD scenarios (*two specific scenarios examined are identified and detailed herein*), incorporating a rail station at the current location and as detailed in the preceding chapter.

The Station at Bucks County – TOD next to the SEPTA Warminster Regional Rail Station

The principal objectives for performing the build-out and financial feasibility analysis were (a) to determine the minimum dwelling unit density and land-use mix (e.g., residential, retail and/or office) which conforms with the previously identified market demand and could prove financially viable – permitting a sufficient market rate of return given the associated risk for undertaking a TOD project at the Willow Grove station site, and (b) what minimum dwelling unit density and land-use mix would be sufficient to both provide a market rate of return to a private developer, given the associated risk inherent with the subject project, while allowing the TOD project to underwrite some portion of earlier identified rail station infrastructure improvements – the most important of which being on-site structured parking.

It should be understood that objective (a) is independent of objective (b) (*e.g., objective (a) is not dependent upon the viability of objective (b)*) while objective (b) is, necessarily, dependent upon the viability of objective (a), given that a private developer will not give consideration to subsidizing public infrastructure if the underlying private investment returns are inadequate, given project risk. Consequently, this analysis takes into consideration and reports out on the viability of both objectives for each of two scenarios examined.

Methodology

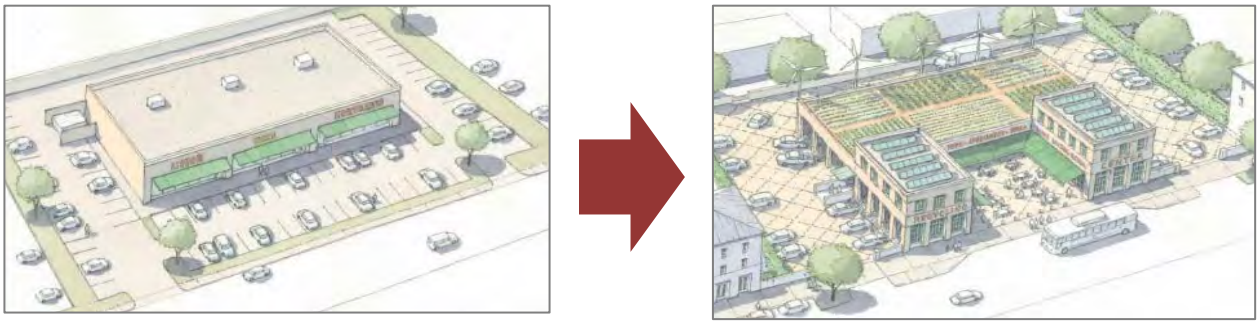
This analysis was prepared from the perspective of a typical developer and began by examining land parcels closein to the Willow Grove rail station – within a 1,500 foot radius – based on the principle of TOD development occurring within a quarter-mile of a rail station. Promising redevelopment parcels were then identified, based on such factors as property condition (e.g., physical obsolescence), lot coverage area, and current land-uses susceptible to change over the next five to ten years. Based on this screening process, the study team identified eight (8) prospective TOD land areas within 1,500 feet of the station (see Exhibit 7-1).

Exhibit 7-1: Prospective TOD Parcels

Understanding that the eight land areas identified within 1,500 feet of the station could not all be acquired, cleared and redeveloped in the same period of time – from both a market and a financially feasible standpoint –the sites were screened according to near-term (within three years from today), intermediate-term (between four and ten years from today), and long-term (beyond ten years from today) TOD redevelopment opportunities. This aligns with the rail station implementation planning detailed in Chapter 6. Criteria used for categorize parcels into an implementation timeline were proximity to the station (the nearer the better), likelihood of quickly assembling parcels (the larger and/or more diverse property ownership likely representing longer acquisition targets) and estimated future acquisition costs (based on current tax assessment data, an equalization rate of 0.58 provided by the Montgomery County Tax Assessor's office and an applied ten percent premium to approximate current market value and reflect future increases in value, given that these properties would not likely be acquired for up to two years). Exhibit 7-2 through Exhibit 7-4 identify the near-, intermediate- and long-term TOD land area targets, respectively. The build-out, financial modeling and associated fiscal impact analysis performed is limited to the near-term parcels identified in Exhibit 7-2, as performing similar analyses on either the intermediate-term or long-term TOD target land areas would be highly speculative and of little strategic value.

TOD supportive assumptions factored into this analysis, regarding permitted land-use zoning within the identified land areas, with respect to building heights (e.g., commercial buildings of not more than 10 stories (mid-rise), multi-family structures of up to six stories (low- to mid-rise), parking requirements of 1.25 per residential dwelling unit (Upper Moreland's current parking ratio is 2.0 parking space per dwelling unit), 1.75 parking spaces per 1,000 s.f. of retail and 2.00 per 1,000 s.f. of office. Conventional and locally germane metrics were used for site work and construction costs (local developer interview findings were particularly instructive for developing locally relevant construction metrics – see Appendix A-3).

To ensure that the analysis was realistic, known and/or assumed pre-development costs were identified and modeled within the financial development pro forma (e.g., property acquisition, demolition, and general site improvements). It should be recognized that the estimate of prospective acquisition costs, based on locally assessed property values is, by no means, an adequate substitute for conducting a professional appraisal for these properties, and served for conceptual forecasting purposes only.



TOD concepts most applicable to Willow Grove would feature infill development, to achieve higher density and multi-use parcels. This transforms auto-oriented strip retail into a more pedestrian-friendly environment.

Source – www.re-burbia.com

Exhibit 7-2: Near-Term TOD Implementation

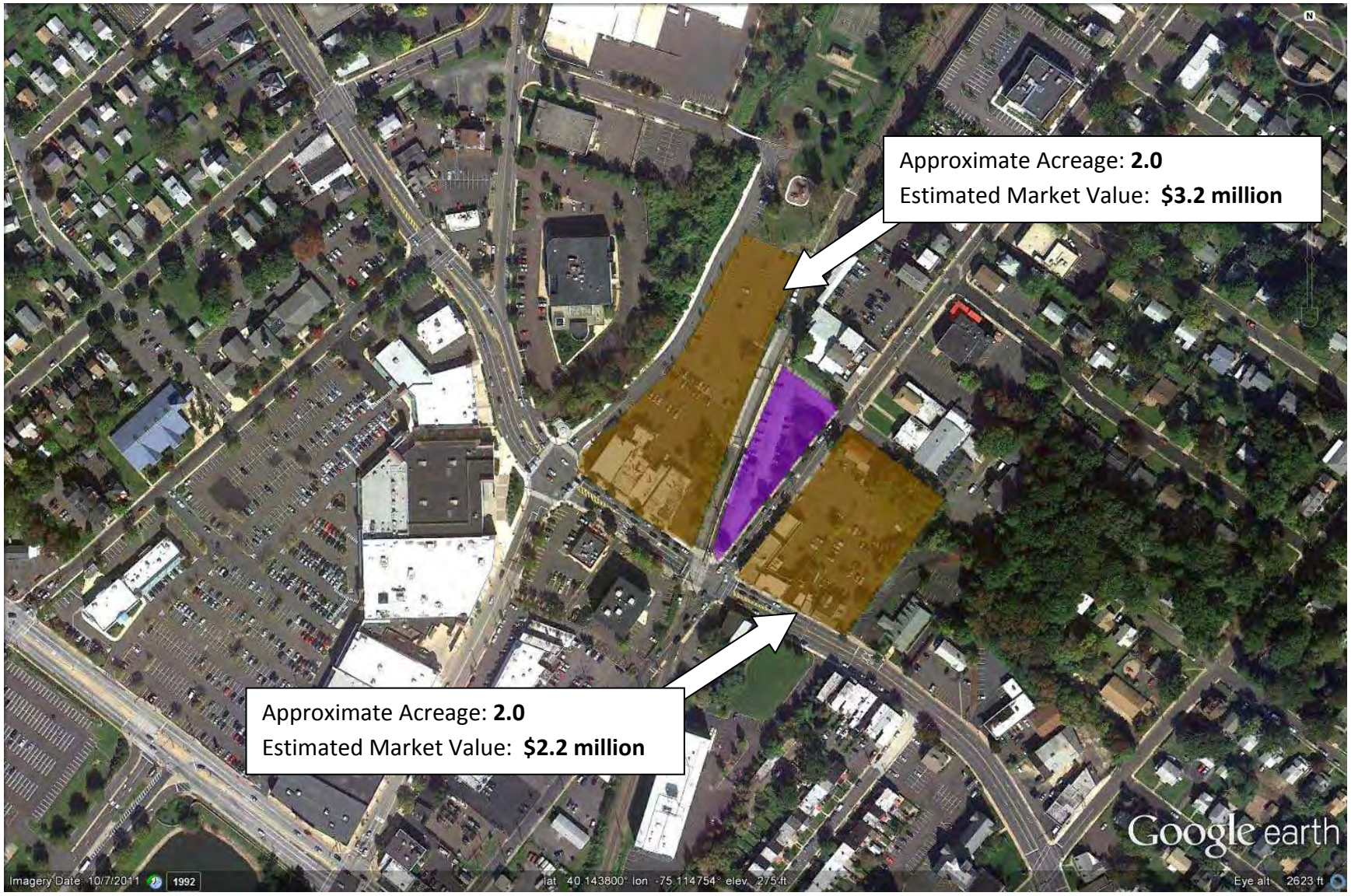
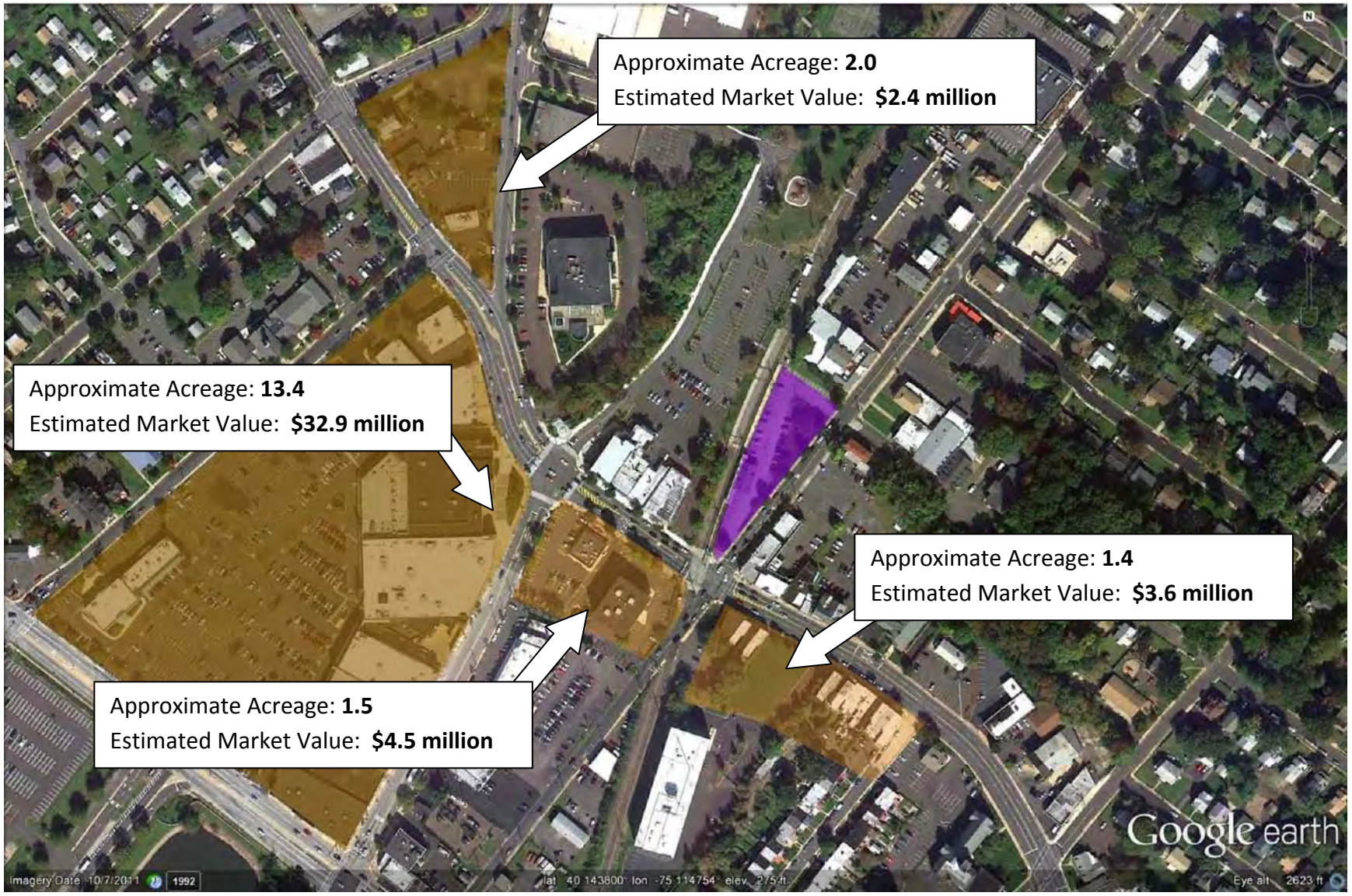


Exhibit 7-3: Intermediate-Term TOD Implementation

Exhibit 7-4: Long-Term TOD Implementation



Development costs associated with parking were broken out into surface and structured parking, with the scale of development determining the mix of each type of parking (e.g., a low-density, relatively small dwelling unit project would not require structured parking, while a high-density, large scale mixed-use project would likely require structured parking). The pro forma development model (see pro forma illustrated in Exhibit 7-5 to Exhibit 7-8) assumes no more than 50 surface parking spaces located within the near-term TOD target land area parcels, and all other zoning required parking being satisfied as structured parking. No commuter rail parking spaces (surface or structured) were included as part of this development analysis as the costing for these features was conducted in previous analysis. It can be further assumed that some additional portion of a mixed use development's parking spaces (surface and/or structured) *could* be shared with a public transit use. Analyzing the dynamics of shared parking falls outside of the scope of this study and is, therefore, not addressed here.

The financial analysis conducted (e.g., development and operating pro forma for each of the two TOD scenarios examined) was performed on an unleveraged basis – that is, **each development scenario was modeled without the assistance of debt, which is customary when performing a financial feasibility analysis for real estate development**. Market area financial benchmarks such as the cash-on-cash rate of return (ROE) and the internal rate of return (IRR) were incorporated into the operating pro forma to allow analysis of financial viability (using identified financial benchmarks based on interview findings with local developers experienced with similar scale and types of development). An additional assumption includes a project sale (the entire mixed-use project) would be sold in year 15, which is a reasonable hold period for a project of this size.

The consensus view of the financial return rate metrics needing to be satisfied were a 10 percent cash-on-cash rate of return and a 10 percent internal rate of return. Based on the study team's experience, these financial return metrics are reasonable in today's market climate. However, it is recognized that the above to financial return rate metrics will vary according to a developer's tolerance for risk, personal interests in the development, and changing market conditions.

Finally, the study team did not speak with more than a few local area developers about their prospective interest in becoming involved in a Willow Grove TOD project, given that most developers who have not responded to a formal solicitation (e.g., request for proposal/qualifications/interest) will not be forthcoming with particular development plans for a site, for fear of disclosing critical information which could advantage a competitor. Further, our charge to analyze financial viability and identify the likelihood that a particular scale of TOD development would be sufficient to offset certain public infrastructure costs, such as parking, is not dependent upon knowing of area developer interest in the project site.

TOD Scenarios Modeled and Key Assumptions

Prior to performing financial modeling, the study team needed to understand what general parameters it should use for conducting its analysis – that is, what should be the minimum dwelling unit density per acre examined and what should be maximum dwelling unit density per acre

examined. In order to answer this question, we performed a cursory review of TOD zoning regulations found on-line and within various TOD case study analyses, also found on-line. Peer review showed that dwelling unit (du) densities (required or otherwise) within many established or zoned TOD areas, nationally, range from as low as six to as high as 100. Unsurprisingly, the more urban locations featured the higher densities. However, many national studies and zoning regulations reviewed showed 30 du/acre as a typical minimum dwelling unit density for TOD areas (used as a lower threshold in this study). Given the character of the Willow Grove area and Upper Moreland Township, generally, a maximum dwelling unit density of 50 du/acre was considered an upper development threshold based on the likely building height and parking required to achieve a higher dwelling unit density rate (by way of reference, the proposed Lofts at Willow Grove will feature 73 units on 1.76 acres or just under 42 du/acre. Warminster's nearly completed TOD project features just 14 du/acre)[31].

Each of the two TOD scenarios (30 du/acre and 50 du/acre) also included 10,000 s.f. of low-rise professional office building space and 15,000 s.f. of first floor convenience retail and restaurant space. **Note that this retail and office space provision differs substantially from previous development proposals, but in this study the development mix is based upon the identified market demand for Willow Grove.** Much detail was built into both the development and operating pro forma, including estimated annual inflation rates, estimated construction and lease costs per square foot, surface and structured parking costs per square foot, estimated acquisition costs, estimated demolition costs, etc. (see development and operating assumptions at the end of the financial analysis section write-up for both development scenarios).

The pro forma variables having most influence on the prospective financial return rates (e.g., cash-on-cash and internal rate of return) are as follows:

- Residential construction costs per square foot
- Number of structured parking spaces
- Property acquisition costs
- Market residential rental rates

While adjustments to any of the above variables had a noticeable impact on return rates within the cash-flow model, it should be understood that all of these variables, with little exception, are subject to market forces (and, in the case of parking, prudent zoning requirements) and, therefore, cannot be arbitrarily adjusted for purposes of achieving a desired financial result. While the study team performed a limited amount of sensitivity testing by slightly adjusting the values of the above variables, no marked change in return rate was observed.

[31] Specific analysis in relation to traffic impacts associated with these developments is outside the scope of this study.

Care was taken to input variables into this analysis that are considered market supportable, based on a prospective TOD project. So, for example, the average per square foot residential rental rate used is $1.65, which is based on inquiries with area developers and a review of current market renal rates for new apartment units near to shopping and transit amenities (including the Lofts at Willow Grove and Warminster's nearly completed TOD project). The estimated per square foot construction cost used for the residential units is $120 per square foot, which is inclusive of all hard and soft costs, and includes finishes and fixtures (this figure was validated by a number of architects and developers consulted and, based on the study team's professional experience, is a proven number).

Financial Analysis Findings

Our financial analysis of the above referenced TOD scenarios (30 and 50 dwelling unit density/acre) demonstrates that neither TOD scenario achieves the earlier identified financial return rate benchmarks of 10 percent cash-on-cash or a 10 percent IRR. Below is a summary of return rates identified for each scenario:

	Cash-on-Cash 10-year average	IRR
Lower Development Threshold 30 Dwelling Units/Acre Scenario	5.25%	7.20%
Upper Development Threshold 50 Dwelling Units/Acre Scenario	5.62%	8.00%

While neither scenario achieves the preferred return rates (developer demanded return rates), it should not be taken to mean that a TOD would be unsuccessful or impossible to implement in Willow Grove. To the contrary, there will be a few developers who, notwithstanding the identified low return rates, will still be interested in pursuing TOD, if in fact alternative development opportunities in the region aren't significantly more attractive, financially. Still, other development interests will seek to close the financial gap (e.g., the difference between the above identified financial return metrics and the return metrics they desire, given project risk) **by requesting public financial assistance in the form real property tax relief (see treatment of this topic within the Fiscal Impact section) or direct financial contribution towards property acquisition and/or infrastructure improvements (e.g., structured parking).** It should be understood that the public sector (specifically, Upper Moreland Township and Montgomery County), while supportive of TOD and amenable to entertaining changes to certain zoning ordinances which would offer the equivalent of financial relief to a prospective TOD project (e.g., reduction in the parking ratios required, increases in dwelling unit density, increases in lot area coverage, etc.), can only influence the financial viability of a TOD by only so much – and the variables used within financial modeling performed for this analysis push the upper limits of that influence.

Exhibit 7-5: 30 Dwelling Unit/Acre Cash Flow Pro Forma

Annual Cash Flow	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Annual Operating Revenue																
Lodging Room Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Room Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Office Lease Revenue	$0	$0	$200,000	$250,000	$256,750	$263,682	$270,802	$278,113	$285,622	$293,334	$301,254	$309,388	$317,742	$326,321	$335,131	$344,180
Less: Vacancy	$0	$0		$25,000	$25,675	$26,368	$27,080	$27,811	$28,562	$29,333	$30,125	$30,939	$31,774	$32,632	$33,513	$34,418
Retail Lease Revenue	$0	$0	$300,000	$375,000	$385,125	$395,523	$406,203	$417,170	$428,434	$440,001	$451,881	$464,082	$476,612	$489,481	$502,697	$516,270
Less: Vacancy	$0	$0		$18,750	$19,256	$19,776	$20,310	$20,858	$21,422	$22,000	$22,594	$23,204	$23,831	$24,474	$25,135	$25,813
Residential: Rental Revenue	$0	$0	$2,138,400	$2,851,200	$2,928,182	$3,007,243	$3,088,439	$3,171,827	$3,257,466	$3,345,418	$3,435,744	$3,528,509	$3,623,779	$3,721,621	$3,822,105	$3,925,301
Less: Vacancy	$0	$0		$142,560	$146,409	$150,362	$154,422	$158,591	$162,873	$167,271	$171,787	$176,425	$181,189	$186,081	$191,105	$196,265
Effective Gross (Rental) Income (EGI)	$0	$0	$2,638,400	$3,064,890	$3,147,642	$3,232,628	$3,319,909	$3,409,547	$3,501,605	$3,596,148	$3,693,244	$3,792,962	$3,895,372	$4,000,547	$4,108,561	$4,219,492
Annual Operating Expenses and Real Property Taxes																
Operating Expenses: Lodging	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Expenses: Retail	$0	$0	$30,000	$30,810	$31,642	$32,496	$33,374	$34,275	$35,200	$36,151	$37,127	$38,129	$39,158	$40,216	$41,302	$42,417
Operating Expenses: Office	$0	$0	$70,000	$71,890	$73,831	$75,824	$77,872	$79,974	$82,134	$84,351	$86,629	$88,968	$91,370	$93,837	$96,370	$98,972
Operating Expenses: Residential	$0	$0	$626,087	$642,991	$660,352	$678,182	$696,492	$715,298	$734,611	$754,445	$774,815	$795,735	$817,220	$839,285	$861,946	$885,218
Real Property Taxes	$0	$0	$313,043	$321,496	$330,176	$339,091	$348,246	$357,649	$367,305	$377,223	$387,408	$397,868	$408,610	$419,643	$430,973	$442,609
TOTAL: Annual Operating Expenses & Real Property Taxe	$0	$0	$1,039,130	$1,067,187	$1,096,001	$1,125,593	$1,155,984	$1,187,196	$1,219,250	$1,252,170	$1,285,978	$1,320,700	$1,356,359	$1,392,980	$1,430,591	$1,469,217
Net Operating Income (NOI)	$0	$0	$1,599,270	$1,997,703	$2,051,641	$2,107,035	$2,163,925	$2,222,351	$2,282,355	$2,343,978	$2,407,266	$2,472,262	$2,539,013	$2,607,566	$2,677,971	$2,750,276
Less: Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow After Debt Service	NA	NA	$1,599,270	$1,997,703	$2,051,641	$2,107,035	$2,163,925	$2,222,351	$2,282,355	$2,343,978	$2,407,266	$2,472,262	$2,539,013	$2,607,566	$2,677,971	$2,750,276
DSCR			#DIV/0!													
Gross Sale Proceeds																$36,670,345
Less: Sale Costs																$1,833,517
Less: Mortgage Payoff																
Net Sale Proceeds																$34,836,827
Acquisition Costs	($5,500,000)															
Site/Infrastructure Costs (excludes parking)	($200,000)															
Relocation Costs (None assumed in this scenario)	$0															
Demo Costs	($150,000)															
Construction Costs	$0	($23,015,217)														
Parking Costs (Surface)	$0	($175,000)														
Parking Costs (Structured)	$0	($2,925,000)														
Net Cash Flow BEFORE Debt Service	($5,850,000)	($26,115,217)	$1,599,270	$1,997,703	$2,051,641	$2,107,035	$2,163,925	$2,222,351	$2,282,355	$2,343,978	$2,407,266	$2,472,262	$2,539,013	$2,607,566	$2,677,971	$37,587,103
Net Cash Flow AFTER Debt Service	($5,850,000)	($26,115,217)	$1,599,270	$1,997,703	$2,051,641	$2,107,035	$2,163,925	$2,222,351	$2,282,355	$2,343,978	$2,407,266	$2,472,262	$2,539,013	$2,607,566	$2,677,971	$37,587,103
Cash-on-Cash Return	0.00%	0.00%	5.00%	6.25%	6.42%	6.59%	6.77%	6.95%	7.14%	7.33%	7.53%	7.73%	7.94%	8.16%	8.38%	117.59%
Avg. Annual Cash-on-Cash Return																
Unleveraged Before-Tax IRR	7.2%															

Sale of property happens in year 15, less sales related costs, such as commissions and transactions fees. This unlevered scenario (e.g., no mortgage) does not require the retirement of debt.

15 Year internal rate of return is too low, principally due to the upfront development costs of property acquisition and parking.

4ward Planning LLC, 2012

Exhibit 7-6: 30 Dwelling Unit/Acre Assumptions and Details

Scenario: 30 Dwelling Unit/Acre Mixed-Use TOD Scenario

[1]	Acreage Acquired	4.00
[2]	Property Acquisition Cost	$5,500,000
[3]	Demolition Cost	$150,000
[4]	Relocation Costs	$0
[5]	Site Work Cost	$200,000
[6]	Multi-family Residential Units Developed	120
[7]	Multi-family Residential Development Costs	$19,565,217
[8]	Townhouse Residential Units Developed	0
[9]	Townhouse Residential Development Costs	$0
[10]	Retail Square Footage Developed	15,000
[11]	Retail Development Costs	$1,650,000
[12]	Office Square Footage Developed	10,000
[13]	Office Development Costs	$1,800,000
[14]	Lodging Square Footage Developed	0
[15]	Lodging Development Costs	$0
[16]	Parking Spaces - Structured	146
[17]	Total Structured Parking Costs	$2,925,000
[18]	Parking Spaces - Surface	50
[19]	Total Surface Parking Costs	$175,000
	Sub-Total Phase I Acquisition, Site, Demo & Infrastructure Costs	$8,950,000
	Sub-Total Phase I Building Construction Costs (Hard and Soft Combined)	$23,015,217
	Total Phase I Costs	**$31,965,217**

Assumptions

[1] Represents the entirety of the block containing Bally's and the Verizon building. Source: Montgomery County GIS Tax Parcel Map.
[2] Represents an estimated acquisition cost, based on the current assessed property value and adjusted to market value using an equalization rate of 0.58, per the Montgomery County Tax Assessor's office.
[3] Estimated demolition and site clearance costs based on existing character and size of structures present.
[4] No residential or business relocation costs are assumed.
[5] Placeholder estimate based on limited site work improvements likely required , given the currently developed nature of the site.
[6] Assumes a permitted dwelling unit density of 50 units per acre.
[7] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[8] Assumes a permitted dwelling unit density of 50 units per acre.
[9] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[10] Assumes a limited amount of convenience, specialty retail and allied health services
[11] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[12] Assumes professional service office space (possibly medical office building space), four story low-rise.
[13] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[14] Assumes small (less than 200 rooms), limited service, brand loding facility.
[15] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[16] Based on an assumed parking ratio of 1.25 spaces per dwelling unit and 2.00 spaces per 1,000 s.f. of commercial square footage.
[17] Assumes an estimated cost of $20,000 per space, based on inquiries made with parking consultants and local area findings.
[18] Based on an assumed parking ratio of 1.25 spaces per dwelling unit and 2.00 spaces per 1,000 s.f. of commercial square footage.
[19] Assumes an estimated cost of $3,500 per space, based on inquiries made with sparking consultants and local area findings.

Source: 4ward Planning LLC, 2012

Assumed Zoning Densities		
Retail Floor Area Ratio	0.3	SF
Office Floor Area Ratio	0.5	SF
Residential Dwelling Units per Acre	30	Acre

Acquisition, Demolition & Site Work		
Site Acquisition Cost		$5,500,000
Demolition Costs per CF		$7.00
Residential Buildings	0	$0
Office Buildings	0	$0
Retail Buildings	0	$0
Public Buildings	0	$0
Haz Mat Abatement:		$0
Site Prep & Grading: Entire Site		$200,000
Site Infrastructure Costs		8.00%

Residential: Multi-Family Rental		
Efficiency Rate	92%	
Avg. Unit Size	1,200	SF
Parking Spaces per Unit	1.25	spaces
Construction Costs: Low-Rise	$125	per SF
Construction Costs: Mid-Rise	$150	per SF
Average Rent per SF/Month	$1.65	
Vacancy Rate: Rental	5.00%	
Operating Expenses per SF	$4.00	per SF

Retail: Ground Floor		
Efficiency Rate	90%	
Parking Spaces per 1,000 SF	1.75	spaces
Construction Costs: Shell	$90	per SF
Construction Costs: Fit Out	$20	per SF
Construction Costs: Shell + Fit Out	$110	per SF
Rent per SF: Triple Net	$25	per SF
Vacancy Rate: Retail	5.00%	
Operating Expenses per SF	$2.00	per SF

Office: Class A		
Efficiency Rate	90%	
Parking Spaces per 1000 SF	2.00	spaces
Construction Costs: Inclusive of shell and fit-up	$180	per SF
Rent per SF	$25.00	
Vacancy Rate: Class A	10.00%	
Operating Expenses per SF	$7.00	per SF

Parking		
SF per Space: Structured	400	SF
SF per Space: Surface	300	SF
Construction Costs: Structured	$20,000	per space
Construction Costs: Surface, New	$3,500	per space
Construction Costs: Surface, Existing	$2,000	per space

Misc		
Sales Cost	5.00%	
Hold Period	15	years
Investment Return Goal: Unleveraged	10%	
Inflation Factor	2.70%	
Estimate of Annual Real Property Taxes	$2.00	per SF

Cap Rates	
Residential	7.00%
Retail	7.50%
Office	8.00%

Exhibit 7-7: 50 Dwelling Unit/Acre Cash Flow Pro Forma

Annual Cash Flow	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Annual Operating Revenue																
Lodging Room Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-Room Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Office Lease Revenue	$0	$0	$200,000	$250,000	$256,750	$263,682	$270,802	$278,113	$285,622	$293,334	$301,254	$309,388	$317,742	$326,321	$335,131	$344,180
Less: Vacancy	$0	$0		$25,000	$25,675	$26,368	$27,080	$27,811	$28,562	$29,333	$30,125	$30,939	$31,774	$32,632	$33,513	$34,418
Retail Lease Revenue	$0	$0	$300,000	$375,000	$385,125	$395,523	$406,203	$417,170	$428,434	$440,001	$451,881	$464,082	$476,612	$489,481	$502,697	$516,270
Less: Vacancy	$0	$0		$18,750	$19,256	$19,776	$20,310	$20,858	$21,422	$22,000	$22,594	$23,204	$23,831	$24,474	$25,135	$25,813
Residential: Rental Revenue	$0	$0	$3,564,000	$4,752,000	$4,880,304	$5,012,072	$5,147,398	$5,286,378	$5,429,110	$5,575,696	$5,726,240	$5,880,848	$6,039,631	$6,202,701	$6,370,174	$6,542,169
Less: Vacancy	$0	$0		$237,600	$244,015	$250,604	$257,370	$264,319	$271,456	$278,785	$286,312	$294,042	$301,982	$310,135	$318,509	$327,108
Effective Gross (Rental) Income (EGI)	$0	$0	$4,064,000	$4,870,650	$5,002,158	$5,137,216	$5,275,921	$5,418,370	$5,564,666	$5,714,912	$5,869,215	$6,027,684	$6,190,431	$6,357,573	$6,529,228	$6,705,517
Annual Operating Expenses and Real Property Taxes																
Operating Expenses: Lodging	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Operating Expenses: Retail	$0	$0	$30,000	$30,810	$31,642	$32,496	$33,374	$34,275	$35,200	$36,151	$37,127	$38,129	$39,158	$40,216	$41,302	$42,417
Operating Expenses: Office	$0	$0	$70,000	$71,890	$73,831	$75,824	$77,872	$79,974	$82,134	$84,351	$86,629	$88,968	$91,370	$93,837	$96,370	$98,972
Operating Expenses: Residential	$0	$0	$1,043,478	$1,071,652	$1,100,587	$1,130,303	$1,160,821	$1,192,163	$1,224,351	$1,257,409	$1,291,359	$1,326,226	$1,362,034	$1,398,809	$1,436,576	$1,475,364
Real Property Taxes	$0	$0	$521,739	$535,826	$550,293	$565,151	$580,410	$596,081	$612,176	$628,704	$645,679	$663,113	$681,017	$699,404	$718,288	$737,682
TOTAL: Annual Operating Expenses & Real Property Taxe	$0	$0	$1,665,217	$1,710,178	$1,756,353	$1,803,775	$1,852,477	$1,902,493	$1,953,861	$2,006,615	$2,060,794	$2,116,435	$2,173,579	$2,232,265	$2,292,537	$2,354,435
Net Operating Income (NOI)	$0	$0	$2,398,783	$3,160,472	$3,245,804	$3,333,441	$3,423,444	$3,515,877	$3,610,806	$3,708,298	$3,808,422	$3,911,249	$4,016,853	$4,125,308	$4,236,691	$4,351,082
Less: Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash Flow After Debt Service	NA	NA	$2,398,783	$3,160,472	$3,245,804	$3,333,441	$3,423,444	$3,515,877	$3,610,806	$3,708,298	$3,808,422	$3,911,249	$4,016,853	$4,125,308	$4,236,691	$4,351,082
DSCR			#DIV/0!													
Gross Sale Proceeds																$58,014,422
Less: Sale Costs																$2,900,721
Less: Mortgage Payoff																
Net Sale Proceeds																$55,113,701
Acquisition Costs	($5,500,000)															
Site/Infrastructure Costs (excludes parking)	($200,000)															
Relocation Costs (None assumed in this scenario)	$0															
Demo Costs	($150,000)															
Construction Costs	$0	($36,058,696)														
Parking Costs (Surface)	$0	($175,000)														
Parking Costs (Structured)	$0	($4,925,000)														
Net Cash Flow BEFORE Debt Service	($5,850,000)	($41,158,696)	$2,398,783	$3,160,472	$3,245,804	$3,333,441	$3,423,444	$3,515,877	$3,610,806	$3,708,298	$3,808,422	$3,911,249	$4,016,853	$4,125,308	$4,236,691	$59,464,783
Net Cash Flow AFTER Debt Service	($5,850,000)	($41,158,696)	$2,398,783	$3,160,472	$3,245,804	$3,333,441	$3,423,444	$3,515,877	$3,610,806	$3,708,298	$3,808,422	$3,911,249	$4,016,853	$4,125,308	$4,236,691	$59,464,783
Cash-on-Cash Return	0.00%	0.00%	5.10%	6.72%	6.90%	7.09%	7.28%	7.48%	7.68%	7.89%	8.10%	8.32%	8.54%	8.78%	9.01%	126.50%
Avg. Annual Cash-on-Cash Return																
Unleveraged Before-Tax IRR	8.0%															

Sale of property happens in year 15, less sales related costs, such as commissions and transactions fees. This unlevered scenario (e.g., no mortgage) does not require the retirement of debt.

15 Year internal rate of return is too low, principally due to the upfront development costs of property acquisition and parking.

4ward Planning LLC, 2012

Exhibit 7-8: 50 Dwelling Unit/Acre Assumptions and Details

Scenario: 50 Dwelling Unit/Acre Mixed-Use TOD Scenario

[1]	Acreage Acquired	4.00
[2]	Property Acquisition Cost	$5,500,000
[3]	Demolition Cost	$150,000
[4]	Relocation Costs	$0
[5]	Site Work Cost	$200,000
[6]	Multi-family Residential Units Developed	200
[7]	Multi-family Residential Development Costs	$32,608,696
[8]	Townhouse Residential Units Developed	0
[9]	Townhouse Residential Development Costs	$0
[10]	Retail Square Footage Developed	15,000
[11]	Retail Development Costs	$1,650,000
[12]	Office Square Footage Developed	10,000
[13]	Office Development Costs	$1,800,000
[14]	Lodging Square Footage Developed	0
[15]	Lodging Development Costs	$0
[16]	Parking Spaces - Structured	246
[17]	Total Structured Parking Costs	$4,925,000
[18]	Parking Spaces - Surface	50
[19]	Total Surface Parking Costs	$175,000
	Sub-Total Phase I Acquisition, Site, Demo & Infrastructure Costs	$10,950,000
	Sub-Total Phase I Building Construction Costs (Hard and Soft Combined)	$36,058,696
	Total Phase I Costs	**$47,008,696**

Assumptions

[1] Represents the entirety of the block containing Bally's and the Verizon building. Source: Montgomery County GIS Tax Parcel Map.
[2] Represents an estimated acquisition cost, based on the current assessed property value and adjusted to market value using an equalization rate of 0.58, per the Montgomery County Tax Assessor's office.
[3] Estimated demolition and site clearance costs based on existing character and size of structures present.
[4] No residential or business relocation costs are assumed.
[5] Placeholder estimate based on limited site work improvements likely required , given the currently developed nature of the site.
[6] Assumes a permitted dwelling unit density of 50 units per acre.
[7] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[8] Assumes a permitted dwelling unit density of 50 units per acre.
[9] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[10] Assumes a limited amount of convenience, specialty retail and allied health services
[11] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[12] Assumes professional service office space (possibly medical office building space), four story low-rise.
[13] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[14] Assumes small (less than 200 rooms), limited service, brand loding facility.
[15] Based on estimated per square foot costs, inclusive of all vertical hard and soft costs, and finishes.
[16] Based on an assumed parking ratio of 1.25 spaces per dwelling unit and 2.00 spaces per 1,000 s.f. of commercial square footage.
[17] Assumes an estimated cost of $20,000 per space, based on inquiries made with parking consultants and local area findings.
[18] Based on an assumed parking ratio of 1.25 spaces per dwelling unit and 2.00 spaces per 1,000 s.f. of commercial square footage.
[19] Assumes an estimated cost of $3,500 per space, based on inquiries made with sparking consultants and local area findings.

Source: 4ward Planning LLC, 2012

Assumed Zoning Densities		
Retail Floor Area Ratio	0.3	SF
Office Floor Area Ratio	0.5	SF
Residential Dwelling Units per Acre	50	Acre

Acquisition, Demolition & Site Work		
Site Acquisition Cost		$5,500,000
Demolition Costs per CF		$7.00
Residential Buildings	0	$0
Office Buildings	0	$0
Retail Buildings	0	$0
Public Buildings	0	$0
Haz Mat Abatement:		$0
Site Prep & Grading: Entire Site		$200,000
Site Infrastructure Costs		8.00%

Residential: Multi-Family Rental		
Efficiency Rate	92%	
Avg. Unit Size	1,200	SF
Parking Spaces per Unit	1.25	spaces
Construction Costs: Low-Rise	$125	per SF
Construction Costs: Mid-Rise	$150	per SF
Average Rent per SF/Month	$1.65	
Vacancy Rate: Rental	5.00%	
Operating Expenses per SF	$4.00	per SF

Retail: Ground Floor		
Efficiency Rate	90%	
Parking Spaces per 1,000 SF	1.75	spaces
Construction Costs: Shell	$90	per SF
Construction Costs: Fit Out	$20	per SF
Construction Costs: Shell + Fit Out	$110	per SF
Rent per SF: Triple Net	$25	per SF
Vacancy Rate: Retail	5.00%	
Operating Expenses per SF	$2.00	per SF

Office: Class A		
Efficiency Rate	90%	
Parking Spaces per 1000 SF	2.00	spaces
Construction Costs: Inclusive of shell and fit-up	$180	per SF
Rent per SF	$25.00	
Vacancy Rate: Class A	10.00%	
Operating Expenses per SF	$7.00	per SF

Parking		
SF per Space: Structured	400	SF
SF per Space: Surface	300	SF
Construction Costs: Structured	$20,000	per space
Construction Costs: Surface, New	$3,500	per space
Construction Costs: Surface, Existing	$2,000	per space

Misc		
Sales Cost	5.00%	
Hold Period	15	years
Investment Return Goal: Unleveraged	10%	
Inflation Factor	2.70%	
Estimate of Annual Real Property Taxes	$2.00	per SF

Cap Rates	
Residential	7.00%
Retail	7.50%
Office	8.00%

In an effort to identify what level of financial subsidy (dollar value) would likely be required, in order for the above modeled TOD program to achieve a ten percent IRR, the study team conducted sensitivity testing within the financial model –varying certain development cost components within the model to see how the financial return rate would respond. Based on this sensitivity testing, it was found that under the 30 dwelling unit/acre scenario, an upfront subsidy[32] of approximately $6.0 million would be required (maintaining all other assumptions constant) in order to achieve a 10 percent IRR over the 15-year project period. When performing the sensitivity testing on the 50 dwelling unit/acre scenario, an upfront subsidy of approximately $6.4 million would be required to achieve the 10 percent IRR. See Exhibit 7-9 for results.

It should go without saying that, while TOD activity is certainly viable (given the indicated caveats and qualifications), a TOD, of any scale or dwelling unit density, would be challenged, at best, to contribute any financial assistance towards public infrastructure improvements, such as a new parking structure benefitting SEPTA commuters. As stated above, the greater likelihood is that a TOD project that goes forward in Willow Grove will seek its own financial assistance from the public sector.

Exhibit 7-9: Public Subsidy Required to Achieve Market Rate of Return

	Initial IRR	Subsidy of additional public funding required to achieve 10% IRR	Public subsidy as a percent of total project investment
Lower Development Threshold 30 Unit/Acre Scenario	7.20%	**$6.0 million**	18.8%
Upper Development Threshold 50 Unit/Acre Scenario	8.00%	**$6.4 million**	13.6%

[32] Upfront subsidy calculated in sensitivity testing is exclusive of the cost of rail infrastructure, station-specific parking and facilities as outlined in Chapter 5 and Chapter 6.

Additional Commentary

There have been a number of questions posed by Revitalization Task Force members throughout this analysis, regarding a variety of Willow Grove TOD development related issues, many of which cannot neatly be addressed in the above analysis format. An attempt to address these issues is presented in the following question/answer format:

- **Question:** Given that the proposed Willow Grove Lofts development (within a quarter-mile of the Willow Grove Train Station) has developer backing and appears to be moving closer to final site plan approval, shouldn't additional Willow Grove TOD projects, close-in to the station, move along with similar developer backing?

- **Answer:** The Lofts development project represents a significantly different development/redevelopment scenario than will be encountered by future TOD developers in Willow Grove. Specifically, the approximately 1.7 acre site (to include 73 multi-family rental units over a two-story structured parking deck), already contained several income producing properties (albeit, these properties required a minimum amount of investment to bring them up to market conditions) and were acquired at an estimated per acre cost of $705,000 – representing just over half the estimated per acre cost associated with the properties in the near-term TOD scenario (approximately $1,3765,000 per acre). No demolition costs were incurred for the site (far different than what a developer will encounter under the near-term TOD scenario); indeed, the cleanup of more than 200 tons of scrap steel present on the site, netted the purchaser $25,000.

  Further, the Lofts development project features only residential development (the traditional definition of a TOD is mixed-use development).

  Based on the above development characteristics associated with the Lofts project, we do not believe it to be a good comparison with future TOD development around the Willow Grove station.

- **Question:** Can't a "patient" property acquisition and TOD development strategy work for Willow Grove?

- **Answer:** There is no question that a patient land-development strategy will be required to achieve development of scale (30 units an acre or higher) within the Willow Grove TOD catchment area. However, this issue is not directly germane to what scale of development is necessary to viably contribute, financially, towards certain public infrastructure, such as a structured parking garage, as identified within the financial section of this chapter. Indeed, and what has not been modeled by the study team, is that any developer looking at any of the prospective TOD scenarios (e.g., near-term, intermediate-term, and long-term) will likely have to purchase options on one or more parcels of land, as part of a "patient" development strategy.

- **Question:** What type of development entity is best suited for achieving a TOD of scale (e.g., 200 dwelling units or more, in addition to retail, office and lodging development)?

- **Answer:** The likely development entity capable of undertaking a large-scale TOD project in Willow Grove will be well capitalized (a REIT or large regional developer with plenty of liquidity), willing and able to sustain many years of negative cash flow while the project is built and stabilizes, and capable of negotiating leases with both local and national credit tenants. Based on the financial crises of a few years ago and its aftermath, there are relatively few such developers standing in the market place.

- **Question:** If we created a tax increment financing (TIF) district around the station area, wouldn't this help contribute, financially, to a new commuter parking structure?

- **Answer:** While TIF has been and continues to be successfully used by the public sector, in partnership with private development entities, to facilitate a cash flow stream sufficient to underwrite certain public infrastructure related debt (e.g., parking structures), the scale of development likely required to yield net tax revenues sufficient to achieve an adequate cashflow stream (see fiscal impact analysis findings in this memorandum) would require a project nearly ten times either of the scenarios examined in this analysis. Further, the largest portion of the net new tax revenues generate would be earmarked for the local school district and, as such, a further analysis would need to be performed to determine whether diverting any of that funding stream would have any adverse impact to the local school district.

The Lumberyard Condominium Project in Collingswood, NJ provides many insights into the risks and complexities inherent to developers and municipalities (as guarantor of loan notes) who partner in TOD revitalization projects.

Fiscal Impact Methodology

Based on the above two identified TOD dwelling unit density scenarios (30 units per acre and 50 units per acre), the study team performed a fiscal impact analysis focused on build-out implications.

A community or fiscal impact analysis examines the linkage between local government revenue generated by new development and its resultant municipal service costs (e.g., police, fire, schools, sanitation, etc.). The outcome of such an analysis is to produce a project related estimate of community service costs to projected revenues, a "cost-revenue ratio", which will be positive (a revenue surplus), negative (a revenue shortfall) or neutral (break-even).

As part of its analysis, the study team evaluated projected full build-out fiscal impacts (utilizing current fiscal metrics), based on the above identified, market supportable residential-commercial land-use mix. the study team utilized a variety of data sources and conventional fiscal impact methodologies, including the incorporation of the latest residential multipliers developed by Rutgers University on behalf of the U.S. Census Bureau. Upper Moreland Township's current year general fund revenue and expenditure data were also examined and incorporated within the analysis model.

The objective of this fiscal impact analysis was to estimate:

- Development generated municipal service costs/revenues
- Development generated school district costs/revenues
- Development generated public school age children
- Development generated employment (construction and permanent)
- Development generated capital needs/costs

The study team used a combination of qualitative and quantitative methods to conduct this fiscal impact analyses, based on the most widely used "per capita" fiscal impact method. The per capita approach starts by determining current public services cost on a per unit basis (i.e. per student for the school district). With non-educational services, however, merely to divide incurred outlays by the local population is incorrect; such services benefit both residential and non-residential land uses. Services costs must consequently be allocated between these two types of development. To achieve this, the study team assigned a service cost factor of .25 to non-resident workers. This factor approximates what is within an acceptable range of an average service cost ratio for nonresident workers in many communities, nationally.

In preparing for the fiscal impact analysis, the study team refined an Excel based fiscal impact algorithm, the "Preview Model", developed by the Rutgers University based Center for Urban Policy Research (CUPR) and used by many land-use professionals around the country. The algorithm was calibrated with the most recent residential multipliers pertaining to the northeast, inclusive of estimates for public school age children, promulgated by Rutgers University in 2007.

Data inputs and associated information were obtained through a variety of sources, including interviews with the Upper Moreland Township school district business administrator, review of online municipal budget records, and examination of municipal service benchmark metrics (e.g., number of full-time police officers per 1,000 population). Exhibit 7-10 presents the key fiscal analysis input metrics utilized in the subsequent analysis.

Exhibit 7-10: Key Fiscal Analysis Input Metrics

Local Government and School District Metrics [a]			
2010 Upper Moreland Township Population			24,015
2012 Upper Moreland Township School District Estimated Expenditure per Student			$12,500
Township Tax Metrics [b]			
Real Estate Tax	0.42% Township	2.67% School	
Wage Tax (Earnings Tax)	1.00% Resident	1.00% Non-Resident	

Notes

[a] **Sources:** US Census, Upper Moreland Township, Montgomery County, Upper Moreland School District, City-Data.com

[b] **Source:** Upper Moreland Township

Source: 4ward Planning LLC, 2012

The following exhibits detail the scenario-specific inputs and estimated fiscal impacts associated with the near-term 30 dwelling unit per acre TOD scenario:

Exhibit 7-11: 30 Dwelling Unit/Acre TOD Scenario Build-Out Program

Land Use	Amount	Metric	New/Existing
Residential	120	Units	New
Retail/Dining/Entertainment	15,000	SF	New
Office	10,000	SF	New
Structured Parking Garage	146	Spaces	New
Surface Parking Garage	50	Spaces	New

Source: 4ward Planning LLC, 2012

Exhibit 7-12: 30 Dwelling Unit/Acre Development Generated Estimated Service Costs

			Worker	Estimated	Est. per Worker		
		Resident	Non-Resident	Per Resident	Non-Resident		
		Percent	Percent	Service Cost	Service Cost		
Estimated 2012 Per Capita Municipal Service Cost:	$726	70%	30%	$508	$218		
Estimated 2012 Per Pupil Public School Expenditure:	$12,500		Estimated				
			Percent New	Number New	Est. New	New School	Sub
			to Upper Moreland	to Upper Moreland	Service Costs	Expenditures	Totals
Development Generated Population:		280	33%	92	$46,891		
Total Public School Age Children:		37	30%	11	$5,674	$139,560	**$186,451**
Total Public Elementary School Children:		*25*	*28%*	*7*	*$3,552*	*$87,360*	*$90,912*
Total Public Junior High School Children:		*8*	*30%*	*2*	*$1,207*	*$29,700*	*$30,907*
Total Public High School Children:		*6*	*30%*	*2*	*$915*	*$22,500*	*$23,415*
				Estimated			
			Non-Resident	Non-Resident	Est. New		
			Jobs Factor	Jobs	Service Costs		
Development Generated Employment:		88	0.29	26	$5,581		**$5,581**
Retail/Dining/Entertainment:		*38*	*0.15*	*6*	*$1,225*		*$1,225*
Office:		*50*	*0.40*	*20*	*$4,356*		*$4,356*
					Projected Total New Public Costs:		**$192,032**

Sources: Upper Moreland Township; Upper Moreland Township School District; 4ward Planning LLC, 2012

Exhibit 7-13: 30 Dwelling Unit/Acre Projected Revenues by Land-Use Type and Related Activities

			Realty	Realty	Real Estate		Real Estate						
		Est. Average	Transfer	Transfer	Propety Tax Rates		Propety Tax Revenue						Estimated Total
Residential	Units	Sale Price/Unit	Tax Rate	Revenue	Twp.	School	Twp.	School					Revenues
Owner-Occupied	0	$0	0%	$0	0.42%	2.67%	$0	$0					$0
							Real Estate		Real Estate				
		Est. Annual	Estimated	Estimated	Est. Market Value of		Propety Tax Rates		Propety Tax Revenue		Use and	Use & Occ.	
		Total Rent	Annual NOI	Cap Rate	Residential Rentals		Twp.	School	Twp.	School	Occupancy Tax	Tax Revenue	
Renter-Occupied	120	$1,794,442	$986,943	7.0%	$14,099,184		0.42%	2.67%	$18,755	$120,463	0.00%	$0	$139,219
												Total Estimated Revenues from Residential Related Land-Uses:	$139,219
							Real Estate		Real Estate				
		Est. Annual	Estimated	Estimated	Est. Market Value of		Propety Tax Rates		Propety Tax Revenue		Use and	Use & Occ.	
Retail/Dining/Entmt.	SF	Total Rent	Annual NOI	Cap Rate	Retail Properties		Twp.	School	Twp.	School	Occupancy Tax	Tax Revenue	
Real Estate Related	15,000	$356,250	$195,938	8.5%	$2,305,147		0.42%	2.67%	$3,066	$19,695	0.00%	$0	$22,762
							Wage Tax Rates		Wage Tax Revenues				
		Est. Total	Est. Total	Percent	Pct.								
		Employment	Annual Pay	Residents	Non-Residents		Resident	Non-Resident	Resident	Non-Resident			
Employment Related		38	$680,160	85%	15%		1.00%	1.00%	$5,781	$1,020			$6,802
		Est. Average	Est. Total	Twp. Sales	Est. Annual Sales			Net New Tax		Annual Net New			
		Annual Sales/S.F.	Annual Sales	Tax Rate	Tax Revenues			Revenue Pct.		Tax Revenues			
Sales Related	15,000	$300	$4,500,000	0.0%	$0			35%		$0			$0
												Total Estimated Revenues from Retail Related Land-Uses:	$29,563
							Real Estate		Real Estate				
		Est. Annual	Estimated	Estimated	Est. Market Value of		Propety Tax Rates		Propety Tax Revenue		Use and	Use & Occ.	
Office	SF	Total Rent	Annual NOI	Cap Rate	Office Properties		Twp.	School	Twp.	School	Occupancy Tax	Tax Revenue	
Real Estate Related	10,000	$237,500	$130,625	8.5%	$1,536,765		0.42%	2.67%	$2,044	$13,130	0.00%	$0	$15,174
							Wage Tax Rates		Wage Tax Revenues				
		Est. Total	Est. Total	Percent	Pct.								
		Employment	Annual Pay	Residents	Non-Residents		Resident	Non-Resident	Resident	Non-Resident			
Employment Related		50	$2,527,200	60%	40%		1.00%	1.00%	$15,163	$10,109			$25,272
												Total Estimated Revenues from Office Related Land-Uses:	$40,446
							Real Estate		Real Estate				
		Est. Annual	Estimated	Estimated	Est. Market Value of		Propety Tax Rates		Propety Tax Revenue		Use and	Use & Occ.	
Industrial	SF	Total Rent	Annual NOI	Cap Rate	Industrial Properties		Twp.	School	Twp.	School	Occupancy Tax	Tax Revenue	
Real Estate Related	0	$0	$0	8.0%	$0		0.42%	2.67%	$0	$0	0.00%	$0	$0
							Wage Tax Rates		Wage Tax Revenues				
		Est. Total	Est. Total	Percent	Pct.								
		Employment	Annual Pay	Residents	Non-Residents		Resident	Non-Resident	Resident	Non-Resident			
Employment Related		0	$0	67%	33%		1.00%	1.00%	$0	$0			$0
												Total Estimated Revenues from Industrial Related Land-Uses:	$0
							Real Estate		Real Estate				
		Est. Annual	Estimated	Estimated	Est. Market Value of		Propety Tax Rates		Propety Tax Revenue		Use and	Use & Occ.	
Lodging	SF	Total Rent	Annual NOI	Cap Rate	Lodging Properties		Twp.	School	Twp.	School	Occupancy Tax	Tax Revenue	
Real Estate Related	0	$0	$0	9.0%	$0		0.42%	2.67%	$0	$0	0.00%	$0	$0
							Wage Tax Rates		Wage Tax Revenues				
		Est. Total	Est. Total	Percent	Pct.								
		Employment	Annual Pay	Residents	Non-Residents		Resident	Non-Resident	Resident	Non-Resident			
Employment Related		0	$0	75%	25%		1.00%	1.00%	$0	$0			$0
												Estimated	
		Estimated	Est. Total	Twp. Hotel	Est. Annual Twp.			Est. Non-Room		Est. Total Annual	Twp. Sales	Annual Sales	
	Rooms	Annual RevPAR	Annual Sales	Tax Rate	Hotel Tax Revenues			Revenue/Room		Non-Room Revenue	Tax Rate	Tax Revenues	
Sales Related	0	$78	$0	0.0%	$0			$15.00		$0	0.0%	$0	$0
												Total Estimated Revenues from Industrial Related Land-Uses:	$0
												Total Estimated Revenues from All Land-Uses:	$209,228

Exhibit 7-14: 30 Dwelling Unit/Acre Summary of Net Fiscal Impact Findings

Net Fiscal Impacts		**$17,197**
Projected Service Costs		**$192,032**
Public Schools		$139,560
City Services		$52,472
Projected Capital Costs		$0
Schools		$0 [a]
Wastewater		$0 [b]
Roads		$0 [c]
Projected Net New Revenues		**$209,228**
Real Estate Property Tax Revenues		$177,155
City	*$23,866*	
School	*$153,289*	
Realty Transfer Tax Revenue		$0
Use and Occupancy Tax Revenue		$0
Wage Tax Revenues		$32,074
Resident	*$20,945*	
Non-resident	*$11,129*	
City Sales Tax Revenues		$0
Hotel Tax Revenue		$0

Notes

[a] Assumes no need for new classroom space

[b] Assumes existing capacity is sufficient

[c] Requires additonal data and information

Source: 4ward Planning LLC, 2012

Fiscal Impact Findings – 30 dwelling unit/acre Scenario

The above fiscal impact outputs, based on a prospective 30 dwelling/unit per acre (multi-family rental) mixeduse TOD project would result in a modest annual net fiscal surplus of $17,197, at project stabilization (normal occupancy levels for all land-uses). It should be noted, however, that a variety of project factors (e.g., net new employment levels and wages, actual numbers of school age children generated, and real property values achieved) will all influence the likely range of the net fiscal impacts realized. Consequently, and given the relatively low net fiscal surplus identified for this scenario, it is not a forgone conclusion that a 30 dwelling unit/acre TOD scenario will produce a net positive fiscal impact to Upper Moreland Township. Consequently, we suggest that an additional fiscal impact analysis be performed at that time that a developer proposal and land-use program is formally presented.

The following tables identify key inputs and estimated fiscal impacts associated with the near-term 50 dwelling unit per acre TOD scenario:

Exhibit 7-15: 50 Dwelling Unit/Acre TOD Scenario Build-Out Program

Land Use	Amount	Metric	New/Existing
Residential	200	Units	New
Retail/Dining/Entertainment	15,000	SF	New
Office	10,000	SF	New
Structured Parking Garage	246	Spaces	New
Surface Parking Garage	50	Spaces	New

Source: 4ward Planning LLC, 2012

Exhibit 7-16: 50 Dwelling Unit/Acre Development Generated Estimated Service Costs

			Worker	Estimated	Est. per Worker		
		Resident	Non-Resident	Per Resident	Non-Resident		
		Percent	Percent	Service Cost	Service Cost		
Estimated 2012 Per Capita Municipal Service Cost:	$726	70%	30%	$508	$218		
Estimated 2012 Per Pupil Public School Expenditure:	$12,500						
			Estimated				
			Percent New	Number New	Est. New	New School	Sub
			to Upper Moreland	to Upper Moreland	Service Costs	Expenditures	Totals
Development Generated Population:		466	33%	154	$78,151		
Total Public School Age Children:		62	30%	19	$9,457	$232,600	**$310,751**
Total Public Elementary School Children:		*42*	*28%*	*12*	*$5,920*	*$145,600*	*$151,520*
Total Public Junior High School Children:		*13*	*30%*	*4*	*$2,012*	*$49,500*	*$51,512*
Total Public High School Children:		*10*	*30%*	*3*	*$1,525*	*$37,500*	*$39,025*
				Estimated			
			Non-Resident	Non-Resident	Est. New		
			Jobs Factor	Jobs	Service Costs		
Development Generated Employment:		88	0.29	26	$5,581		**$5,581**
Retail/Dining/Entertainment:		*38*	*0.15*	*6*	*$1,225*		*$1,225*
Office:		*50*	*0.40*	*20*	*$4,356*		*$4,356*
					Projected Total New Public Costs:		**$316,332**

Sources: Upper Moreland Township; Upper Moreland Township School District; 4ward Planning LLC, 2012

Exhibit 7-17: 50 Dwelling Unit/Acre Projected Revenues by Land-Use Type and Related Activities

Residential	Units	Est. Average Sale Price/Unit	Realty Transfer Tax Rate	Realty Transfer Revenue	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School				Estimated Total Revenues	
Owner-Occupied	0	$0	0%	$0	0.42%	2.67%	$0	$0				$0	
		Est. Annual Total Rent	Estimated Annual NOI	Estimated Cap Rate	Est. Market Value of Residential Rentals	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School	Use and Occupancy Tax	Use & Occ. Tax Revenue		
Renter-Occupied	200	$2,990,736	$1,644,905	7.0%	$23,498,640	0.42%	2.67%	$31,259	$200,772	0.00%	$0	$232,031	
												Total Estimated Revenues from Residential Related Land-Uses:	$232,031
Retail/Dining/Entmt.	SF	Est. Annual Total Rent	Estimated Annual NOI	Estimated Cap Rate	Est. Market Value of Retail Properties	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School	Use and Occupancy Tax	Use & Occ. Tax Revenue		
Real Estate Related	15,000	$356,250	$195,938	8.5%	$2,305,147	0.42%	2.67%	$3,066	$19,695	0.00%	$0	$22,762	
		Est. Total Employment	Est. Total Annual Pay	Percent Residents	Pct. Non-Residents	Wage Tax Rates Resident	Wage Tax Rates Non-Resident	Wage Tax Revenues Resident	Wage Tax Revenues Non-Resident				
Employment Related		38	$680,160	85%	15%	1.00%	1.00%	$5,781	$1,020			$6,802	
		Est. Average Annual Sales/S.F.	Est. Total Annual Sales	Twp. Sales Tax Rate	Est. Annual Sales Tax Revenues		Net New Tax Revenue Pct.		Annual Net New Tax Revenues				
Sales Related	15,000	$300	$4,500,000	0.0%	$0		35%		$0			$0	
												Total Estimated Revenues from Retail Related Land-Uses:	$29,563
Office	SF	Est. Annual Total Rent	Estimated Annual NOI	Estimated Cap Rate	Est. Market Value of Office Properties	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School	Use and Occupancy Tax	Use & Occ. Tax Revenue		
Real Estate Related	10,000	$237,500	$130,625	8.5%	$1,536,765	0.42%	2.67%	$2,044	$13,130	0.00%	$0	$15,174	
		Est. Total Employment	Est. Total Annual Pay	Percent Residents	Pct. Non-Residents	Wage Tax Rates Resident	Wage Tax Rates Non-Resident	Wage Tax Revenues Resident	Wage Tax Revenues Non-Resident				
Employment Related		50	$2,527,200	60%	40%	1.00%	1.00%	$15,163	$10,109			$25,272	
												Total Estimated Revenues from Office Related Land-Uses:	$40,446
Industrial	SF	Est. Annual Total Rent	Estimated Annual NOI	Estimated Cap Rate	Est. Market Value of Industrial Properties	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School	Use and Occupancy Tax	Use & Occ. Tax Revenue		
Real Estate Related	0	$0	$0	8.0%	$0	0.42%	2.67%	$0	$0	0.00%	$0	$0	
		Est. Total Employment	Est. Total Annual Pay	Percent Residents	Pct. Non-Residents	Wage Tax Rates Resident	Wage Tax Rates Non-Resident	Wage Tax Revenues Resident	Wage Tax Revenues Non-Resident				
Employment Related		0	$0	67%	33%	1.00%	1.00%	$0	$0			$0	
												Total Estimated Revenues from Industrial Related Land-Uses:	$0
Lodging	SF	Est. Annual Total Rent	Estimated Annual NOI	Estimated Cap Rate	Est. Market Value of Lodging Properties	Real Estate Propety Tax Rates Twp.	Real Estate Propety Tax Rates School	Real Estate Propety Tax Revenue Twp.	Real Estate Propety Tax Revenue School	Use and Occupancy Tax	Use & Occ. Tax Revenue		
Real Estate Related	0	$0	$0	9.0%	$0	0.42%	2.67%	$0	$0	0.00%	$0	$0	
		Est. Total Employment	Est. Total Annual Pay	Percent Residents	Pct. Non-Residents	Wage Tax Rates Resident	Wage Tax Rates Non-Resident	Wage Tax Revenues Resident	Wage Tax Revenues Non-Resident				
Employment Related		0	$0	75%	25%	1.00%	1.00%	$0	$0			$0	
	Rooms	Estimated Annual RevPAR	Est. Total Annual Sales	Twp. Hotel Tax Rate	Est. Annual Twp. Hotel Tax Revenues		Est. Non-Room Revenue/Room		Est. Total Annual Non-Room Revenue	Twp. Sales Tax Rate	Estimated Annual Sales Tax Revenues		
Sales Related	0	$78	$0	0.0%	$0		$15.00		$0	0.0%	$0	$0	
												Total Estimated Revenues from Industrial Related Land-Uses:	$0
												Total Estimated Revenues from All Land-Uses:	$302,041

Exhibit 7-18: 50 Dwelling Unit/Acre Summary of Net Fiscal Impact Findings

Net Fiscal Impacts	**-$14,291**
Projected Service Costs	**$316,332**
Public Schools	$232,600
City Services	$83,732
Projected Capital Costs	$0
Schools	$0 [a]
Wastewater	$0 [b]
Roads	$0 [c]
Projected Net New Revenues	**$302,041**
Real Estate Property Tax Revenues	$269,967
City	*$36,369*
School	*$233,598*
Realty Transfer Tax Revenue	$0
Use and Occupancy Tax Revenue	$0
Wage Tax Revenues	$32,074
Resident	*$20,945*
Non-resident	*$11,129*
City Sales Tax Revenues	$0
Hotel Tax Revenue	$0

Notes

[a] Assumes no need for new classroom space

[b] Assumes existing capacity is sufficient

[c] Requires additonal data and information

Source: 4ward Planning LLC, 2012

Fiscal Impact Findings – 50 dwelling unit/acre Scenario

The above fiscal impact outputs, based on a prospective 50 dwelling/unit per acre (multi-family rental) mixed-use TOD project would result in a modest annual net fiscal deficit of $14,291, at project stabilization (normal occupancy levels for all land-uses). It should be noted, however, that a variety of project factors (e.g., net new employment levels and wages, actual numbers of school age children generated, and real property values achieved) will all influence the likely range of the net fiscal impacts realized. Consequently, and given the relatively low net fiscal deficit identified for this scenario, it is not a forgone conclusion that a 50 dwelling unit/acre TOD scenario will produce a net negative fiscal impact to Upper Moreland Township. Consequently, we suggest that an additional fiscal impact analysis be performed at that time that a developer proposal and land-use program is formally presented.

8. PUBLIC FUNDING SOURCE IDENTIFICATION

At a minimum, the total estimated capital costs for the rail station improvements for this project are estimated to be approximately $15 million. These costs are directly related to rail infrastructure and the provision of station-specific parking, and are not anticipated to be borne by a private developer. For reasons identified in the financial analysis presented in Chapter 7, a further public subsidy of approximately $6.4 million would be needed in order to incentivize surrounding redevelopment independent of rail station costs. **The total minimum public investment anticipated results in over $21 million of public funding required to implement the near-term station design implementation and the 50 dwelling unit per acre scenario outlined in this study.** It should be noted that this minimum threshold, which does not fully implement all station design and redevelopment potential, is considered the minimum threshold for testing feasibility.

While private investors are willing to participate in potential public-private partnerships to realize these visions, market rate investment returns were not established in this study's analysis. The study's principal conclusion is that the government's participation (local, state, federal) is essential to minimizing the risk to private investors for revitalization to occur in Willow Grove. There is a public benefit in pursuing revitalization in and around the Willow Grove train station. The area still retains a regionally advantageous location to support commuter rail ridership, as no comparable highway connection and level of service exists. Should funding commitments and market conditions align, the area need only wait for an appropriately sized and timed revitalization plan to capitalize on the rail station. For now, however, it can be sufficiently concluded that while development scenarios would benefit from proximity to an upgraded train station, the funding required exceeds the capacity for public or private entities outside of Upper Moreland Township to absorb and justify the additional expenditure of such station upgrades. The significant costs for upgrading public infrastructure, such as the SEPTA Willow Grove Station, in and of itself has also been found to be unlikely to incentivize or change market conditions in Willow Grove such that larger-scale transit-oriented development hinges on this investment being made. Ultimately, the Willow Grove Station improvements represent a public facility that will require public investment. The coordination of rail station investment in Willow Grove, to build upon and be integrated with other incremental public investments in revitalization remains the best strategy to pursue, allowing planning to continue in anticipation of future changes in the public and private funding outlook.

There are a number of different federal and state grants and financing programs that could be pursued for the purposes of offsetting the required subsidy for rail station improvemens. The funding identified should not be viewed as a definitive or complete list, but as a guideline to some of the more commonly used approaches for funding rail infrastructure and associated redevelopment.

Grant Programs

TIGER

The U.S. DOT provides funding for freight, highway, transit, port and bicycle/pedestrian projects infrastructure projects including road and bridge improvements; transit upgrades; freight, port and rail expansions; and new options for bicyclists and pedestrians through TIGER Discretionary Grants (Transportation Investment Generating Economic Recovery). They are competitive grants are to be awarded each year to fund innovative transportation projects in urban and rural areas across the country. The 2011 TIGER III program received 848 project applications from all 50 states requesting a total of $14.29 billion, far exceeding the $511 million allocated. Congress recently appropriating $500 million for a 2012 TIGER IV program that concluded in March 2012 . Subsequent TIGER V funding is anticipated to be made available.

Transportation Enhancements Program (TE)

The Transportation Enhancements Program is a cost reimbursement program that uses federal funds for community-based projects that according to the FHWA, "expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic and environmental aspects of our transportation infrastructure." A project that applies for TE funding must be one of 12 eligible activities and relate to surface transportation. Some of the Willow Grove Station project activities that may qualify for TE funds include smaller-scale pedestrian and bicycle improvements and landscaping and scenic beautification.

Projects are selected through a collaborative process that involves the Pennsylvania Department of Transportation, FHWA, Metropolitan Planning Organizations, and Rural Planning Organizations. As a reimbursement program, the applicant forwards invoices to PennDOT who in turn pays the service providers. More information about the TE Program can be found through the following links.

Surface Transportation Program (STP)

The Surface Transportation Program provides flexible funding, apportioned to States, that may be used by States and localities for certain projects, including transit capital projects such as transit safety infrastructure improvements and rail-highway crossings. Funds were provided for the program under the federal surface transportation bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which funds federal highway, safety, and transit programs. SAFETEA-LU originally expired in 2009 however it was extended seven times rather than pass a new, long-term bill. It was extended most recently for the eighth time under the Surface and Air Transportation Programs Extension Act (H.R. 2887) signed into law by the president on September 15, 2011. That act extends the allocation of certain transportation program funds to states for programs such as the STP, through March 31, 2012. Highway and

transit programs will receive funding at fiscal 2011 levels - $19.8 billion for highways and $4.2 billion for transit paid out of the Highway Trust Fund. A 20% local match is required for projects.

Rail and Fixed Guideway Modernization Grants

Funds are provided under the Fixed Guideway Modernization Program was originally designed to ensure the proper renovation of the nation's older rail transit systems, and the program continues to ensure that as Federal New Starts investment projects age, they can be modernized. A "fixed guideway" refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. Eligible activities are capital projects to modernize or improve existing fixed guideway systems, including purchase and rehabilitation of rolling stock, track, line equipment, structures, signals and communications, power equipment and substations, passenger stations and terminals, security equipment and systems, maintenance facilities and equipment, operational support equipment including computer hardware and software, system extensions, and preventive maintenance.

Community Development Block Grants (CDBG)

The Community Development Block Grant (CDBG) program provides annual grants on a formula basis to 1209 general units of local government and States. For municipalities that do not receive CDBG entitlement grants from HUD (cities with populations of less than 50,000 and counties with populations of less than 200,000), states administer funds to these non-entitlement areas through the State CDBG program. The objective of the CDBG program is to develop viable communities by providing decent housing and a suitable living environment and by expanding economic opportunities, principally for persons of low- and moderate-income. The State must ensure that at least 70 percent of its CDBG grant funds are used for activities that benefit low- and moderate-income persons. Communities receiving CDBG funds from the State may use the funds for many kinds of community development activities including, but not limited to:

- acquisition of property for public purposes;
- construction or reconstruction of streets, water and sewer facilities, neighborhood centers, recreation facilities, and other public works;
- demolition;
- rehabilitation of public and private buildings;
- public services;
- planning activities;
- assistance to nonprofit entities for community development activities; and
- assistance to private, for profit entities to carry out economic development activities (including assistance to micro-enterprises).

Other Financing Techniques

Low Interest Loans

- **Transportation Infrastructure Finance and Innovation Act (TIFIA) program**
  The Transportation Infrastructure Finance and Innovation Act provides Federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. Many surface transportation projects - highway, transit, railroad, intermodal freight, and port access - are eligible for assistance. Eligible applicants include state and local governments, transit agencies, railroad companies, special authorities, special districts, and private entities. TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and potentially more favorable interest rates than can be found in private capital markets for similar instruments. TIFIA can help advance qualified, large-scale projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues. Each dollar of Federal funds can provide up to $10 in TIFIA credit assistance - and leverage $30 in transportation infrastructure investment.

  A key feature of this financing approach is the ability to issue bonds backed by a larger capital source (i.e. Federal/State Infrastructure Bank) and secured by loan repayments from a pool of local borrowers, as opposed to one locality, which reduces risk for investors and therefore interest rate for borrowers. These loans can be repaid back from a number of different sources including dedicated tax revenues, special assessments, or user fees associated with the new infrastructure investment.

- **Railroad Rehabilitation & Improvement Financing (RRIF)**
  The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance development of railroad infrastructure. Under the program, the Federal Rail Administration provides direct loans and loan guarantees up to $35.0 billion. Up to $7.0 billion is reserved for projects benefiting freight railroads other than Class I carriers. Direct loans can fund up to 100% of a railroad project with repayment periods of up to 35 years and interest rates equal to the cost of borrowing to the government. Eligible borrowers include railroads, state and local governments, government-sponsored authorities and corporations, joint ventures that include at least one railroad, and limited option freight shippers who intend to construct a new rail connection.

  The funding may be used to:
  - Acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings and shops;
  - Refinance outstanding debt incurred for the purposes listed above; and
  - Develop or establish new intermodal or railroad facilities

- ***Tax Increment Financing (TIF)***

  Tax Increment Financing is an economic development instrument whereby all or a portion of the new taxes generated by a development within a designated TIF District can be used to pay for improvement costs related to that development or developments. It is authorized by the Commonwealth of Pennsylvania under the Tax Increment Financing Act of July 11, 1990, P.L. 465, No. 113, 53 P.S. Section 6930.1, et. Seq which permits the use of the incremental increases in real estate taxes resulting from real estate development to support revenue bonds. Bond funds issued as part of a TIF are used to finance public improvements associated with new development within the TIF District.

  Additionally, the state of Pennsylvania provides a Tax Increment Financing (TIF) Guarantee Program which provides credit enhancement for TIF projects to improve market access and lower capital costs through the use of guarantees to issuers of bonds or other indebtedness.

  TIF districts and guidelines, such as those already established for Upper Moreland Township, represent an innovative way of securing the necessary cash flow in order to raise debt financing for infrastructure projects. Under this scenario, a developer sponsor pays property taxes based on the value of the property prior to any improvements. However, due to the improvements or new infrastructure there is an increase in property values and thus an increase in property taxes within the designated TIF. The difference between the pre-improvement taxes and the new tax amount is directed into a fund, which in turn will go to finance the improvements or service the debt.

  The TIF system relies on the appreciation in value of the land and buildings in the TIF district. If a development is profitable, then the debt and other costs will be paid for by the growth of property tax revenues. If the property fails to increase in value, the improvement costs fall back on the general taxpayer. There is an obvious risk to the taxpayer if the project is not successful and the marginal difference between pre-tax and redeveloped tax amounts is insufficient to fund the debt and infrastructure costs incurred.

APPENDIX A

Appendix A-1: Public Meeting Summaries

Willow Grove Train Station
RELOCATION FEASIBILITY STUDY

Public Meeting #1 Summary

The first public meeting for the Willow Grove Train Station Relocation Feasibility Study occurred on June 23, 2011. The meeting drew approximately 100 members of the public, who participated in stations designed to facilitate in-depth discussion of many aspects of the study. Members of the Revitalization Task Force helped staff the stations along with the contract study team. The stations used included:

1. An introduction station with presentation on existing conditions and resources on transit-oriented development;
2. A market and real estate analysis station with team members from 4Ward Planning;
3. A "dot comment" map station inviting meeting participants to give comments on a specific issue and/or location;
4. A survey station allowing participants to complete the first survey either online or on paper; and
5. A drawing station encouraging participants to sketch their ideas for Willow Grove.

The stations yielded many comments and discussion points about the study itself and the issues and opportunities of relocating the train station. Some of the themes of discussion included:

Safety – With poor lighting, inconsistent streetscape, and very little activity on the street, participants felt the area around the existing station feels unsafe. One participant stated that after the stores close for the evening, there is poor lighting and no one around, adding to pedestrian discomfort.

Traffic – The circulation around the train station, especially when a train is in the station, is perceived as being challenging, with one participant sharing "...Traffic is impossibly difficult already." The idea that a new train station might alleviate some of the car/train crossing issues proved very popular.

Relocation area – Many individuals asked why the proposed relocation area was limited to the Davisville Road block. One individual shared, "It seems short-sighted to just study one area in the feasibility study. I would like to see what would happen if the station were moved farther north."

Reuse of existing structures – On both the dot comment map and at the introduction station, participants commented that existing, usable structures should be preserved, adapted, and re-used. One participant suggested that the existing train station be used for a café instead of being demolished.

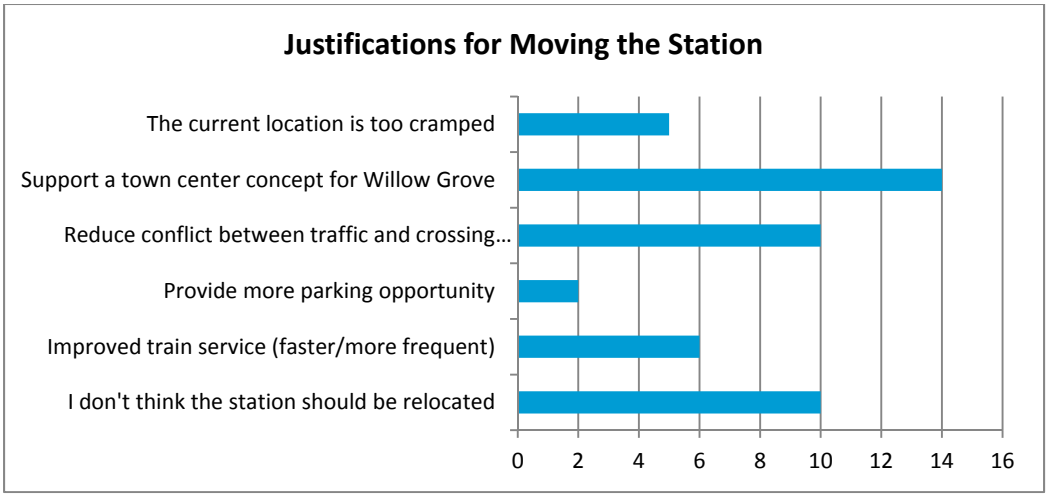
Parking accessibility and availability – The points of view about parking were incredibly mixed. One person commented, "We need to leverage parking we already have that is not being used in this area. Commercial parking rarely, if ever, reaches capacity... This improves pedestrian life as well as increasing the likelihood of people walking instead of driving. "A second identified a site with different parking potential, saying, "Move the station north where the parking is."

Willow Grove Train Station
RELOCATION FEASIBILITY STUDY

Survey response trends and observations

A total of 48 individuals responded to the survey between June 23 and July 15. Thirty-nine of the 48 respondents identified themselves as residents of Upper Moreland Township. Somewhat surprisingly, nearly half of respondents (21) identified themselves occasional SEPTA riders using the train for non-work travel. Only ten respondents were daily commuters.

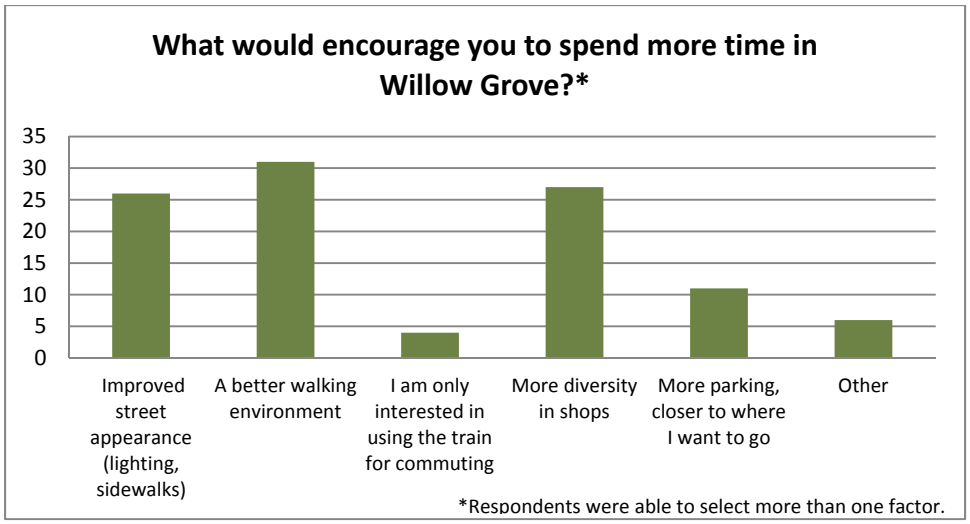
Overall support for the town center concept – Participants were asked to select what single factor would justify moving the train station. The highest-scoring justification was to support a town center concept for Willow Grove (29%), followed by reducing train/vehicular traffic conflicts (21%). Overall, 21% of respondents stated that they did not think the station should be relocated.



Support for revitalization but uncertainty about relocation area – Many meeting participants and survey respondents wondered how the relocation area south of the current train station was selected, stating that they felt moving the train station to help the revitalization process was a worthy reason to move forward, but that only examining a move to one location was limiting. For example, one participant stated, "*This town needs upgrading and the placement of the train station is crucial for now and in the future. Simply moving it south because it is convenient is not the answer. Maybe it will go south, maybe north, but it needs to fit the future plan*."

Importance of walkability and the public realm – The issue of the overall public realm and pedestrian experience seems to be important issues for many people interacting with the existing train station. When asked about the importance of a number of factors in choosing to live near the train station, 75% of respondents rated walkability as 4- important or 5- very important. In asking what would induce individuals to spend more time in Willow Grove, the factor(s) most frequently selected also focused on walkability and the public realm. Thirty-one of 48 respondents named a better walking environment as a one of the factors that would encourage them to spend more time in Willow Grove;

26 respondents stated that improved streetscaping, lighting, and sidewalks would encourage them to spend more time in Willow Grove. The complete results are shown on the chart below.



Concerns over vehicular circulation and delays – Survey respondents were asked to select which feature or features of the current station need improvement, including better passenger amenities, difficulty boarding trains, parking availability, connections to other transit, distance to businesses, circulation, traffic delays, and bicycle parking. While many people stated that they wanted a better pedestrian environment to help the future revitalization of Willow Grove, responses to this question overwhelmingly indicated that vehicular traffic is an important problem to fix – 67% selected traffic delays at the railroad crossing as an important improvement, and 63% selected circulation around the station as a feature needing improvement. Parking had the third-highest number of votes with 25 of 48 respondents citing parking as a problem needing a solution.

Preference for inexpensive, close parking – The parking preference questions indicate an overall desire for close, inexpensive parking ($1/day) with 60% of people rating it as 4 – desirable or 5 – most desirable. In contrast, when asked about the desirability of structured parking with a price of about $3/day, 53% of people indicated that this parking arrangement is either 1- least desirable or 2- less desirable. Responses about the desirability of shared parking with businesses were fairly evenly split, as were responses about giving priority to favor train commuters.

Willow Grove Train Station
RELOCATION FEASIBILITY STUDY

Public Meeting #2 Summary

The second public meeting for the Willow Grove Train Station Relocation Feasibility Study occurred on November 8, 2011. Approximately 70 members of the public, local business owners, members of the Revitalization Task Force, and other stakeholders attended the meeting. The public meeting was advertised via email, on local blogs like the Upper Moreland Patch, through Facebook, on the School District's news network, and with flyers at local businesses and the train station. For those providing information, the most effective advertising methods seemed to be the flyers placed on cars and at the train station, word-of-mouth, and emails from the Task Force Members.

The second meeting was composed of a presentation of alternative concepts both overhead and on display boards. Attendees had the opportunity to ask questions throughout the presentation; they also were provided pens and sticky notes to place their comments directly on the presentation boards. This annotation concept allowed for the collection of preferences, comments, and concerns that relate spatially to all or part of each concept displayed at the meeting. Additionally, since some individuals had overall comments rather than site-specific ones, general feedback forms were available. The meeting ran in two sessions to accommodate many stakeholders.

Feedback form comments and meeting observations

Nine feedback forms were returned at the conclusion of the meeting. The following observations stem from not only those feedback forms but also from the discussions had at the meetings.

- Traffic continues to be a concern, both for everyday vehicular circulation and for fire/EMS access, as the Second Alarmers Rescue Squad would be impacted by any closure of Davisville Road. Additionally, one stakeholder wondered how pedestrian circulation (and its associated challenges) fit into the feasibility study.
- As we heard at the first meeting, people would generally like the current station to be reused or adapted into a café, shop, or other amenity, even if the station itself moves farther north or south. Residents see the existing station as an important community element, no matter its future use.
- Participants expressed concern at the future well-being of existing local businesses in a revitalization scheme. While the Task Force Members and the consultant team explained many times that revitalization does not automatically mean that existing businesses will be torn down or forced to move, this continues to be a concern for residents of Willow Grove.
- Some participants stated that they felt leaving the train station at its current location or moving it north would be less expensive options than moving to the Davisville Block. While there was no financial or cost data presented with the concepts, this perception that not moving or moving to

a less dense location will be cheaper, whether or not it is true, should be addressed in future engagement efforts and in the presentation of the preferred alternative.

- One participant noted that Concepts B and C "allow for the most flexible for parking options and straightforward private development."

Concept board comments and trends

The concept boards yielded 27 comments across all concepts; most comments were "yea or nay" in nature rather than support or concern over individual elements of the concepts. Concepts A1 and C2 generated the most discussion while Concept A2 received only one comment. The

Concept A1 – Willow Grove Station at South Davisville Block with closed Davisville Road. This concept generated a lot of excitement at the meeting. One participant shared that this was the ideal concept because "if we're going to do it, do it all!" Another person felt this was "a good and practical plan;" still another felt this could be a great location to bring in a theater or support the arts. However, closing Davisville Road is a concern both for overall traffic impacts and specifically for the location of the Second Alarmers Rescue Squad. Participants proposed the solution of connecting Davisville road to Easton Road across the current station site or at Bally's.

Concept A2 – Willow Grove Station at South Davisville Block with structured parking. This concept yielded little conversation, and feedback on this concept was only negative; its sole comment was, "NO!"

Concept B1 –Willow Grove Station at existing location with structured parking on inbound side of tracks. One participant expressed concern about not having much parking on the Davisville Road side of the station, while another was concerned about increased traffic from the parking garage being a safety hazard to children and Memorial Park users. On the positive side, one participant felt this concept could lead to (in her opinion) unattractive properties on York Road to be demolished and used for train station purposes. Additionally, one participant liked the concept because it allowed for shared parking and supported a larger number of buildable parcels.

Concept B2 – Willow Grove Station at existing location with expansion on outbound side of tracks. This concept was universally liked, and was one of the few where participants expressed specific parts of the concept that were attractive. The things participants said they liked at this site included: more parking, structured parking, elevated platforms, that it would not interfere with use of Memorial Park, that it provided options to connect the existing station to new development, and that the location enhanced the small-town feel of Willow Grove.

Concept C1 – Willow Grove Station north on Davisville Road on south side of tracks. This concept did not generate much discussion. However, one participant observed that this concept would be "quick but

with low potential" for overall revitalization efforts. Another person stated that this location was appropriate, but that there was not enough parking in the concept.

Concept C2 –Willow Grove Station north on Davisville Road on north side of tracks. The conversation surrounding this concept was decidedly mixed. One participant discarded this option, stating that it "takes away from the quaintness of Willow Grove." Another person stated that s/he did not believe the train station contributes to Willow Grove at all, and therefore the station should be moved even further north. Others stated they liked this concept and wondered if it might lead to development on Davisville Road and how the train-bus connections would work.

Willow Grove Train Station
RELOCATION FEASIBILITY STUDY

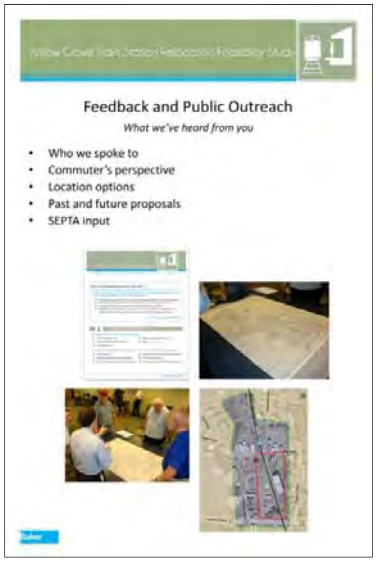
Public Meeting #3 Summary

The third and final public meeting for the Willow Grove Train Station Relocation Feasibility Study occurred on May 9, 2012. The meeting ran in two sessions to accommodate many stakeholders. Approximately 45 members of the public, local business owners, members of the Revitalization Task Force, and other stakeholders attended the meeting. The public meeting was advertised at the Willow Grove Train Station ticket booth as well as via email, on local blogs, Facebook, the School District's news network, at the Upper Moreland Township Municipal Building, and with flyers placed on cars parked at the station before the meeting.

The final meeting focused on presenting the final Feasibility Study results to the public and collecting feedback on the final results of the study. Project Manager Ryan Furgerson provided a 30-minute overview of the results. After the presentation, attendees were invited to circulate amongst three stations focused on public involvement/outreach, station and development scenarios, and funding and conclusions. Each station included an illustrative display board and a flip chart on which members of the project team documented comments and conversations. Additionally, attendees were able to provide general comments on the study results and the meeting using a general comment form available both in paper and electronic formats (see http://www.willowgrovestation.com/final-meeting-feedback).

Meeting Feedback

In general, it seemed that people attending the meeting were quite interested in hearing the result of the study rather than in asking specific questions about it. As a result, no paper or online feedback forms were submitted to the project team. However, attendees engaged in discussion about the study results after each of the meeting presentations. Major comments and themes are presented by station below.



Outreach/Feedback Station

The Outreach/Feedback Station provided information on who provided input throughout the study process as well as the kinds of feedback the stakeholders provided, including providing the commuter's perspective, feedback on locations, opinions on past and future proposals, and SEPTA's input on the technical aspects of the study.

In general, attendees were pleased that their input in the first and second meetings was able to be incorporated into the results of the study, from looking at expanded station locations to the increased focus on traffic issues throughout the study area. A few participants stated that they were pleased that the study came to the conclusion that

moving the station would not be feasible; however, as one man stated, “Even though it is not feasible for the station to move, the study had to be done so that the community could make informed decisions about revitalization and the future of the train station.” Others hoped that the station in its current location could be improved by placing a coffee shop or newsstand inside the station to make it more inviting for commuters.

Station and Development Scenario Station

The Station and Development Scenario Station focused on the proposed development concept and its associated elements. The station discussed how concepts were evaluated, traffic impacts, parking needs, rail infrastructure issues, and implementation needs.

Since the study found that it was not feasible to move the station, some of the conversations focused on making the current location better. From the uncertain future of the Bally’s site to incorporating retail in the current station, attendees wanted to enhance the current station area. They felt the station is a regional asset that could be used to expand into un- and underutilized buildings. However, some recognized the difficulty of assembling parcels in the station area.

As expected from previous meetings, traffic and circulation were often-discussed issues. One attendee stated that getting the train out of the intersections is essential. Another stated that technology could be used to assist with traffic impacts now, without a wait. The lack of a safe crossing from the station to the courthouse is an issue currently, and poor circulation might also be a reason for the underutilized parking at the SEPTA lot. Finally, there were two comments specifically about the station and its functionality. Some stated that Willow Grove needs half-hour service during peak hours. Another attendee wondered if Upper Moreland considered selling naming rights like AT&T Station.

Funding and Conclusions

The final station focused on the specifics of the market analysis, surrounding development opportunities, the need for public investment in Willow Grove, and the overall fiscal impact of any development in the neighborhood of the train station. The discussions at this station centered on the level of public investment that would be required by development around the train station. Additionally, a member of the project team discussed the financial analysis done for the train station site and the expected short-, mid-, and long-term project costs.

Appendix A-2: SEPTA Technical Review Feedback

Willow Grove Train Station Relocation Feasibility Study
Technical Review Meeting #1 – 10/20/11

ATTENDEES:

Jeff Knueppel –	SEPTA, Assistant General Manager/Chief Engineer
Byron Comati –	SEPTA, Director of Strategic Planning and Analysis
Jody Holton –	SEPTA, Manager of Long Range Planning
Steve Thompson –	SEPTA, Track Department
Jerry Maier –	SEPTA, Real Estate
Marian Hull –	URS Corporation, Upper Moreland Township Redevelopment Coordinator
Karen Houck -	Upper Moreland Township, Revitalization Task Force
Joseph LaValle –	Upper Moreland Township, Commissioner
Ryan Furgerson –	Michael Baker, Transit Planner/Project Manager
Fred Silverman –	Michael Baker, Senior Rail and Transit Planner

MEETING DISCUSSION NOTES

A PowerPoint presentation (attached) was utilized to present project information to those in attendance. The main topics included a background of the project, and update of accomplishments thus far, and a review of locations and station area concepts in detail.

During the study background presentation, Mr. Furgerson noted the necessity for additional consensus building regarding a station location site. He explained that the study team encountered significant public comment and desire to pursue a northern site for potential train station relocation. This is in addition to the South Davisville Block location that was identified within a defined relocation area in the TCDI grant awarded to the township. For all locations, the project work scope includes the development of evaluation methodology to make clear to the public and stakeholders the comparative trade-offs associated with each concept. In response to a question from SEPTA, it was noted that the increase in parking capacity (no concept was envisioned to reduce currently available parking) would be one of the quantitative evaluation criteria in this methodology. Current parking includes 116 daily ($1/day), 32 monthly permit ($20/month), and 42 reduced daily rate ($0.50/day) parking spaces, for a total of 190 spaces. In establishing parking needs, it was noted by Mr. Furgerson that the station receives many walk-up passengers from the surrounding community and some existing riders may park in municipal or private parking adjacent to the station, since all SEPTA parking is not observed to be fully utilized.

Discussion points of each of the station concepts included the following:

Concept A1

- Based upon previously envisioned planning effort (2007 Traffic/Pedestrian Study), which illustrated a closure of Davisville Road west of York Road
- Only section of tangent track near Willow Grove core, with road closure providing approximately 900’ between grade crossings along the railroad right-of-way.

- Shows the ability to feature parking on both sides of the station area, which facilitates ingress/egress. Parking south of the station (where current Public Storage facility is located) would allow station parking to not compete with business parking needs in the Willow Grove core.
- Increased delays would be anticipated at grade crossing crossing with Moreland Rd. The primary component to grade-crossing delays has been identified as the approach and departure of trains into the station area. It was noted that high-level platforms and better acceleration/deceleration of new train sets are potential mitigating factors in reducing station dwell and rail crossing interference.

Concept A2

- Based upon a previously envisioned planning effort (2003 Revitalization Study), which illustrated a reconfigured Davisville Road and potential train station/development between Davisville Road and the railroad tracks.
- Features only 650' between grade crossings for high-level platforms, which accommodates anticipated train consists but is constraining factor in station design.
- Could represent an initial phasing of Concept A1,representing an initial development prior to incorporating additional (surface) parking south of the station.
- Without a direct pedestrian underpass connection between tracks, would require riders to reach the outbound track via walkways at the platform ends.

Concept B1

- ADA compliance can be achieved on the track curvature throughout the existing station area. Gaps between the car and platform could be managed. There is no high/wide freight requirement for this line, which also facilitates high-level platforms on the station area curve.

- Incorporates a potential parking structure envisioned for the current municipal and SEPTA parking south of Memorial Park Drive. A two level structure would provide as many as 300 spaces, with additional levels and other amenities scalable to private development interest.

- Platforms would be staggered to preserve existing station building.

- The proposed concept would utilize property/parcels already within SEPTA/municipal control. An investment here would also support the previous investment in Memorial Park Drive, using it as a primary access point for the station.

Concept B2

- Illustrated ample parking expansion potential.

- Discussed the concept of track signal adjustment to allow a train to stop (with incorporation of Positive Train Control) in the station area and not impact the grade crossing until the train is

ready to depart. The crossing gates remaining down during the approach of the train and throughout its station dwell time has been identified as a concern of residents.

- The concept would involve expansion into adjoining property on Davisville Road, however the property owner has been identified as willing to relocate this business.
- Discussion also involved the desire of Upper Moreland Township to expand revitalization along Davisville Road, with a station in this configuration potentially serving as a catalyst.
- Developer interest has also focused primarily on redevelopment around this station location rather than in the South Davisville block, with a greater potential for joint development of a structured parking facility.
- This concept also presents multiple parking locations, separating traffic ingress/egress.
- A pedestrian crossing facility could support access to Memorial Park and take advantage of existing topography.

Concept C1

- Concepts in this location did not envision relocating the station further north than the Settlement Music School along Davisville Road.
- The ability to leverage development on both sides of the station may outweigh the desire to limit capital investment to a single platform and parking facility. Eventual expansion to double track with this concept would also require a pedestrian connection component.
- The current Grove Siding is sufficiently long to make adjustments, however the municipal control of land near the other end of the siding (Upper Moreland Township Public Works) could allow the entire siding to be shifted without impacting its current length.

Concept C2

- The indicated willingness of the VFW to reconfigure Memorial Park opens up potential for the train station but could also trigger environmental review procedures (NEPA 4f analysis) as a required component of federal funding.
- The location of the park suffers from a lack of connectivity and activity which has created a safety concern for this area.
- The bus bay features depicted in this concept (in all other concepts as well) were envisioned to facilitate existing connection to local transit service (SEPTA Horsham Breeze, TMA shuttles). The bays were not intended for larger SEPTA vehicles nor was the redirection of these routes (Route 55) directly into the station site anticipated. Without route adjustments, however, the distance to existing transit connections on York Road increase from this location.

Mr. Furgerson noted that various components of each of these concepts may be included in a preferred scenario. The testing of various platform configurations, track/infrastructure requirements, and development potential is evidenced in different concepts. SEPTA indicated that in terms of operation, signal, parking, and circulation improvements would most favor upgrades at the existing station site. Mr. Furgerson noted that the ability to extend double track through the station area only would allow for future double track investment as development along the line and in Willow Grove was initiated. It was also recognized that the ability to avoid future conflicts at busy grade crossings, especially if train frequency were to increase, is a priority. Mr. Knueppel noted that despite the appeal of some of these concepts, the SEPTA Capital Budget is extremely limited. It was also recognized that the conceptual analysis has not fully addressed all issues associated with the property acquisition process. SEPTA indicated that Mr. Thompson would follow up on signaling implications of reducing the distance and duration of grade crossing gates to be activated by trains approaching to stop at the station. It was indicated that a technical/scheduling solution to the issue of grade crossing delay may prove a valuable component of any new station concept.

The meeting concluded with a brief discussion on the presentation of concepts at the upcoming public meeting (November 9th-Township Bldg., featuring a 5:00pm and 7:00pm presentation/involvement exercise. It was determined that the evaluation matrix will be updated to reflect the comments received and that residents will be asked to comment on the advantages/disadvantages each concept presents rather than simply vote for a preferred concept.

Willow Grove Train Station Relocation Feasibility Study
Technical Review Meeting #2 – 3/07/12

ATTENDEES:

Jeff Knueppel –	SEPTA, Assistant General Manager/Chief Engineer
Byron Comati –	SEPTA, Director of Strategic Planning and Analysis
Jody Holton –	SEPTA, Manager of Long Range Planning
Steve Humes –	SEPTA, Track Department
Tony Bohara -	SEPTA, Director Engineering
Jerry Maier –	SEPTA, Real Estate
David Anderson -	DVRPC, Manager of Corridor Planning
Wesley Ratko -	Montgomery County – Transportation Planner
Marian Hull –	URS Corporation, Upper Moreland Township Redevelopment Coordinator
Karen Houck -	Upper Moreland Township, Revitalization Task Force
Joseph LaValle –	Upper Moreland Township, Commissioner
David Dodies -	Upper Moreland Township Manager
Todd Poole -	4Ward Planning, Principal
Ryan Furgerson –	Michael Baker, Transit Planner/Project Manager

MEETING/FOLLOW_UP DISCUSSION NOTES

A PowerPoint presentation (attached) was utilized to present project information to those in attendance on station design concepts and initial funding conclusions.

Station design comments were provided in writing following the meeting from SEPTA, and included the following:

1. <u>High level platform phasing.</u> The plan should assume that the high level platforms would be constructed at the same time along with the extension of Grove siding. The Grove siding is important to allow for passing trains, and if we move all boarding and alighting to the siding, we would no longer be able to pass trains here. This would cause a problem for service planning. If the high level platform was installed, and we ran service to the high level platform on the inbound side and the low level platform on the outbound side, we would have an ADA issue.
2. <u>New ADA- compliant, pedestrian at-grade crossing.</u> On the concept plan, please show the new pedestrian at-grade crossing farther south of the new high level platforms. If the pedestrian crossing were located near to the high level platforms, the platforms would block pedestrians' view of trains. Even though we would retain the pedestrian warning devices, providing adequate sight distance is a necessary element of the design. Typically, SEPTA would prefer to have a pedestrian overpass or have pedestrians cross at the nearest road. Additional design work and safety analysis will need to occur to determine whether or not this is a safe alternative.

3. Track siding extension & switch. The siding points should be located more than 20 feet from the highway crossing at 611 to stay clear of accidents and snow accumulation from plowing.
4. 40-foot bus access. The description of the Station Facility says that only 30-foot or shorter buses would be able to access the station. There are occasions when SEPTA needs to substitute buses for rail service on the Warminster line, and in the past we have used Memorial Park Drive access for these buses. The site plan should allow for this access.

Mr. Furgerson noted that various elements tested during the implementation planning phase were designed to test the least cost investment in Willow Grove Station features. The draft final report was updated to reflect SEPTA comments but retained the reasoning that shows all attempts were explored to produce a station concept that could be implemented at the lowest possible cost.

It should be further noted that during the meeting, the financial analysis was still unfolding. There was significant internal discussion about the assumptions utilized to develop TOD scenarios and the relationship to the station location. SEPTA reaffirmed that it is a willing partner for development but that it is not interested in developing station parking itself, it is facing significant capital funding shortfalls, and a long-term development approach, with strong local advocacy, will likely be needed to achieve new results (Mr. Maier referred to the complexities of the Ardmore Station project as a case in point).

The meeting concluded with the understanding that further market/development potential and scenario details will be provided by the consultant team with the purpose of illustrating clearly if there is potential to leverage rail station specific infrastructure needed to create a strong downtown.

Appendix A-3: Developer Interview Notes

Memorandum

To: Ryan Furgerson, Baker Engineering

From: Todd J. Poole

CC:

Date: January 27, 2012

Re: Willow Grove TOD & Station Relocation Study

The following findings are the result of transcribed interviews of three land developers in the greater Montgomery County and Philadelphia region, all recorded between January 12 and January 19, 2012. Each developer (listed below) offered examples of relevant TOD experience and advice on development of the current study area. In support of the Willow Grove TOD and Station Relocation Study, the findings can be grouped into five sub-topics: *train station location, TOD demographics, Multi-family housing revenue, TOD development costs, and parking considerations*.

Train Station Location

- The most efficient technical solution is to keep the station at its current location, adding amenities and parking, and expanding for SEPTA use; OR
- The station could be moved south, offering more opportunities for success than a northern relocation.
- The developer should ask how vehicles and pedestrians will access this location. If the train station is further away or simply perceived as such, commuters will less likely utilize it.
- The developer should ask where the core of development must take place. Currently, York and Easton are “Ground Zero” along the 611 corridor.
- Memorial Park should/will be viewed as an amenity for any development in the area.

TOD Demographics

- The demographics of potential renters will likely resemble those of the Warminster TOD: young professionals commuting into the city, empty-nesters, returning military personnel, and divorcees. Most of these are childless households.
- The Warminster TOD average annual household income is between $50K and $100K.
- Willow Grove multi-family housing units will likely need to fall somewhere between the “cheap and the choice,” attracting upwardly mobile young professionals while remaining relatively affordable, as local salaries are not keeping pace with land costs.

- Willow Grove TOD development makes sense, as there is no new product along the 611 corridor.

Multi-family Housing Revenue

- The 232 rental units in the Warminster development are composed of one- and two-bedroom units (50/50) from between approximately 750-1100 sq ft., the two-bedroom units fetching around $1.40/sq ft. and the one-bedroom units fetching around $1.55/sq ft. (amenities include clubhouse with community room, pool, and fitness center).
- Typically, the regional suburbs are fetching $1.50-1.75/sq ft. in rent.
- $1.25/sq ft. is more common for older rental product in the area.
- The Warminster development has allowed for approximately 5000 sq ft. in retail space.

TOD Development Costs

- One developer estimated a non-union, "stick-built," 3-4-story multi-family unit would cost approximately $110K-$150K (less site costs) to build.
- Developable land in Willow Gove will likely fetch $25K-$30K/lot.
- Financing for developer:
    - Interest rate is about 75-80% for construction.
    - LIBOR plus 250 or 300 (about 5%), a floating rate with 24 months to build and lease, with two six-month extensions.
    - Cash-on-cash returns: 10% (no one is recovering 20%).

Parking Considerations

- Above-ground parking structures cost approximately $20K-$25K, with little to no direct return on parking for the investor.
- A public/private investment in a parking structure would greatly alleviate the cost burden. An example of such a partnership can be found at Bethesda Row in Bethesda, MD, where Montgomery County erected a garage before any redevelopment was initiated.
- Asphalt prices have increased, making surface parking $5-$10K /space.
- Shared surface parking spaces should be considered.

INTERVIEWEES

Jason Duckworth, Arcadia Development

David Joss, Federal

Greg Rogerson, Pertrucci Development and Design

FOLLOW-UP ITEMS

- Contact Spencer Yablin at Marcus & Millcap for information on multi-family unit development.
- See Cornerstone Communities for information on multi-family unit rent (they collect approximately $1.75/sq ft).

APPENDIX B

Market and Real Estate Analysis

Market and Real Estate Analysis

Willow Grove Station Relocation Feasibility Study

Prepared For: Township of Upper Moreland, PA

June 8, 2011

ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™

Table of Contents

Demographic Trends

Methodology

4ward Planning LLC employed a combination of qualitative and quantitative techniques suitable for performing a background analysis and market research on the area surrounding the Willow Grove Train Station.

Demographic trends were analyzed for the Willow Grove Primary Market Area (PMA), represented by a 10-minute drive-time contour surrounding the train station; Montgomery County; and the Philadelphia Metropolitan Statistical Region (MSA). Demographic trends and projection analyses were performed using U.S. Census data and proprietary demographic analysis software (ScanUS). The demographic analysis covers the years 2000, 2010 (estimated), and 2015 (projected).

Key Findings

Flat population and household growth

The Willow Grove Primary Market Area (PMA), Montgomery County, and the Philadelphia MSA experienced relatively flat growth in household population (only 0.03 percent annually in the Willow Grove PMA), as well as total households (-0.3 percent annually in the Willow Grove PMA) from 2000 to 2010. This trend is projected to continue through 2015. This observation is consistent with population trends throughout much of the northeast and reflects a combination of declining fertility rates and a decrease in in-migration to the region.

Decreasing family households

All three geographies experienced declines in family households (and simultaneous increases in non-family households) from 2000 to 2010, declining by over 10,000 households in the Willow Grove PMA. This trend also is projected to continue through 2015 and is closely associated with factors associated with population trends, identified above.

24.5 percent

The projected growth in the 55-and-older population within the Willow Grove PMA from 2000 to 2015. This demographic cohort typically reside in small households (e.g., empty nesters or single persons), have relatively higher discretionary incomes, and are increasingly utilizing mass transit for both entertainment and work related destinations.

More than 45 percent

By 2015, the number of households within the Willow Grove PMA earning $75,000 or more per year are projected to represent more than a 45 percent increase over the number of area households earning a similar income in 2000. The projected increase in upper income households within the PMA bodes well for attracting a variety of retail (e.g., restaurants, convenience goods, personal services) to the PMA.

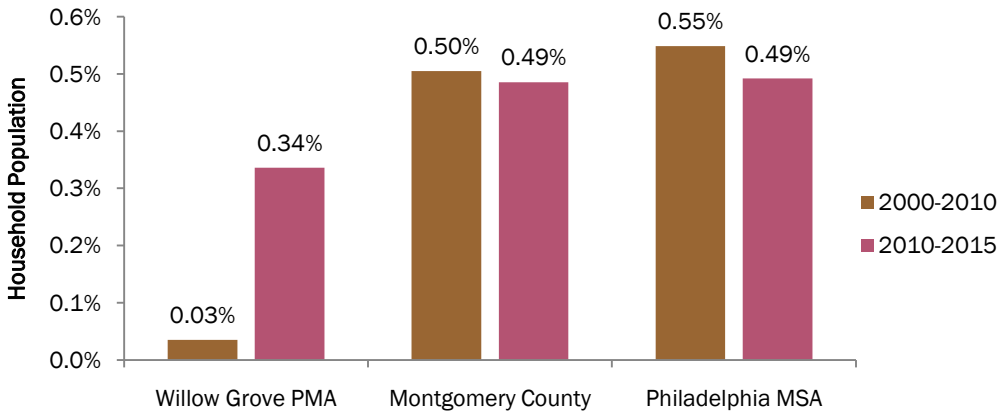
Household Population

The Willow Grove PMA's household population[1] was approximately 514,900 in 2010, representing nine-percent of the Philadelphia MSA. The Willow Grove PMA, Montgomery County, and the Philadelphia MSA all experienced relatively flat household population growth from 2000 to 2010, with the county and MSA growing slightly faster (approximately 0.5 percent per year) than the PMA (a .03 percent increase per year) over the same period. Flat household population growth trends are projected to continue through 2015 across all geographies – reflective of population trends throughout the northeast.

Table 1: Household Population by Geography

	Household Population (in thousands)		
Geography	**2000**	**2010**	**2015**
Willow Grove PMA	**513.1**	**514.9**	**523.6**
Montgomery County	**726.8**	**763.5**	**782.1**
Philadelphia MSA	**5,513.9**	**5,816.6**	**5,959.7**

Figure A-1: Annualized Percentage Change in Household Population



Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

1 - Household population refers to total population minus all persons living in group quarters or institutions.

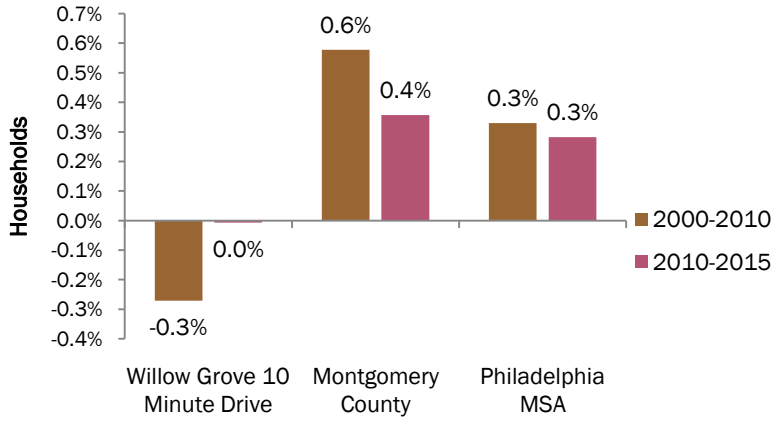
Household Formation

Despite the slight increase in population within the Willow Grove PMA over the 2000 to 2010 period, the total number of households within the PMA decreased by approximately 5,500 households over the same period – a 2.7 percent decline. Conversely, the county and MSA experienced net new household formation of 16,500 (5.8 percent) and 70,400 (3.3 percent), respectively, over the same period

Table 2: Total Households by Geography

Geography	Households (in thousands) 2000	2010	2015
Willow Grove PMA	201.5	196.0	196.0
Montgomery County	286.1	302.6	308.0
Philadelphia MSA	2,134.4	2.204.8	2,236.0

Figure A-2: Annualized Percentage Change in Total Households by Geography



Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Increasing Population and Decreasing Households

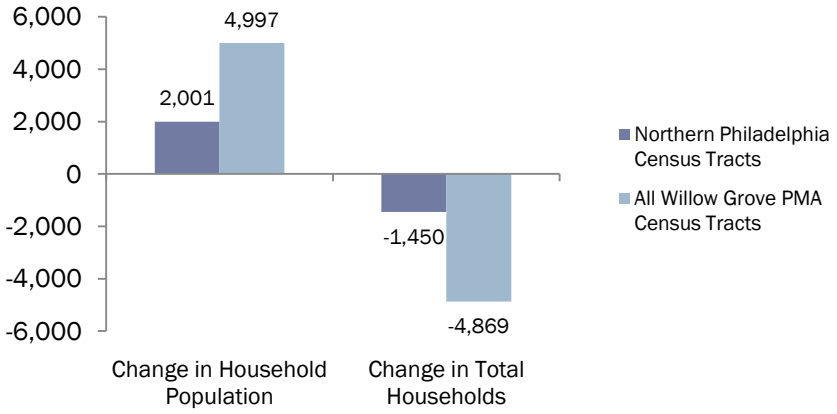
Within the Willow Grove PMA, household population increased between 2000 and 2010, while total households in the region decreased over the same time period – an unusual phenomenon. To understand this occurrence, 4ward Planning examined population and household trends in the PMA by census tract and found the following:

•In most of the 143 census tracts corresponding to the Willow Grove PMA, growth in household population and total households were positively correlated—census tracts that saw decreases in household population also tended to see decreases in total households, and vice-versa.

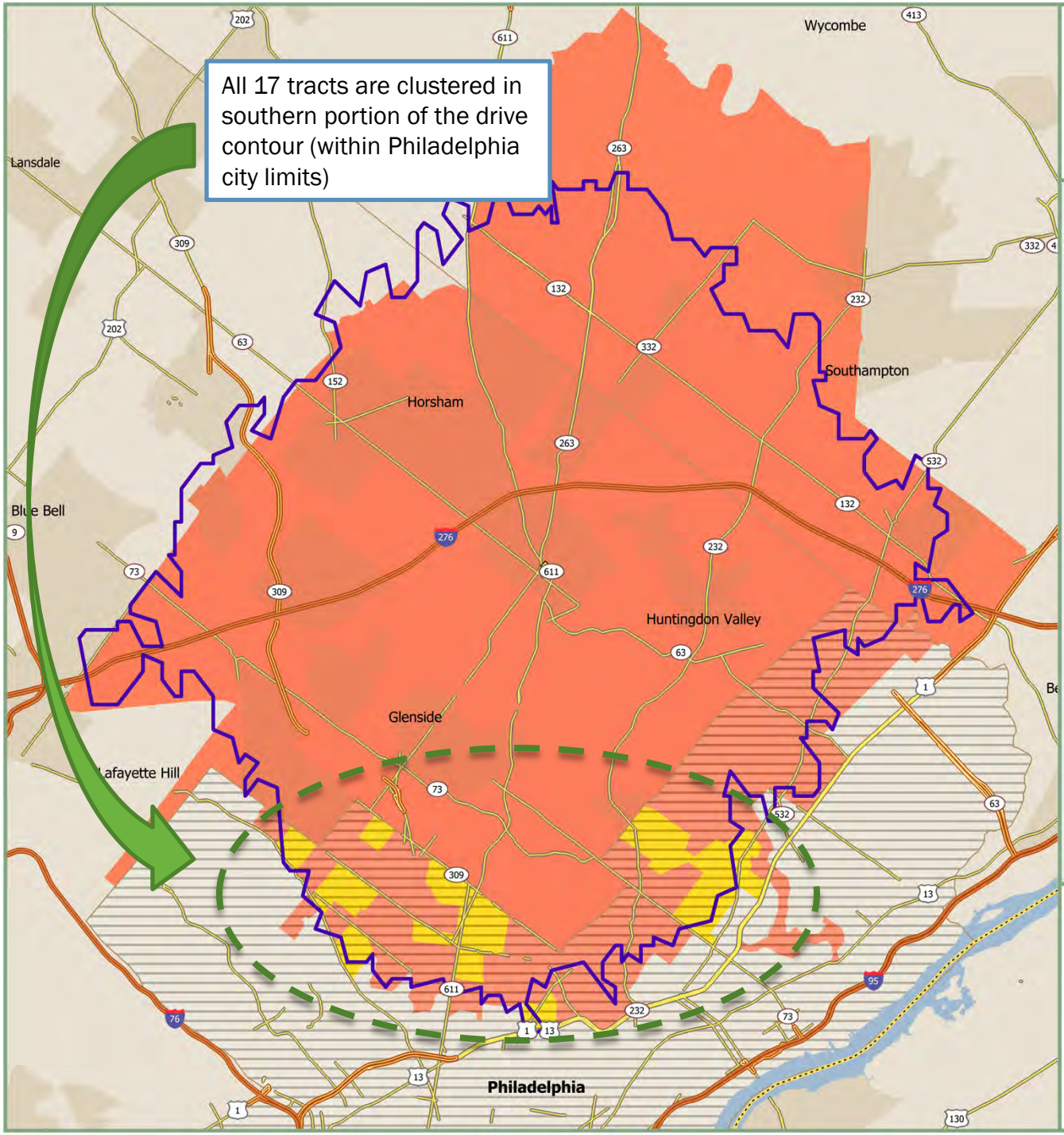
•In 17 census tracts, all concentrated within northern Philadelphia, household population and total households were negatively correlated, such that household population increased while total households decreased, over the 2000-2010 time period.

•Changes in these 17 northern Philadelphia census tracts accounted for 40 percent of the total increase in population, and 30 percent of the total decrease in households, observed in the Willow Grove PMA.

Figure A-3: Change in Household Population and Total Households - Census Tract Comparison



Source: US Census Bureau; ScanUS; 4ward Planning LLC, 2011



Household Decline and Population Increase

Willow Grove, PA and surrounding area

LEGEND

- Willow Grove 10-Minute Drive Contour
- Philadelphia
- Drive contour census tracts
- Tracts experiencing decline in households and increase in population, 2000-2010

1 inch = 2 miles

Data Sources:
Scan/US; PASDA;
NJ DEP

5/6/2011

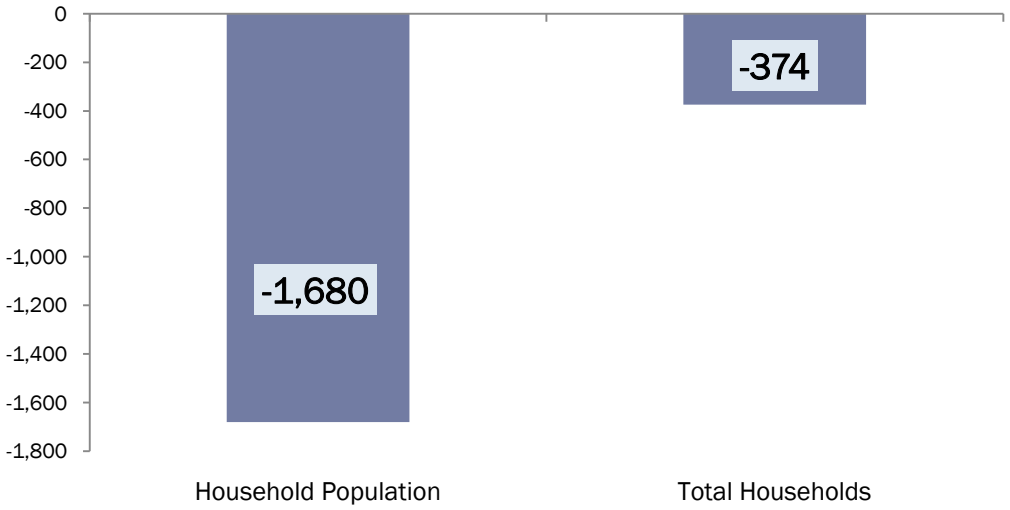
4WARD PLANNING

Trends within the Immediate Area

4ward Planning also examined household population and total household trends in the area immediately adjacent to the train station (within a 5-minute drive of the train station). In this subarea of the PMA, which excludes northern Philadelphia, household population and total household trends are positively correlated (move within the same direction). Specifically, over the 2000-2010 time period, household population and households decreased by 1,680 persons, and 374 households, respectively.

In summary, over the 2000-2010 time period, there has been a trend of negative growth in both household population *and* total households in the area within a five-minute drive of Willow Grove. Throughout the larger PMA, and especially in select areas of northern Philadelphia, there has been a trend of slight *positive* growth in household population and slight *negative* growth in total households.

Figure A-4: 2000-2010 Change in Household Population and Total Households, Willow Grove 5-Minute Drive Contour



Source: US Census Bureau; Scan US; 4ward Planning LLC, 2011

Household Consolidation

Though it is not possible to isolate a singular cause-and-effect relationship to fully explain these observations, 4ward Planning believes a significant portion of the household consolidation observed within the Willow Grove PMA is due to the economic downturn which began in 2007 and the effects of which continue to exhibit themselves in a decrease in the number of households and associated increases in household size – persons losing their housing through foreclosure or having been laid-off from a job still require housing and, thus, will often resort to moving in with family or friends until their economic situation improves. While in the short-term, there will be downward pressure on for-sale housing unit product in the region, rental units (the principal housing type found within transit oriented development) will see strong demand for the foreseeable future.

Figure A-5: Change in Family Household Size: 2000 to 2010

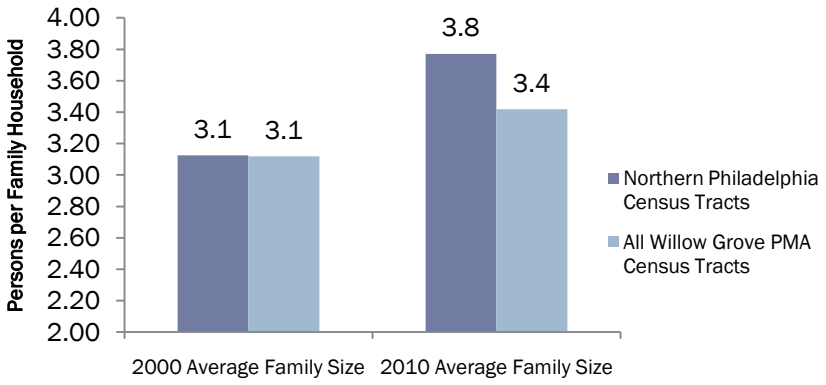
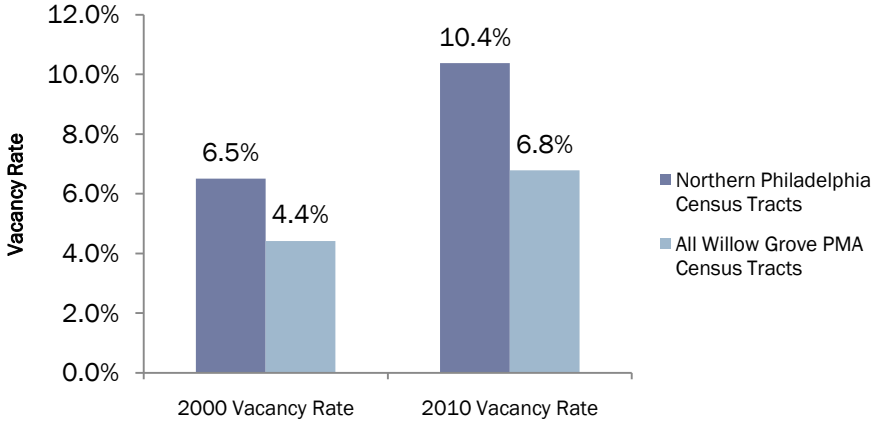


Figure A-6: Change in Housing Unit Vacancy Rate: 2000 to 2010

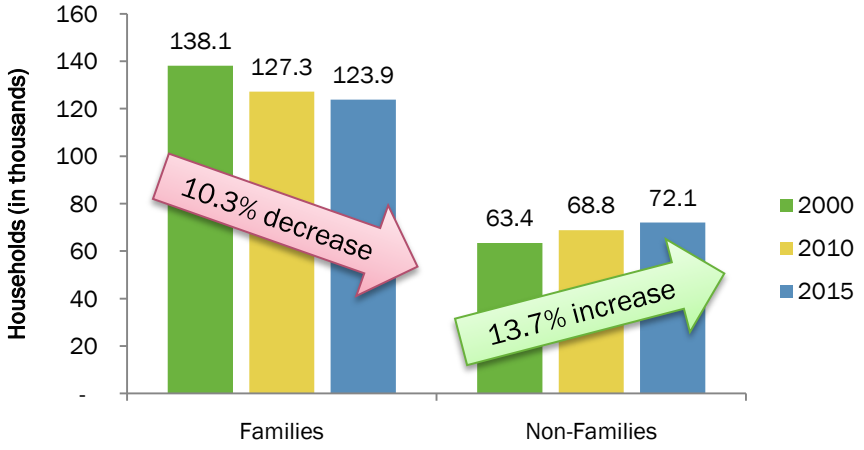


Source: US Census Bureau; ScanUS; 4ward Planning LLC, 2011

Household Type

Related to the consolidation of households, generally, is a decline in the proportion of family households from 2000 to 2010, across all three geographies examined; this is consistent with trends regionally and nationally and owing to declining birth rates and in-migration. By comparison, non-family households (i.e., one-person households or households whose members are unrelated by birth, marriage or adoption) steadily increased – also consistent with broader regional and national trends. Analysis of TOD project areas, nationally, indicate non-family households (covering a range of age groups) are the predominant household type.

Figure A-7: Willow Grove PMA:
Family and Non-Family Households

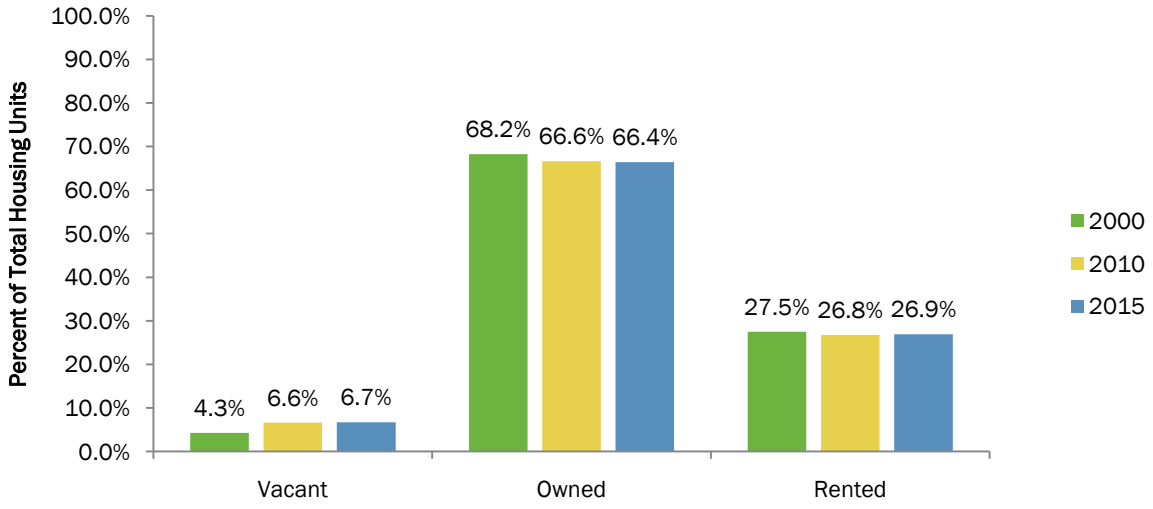


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Housing Tenure and Inventory within the PMA

Housing tenure rates (percentage of housing units owned, rented or vacant) within the Willow Grove PMA were relatively steady over the ten-year period 2000 to 2010. Due to macro economic factors earlier mentioned (declining birth rates and in-migration, and employment and housing loss related to the recession of 2007 to 2009), owner- and renter-occupied housing percentages declined, modestly, from 2000 to 2010, while the percentage of vacant housing units increased more sharply during the same period. Continued economic weakness, combined with demographic trends mentioned above, will likely result in a slightly lower percentage of owner-occupied units and increase in the percentage of renter-occupied units beyond 2015 – **a favorable trend for a prospective TOD project.**

Figure A-8: Willow Grove PMA Housing Tenure by Year

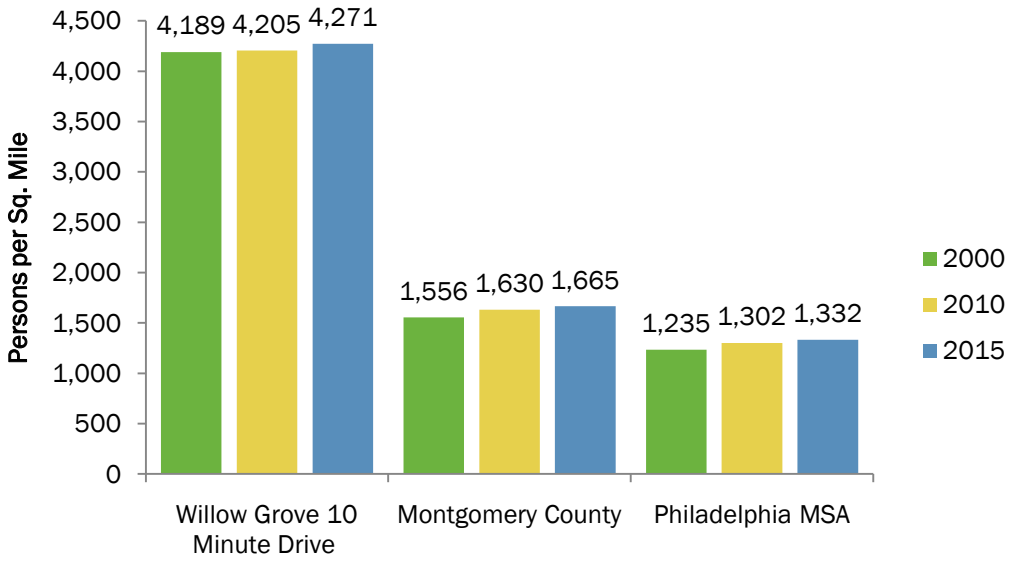


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Population Density

Population density in the Willow Grove PMA exceeds 4,000 persons per square mile, more than double that of Montgomery County and triple that of the Philadelphia MSA. Changes in population density, however, have been more pronounced in Montgomery County and the Philadelphia MSA ,where population density has increased by approximately .5 percent annually between 2000 and 2010. Population increases in the Willow Grove PMA have averaged 0.04% annually, over the same time period.

Figure A-9: Population Density by Geography

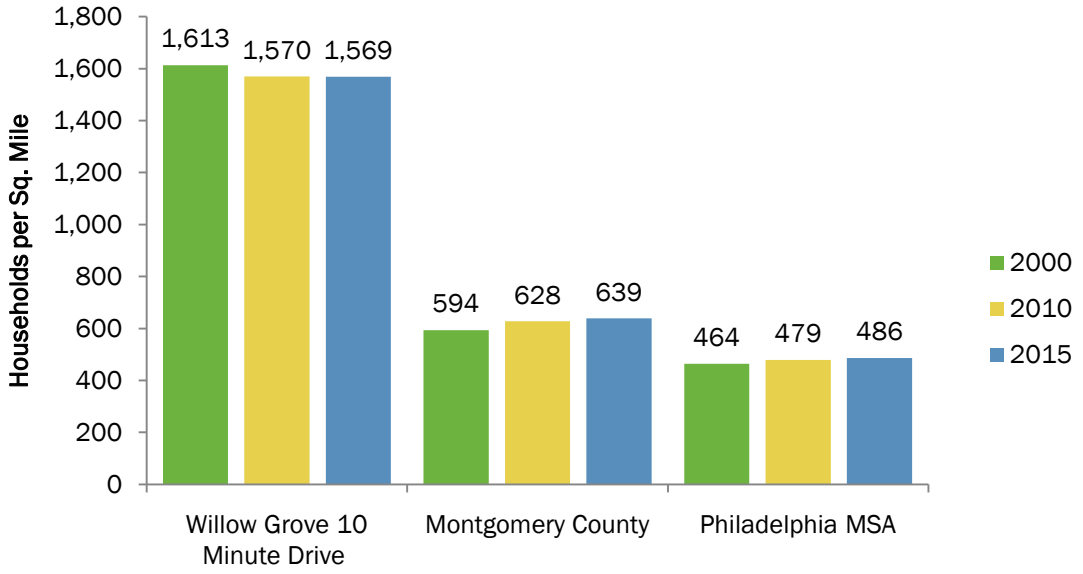


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Household Density

While household density has increased in Montgomery County and the Philadelphia MSA, household density in the Willow Grove PMA has decreased over the 2000-2010 time period, reflecting the trend in population increase and household decrease noted earlier. However, household density in the Willow Grove PMA remains significantly greater than that of Montgomery County or the Philadelphia MSA, with over 1,500 households per square mile.

Figure A-10: Household Density by Geography

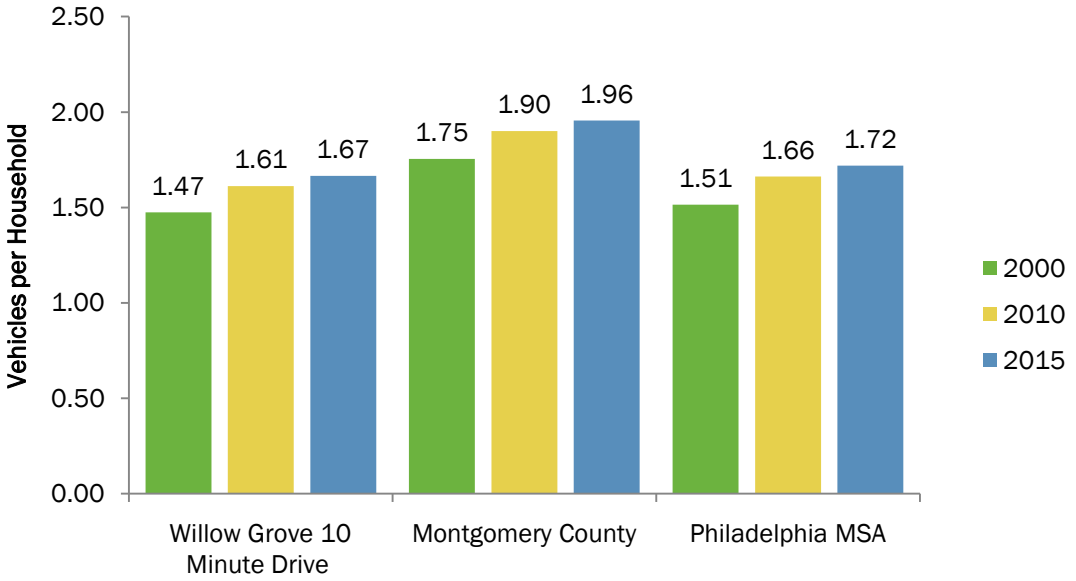


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Automobiles Per Household

Montgomery County households have more automobiles, on average, than households in both the Willow Grove PMA and the Philadelphia MSA. This is expected, given the more urban nature of Willow Grove and the Philadelphia MSA, as compared to the more rural nature of Montgomery County, on the whole.

Figure A-11: Average Vehicles per Household by Geography

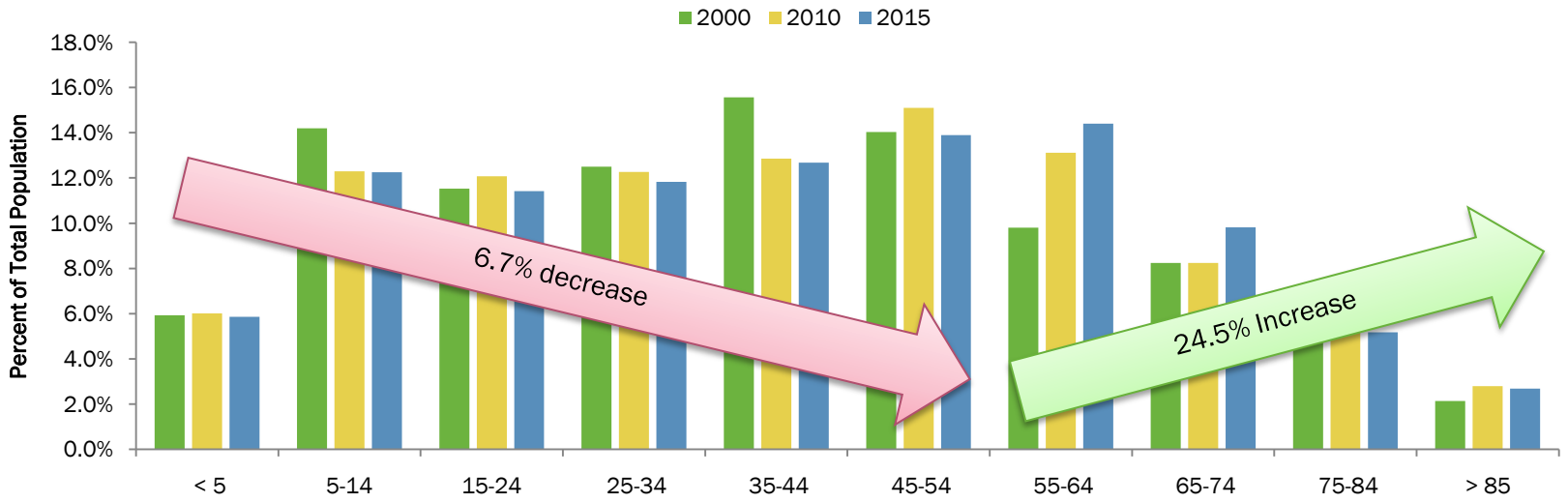


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Population Age within the PMA

Mirroring regional and national trends, all three geographies experienced aging populations from 2000 to 2010. In the Willow Grove PMA, the largest declines among age cohorts were 5 to 14 years (the majority of school-age children) and 35 to 44 years. Conversely, the 55-to-64 and 65-to-74 cohorts saw the highest percentage growth. In the PMA, the under-55 population is projected to decrease by 6.7 percent from 2000 to 2015, while the over-55 population is projected to increase 24.5 percent. Median age within the PMA in 2000 was 41.1 years and is projected to increase to 45.0 years by 2015.

Figure A-12: Willow Grove PMA Age Cohorts by Percentage Share



Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Household Income

The Willow Grove PMA and Philadelphia MSA shared similar household income characteristics in 2000, with median household incomes of approximately $50,000 per year, while Montgomery County's median household income of $61,200 in the same year, is reflective of greater household affluence. All three geographies experienced strong growth in median household incomes from 2000 to 2010 (more than 2 percent annually), a trend that is projected to continue, albeit, at a slower pace through 2015. By 2015, upper income households in the PMA (those earning more than $75,000 per year) are projected to represent four out of every ten households – a 50.4 percent increase over the number of upper income households in 2000.

Figure A-13: Median Household Income by Geography

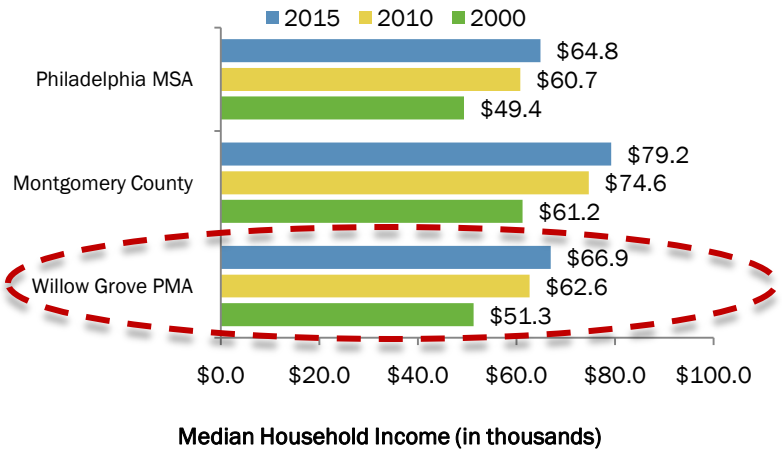
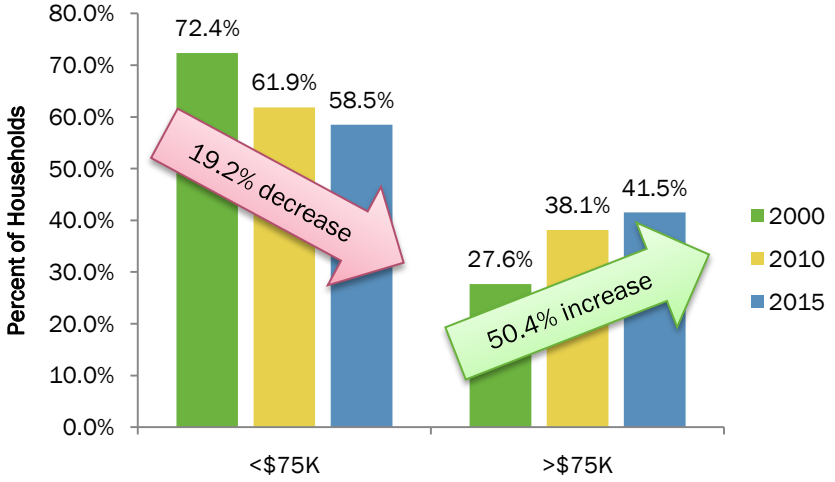


Figure A-14: Willow Grove PMA Household Income by Percentage Share

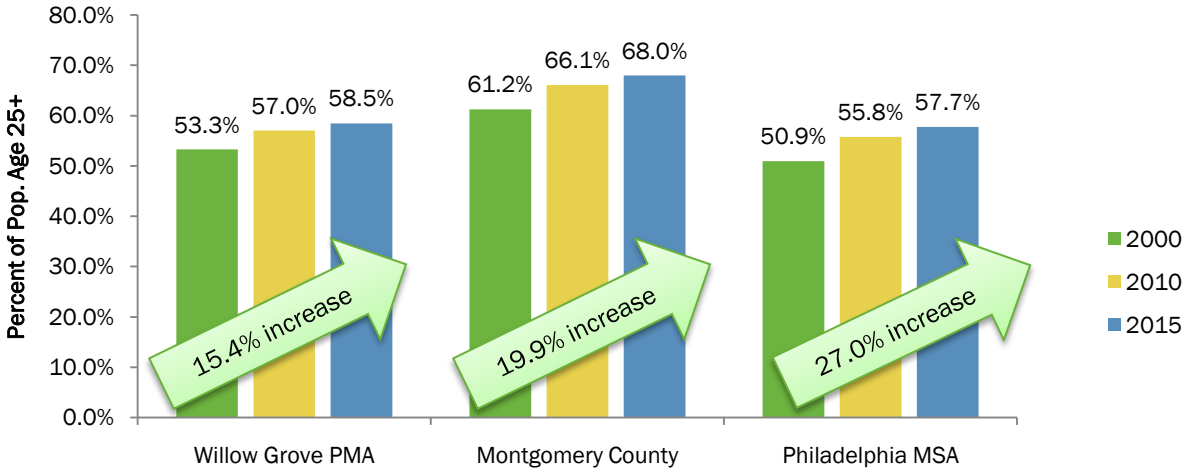


Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Educational Attainment

While the percentage increase in adult persons possessing some college education or greater (e.g., four-year degree or advanced degree), within the Willow Grove PMA has lagged behind the same metric of Montgomery County and the Philadelphia MSA over the past ten years, nearly six in ten adult persons (25-years of age and older) within the PMA are projected to have some formal college training or better by 2015 – a favorable trend for TOD projects as better educated persons are, typically, found in higher concentrations within TOD project areas.

Figure A-15: Adults with Some College Education or Higher by Geography



Source: US Census Bureau, Scan US; 4ward Planning LLC, 2011

Local and Regional TOD Comparisons – 0.5 Miles

Compared to other local and regional suburban TOD projects, the area within a 0.5-mile radius of the Willow Grove transit station is similar to the average of the comparison stations in terms of population, household density, aggregate income, and vehicles available per square mile.

Table 3: Local and Regional TOD Sites, 0.5-Mile Radius, 2010 Density Comparison Report

	Ambler	Burlington	Collingswood	Netcong	Owings Mills (Planned)	Average	Willow Grove
	PA	NJ	NJ	NJ	MD	-	PA
Radial Area (sq miles)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Population/sq mile	5,516	4,749	7,452	2,186	4,642	4,909	4,882
Households/sq mile	2,187	1,942	3,070	843	1,951	1,998	1,903
Vehicles Available/sq mile	3,589	2,651	5,178	1,502	3,636	3,311	3,415
Aggregate income(M)/sq mile	$151.8	$152.5	$241.3	$65.5	$186.9	$159.6	$132.9

Source: US Census Bureau; Scan US; 4ward Planning LLC 2011

Local and Regional TOD Comparisons – 0.5 Miles

Examining the geography defined by 1-, 3-, and 5-mile radii, the Willow Grove area has greater population and household density, aggregate income, and vehicles available per square mile than the the average of the comparison stations, indicating favorable demographic conditions for a TOD project in Willow Grove.

Table 4: Local and Regional TOD Sites, 1-Mile Radius, 2010 Density Comparison Report

	Ambler	Burlington	Collingswood	Netcong	Owings Mills (Planned)	Average	Willow Grove
	PA	NJ	NJ	NJ	MD	-	PA
Radial Area (sq miles)	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Population/sq mile	3,536	2,528	6,535	1,781	3,936	3,663	5,010
Households/sq mile	1,393	1,033	2,915	744	1,612	1,539	1,910
Vehicles Available/sq mile	2,422	1,599	4,778	1,346	3,023	2,634	3,513
Aggregate income(M)/sq mile	$144.5	$76.4	$231.1	$60.9	$149.8	$132.5	$151.5

Source: US Census Bureau; Scan US; 4ward Planning LLC 2011

Local and Regional TOD Comparisons – 3 and 5 Miles

Table 5: Local and Regional TOD Sites, 3-Mile Radius, 2010 Density Comparison Report

	Ambler	Burlington	Collingswood	Netcong	Owings Mills (Planned)	Average	Willow Grove
	PA	NJ	NJ	NJ	MD	-	PA
Radial Area (sq miles)	28.3	28.3	28.3	28.3	28.3	28.3	28.3
Population/sq mile	1,428	2,461	5,412	1,111	2,999	2,682	2,914
Households/sq mile	551	907	2,081	430	1,228	1,039	1,146
Vehicles Available/sq mile	1,083	1,601	3,261	856	2,162	1,793	2,116
Aggregate income(M)/sq mile	$83.1	$68.5	$162.0	$39.4	$111.2	$92.8	$120.4

Source: US Census Bureau; Scan US; 4ward Planning LLC 2011

Table 6: Local and Regional TOD Sites, 5-Mile Radius, 2010 Density Comparison Report

	Ambler	Burlington	Collingswood	Netcong	Owings Mills (Planned)	Average	Willow Grove
	PA	NJ	NJ	NJ	MD	-	PA
Radial Area (sq miles)	78.5	78.5	78.5	78.5	78.5	78.5	78.5
Population/sq mile	1,876	2,155	4,423	977	2,172	2,320	2,955
Households/sq mile	708	796	1,691	365	864	885	1,124
Vehicles Available/sq mile	1,396	1,482	2,583	747	1,526	1,547	2,107
Aggregate income(M)/sq mile	$93.7	$59.9	$134.5	$36.6	$87.1	$82.3	$125.3

Source: US Census Bureau; Scan US; 4ward Planning LLC 2011

Takeaway: Demographic Trends

While population and household formation have either slowed or declined within the Willow Grove PMA over the past ten years—and projections suggest this trend will continue through 2015—there still exists sufficient density within a ten-minute drive of the proposed station area to merit interest from the private development community to pursue TOD project. Comparatively, the Willow Grove PMA has much greater population and household density than both Montgomery County and the Philadelphia MSA, with fewer automobiles per household, indicating that the area is well-suited for a TOD project.

While household size within the PMA showed a slight increase over the past ten years, 4ward Planning believes this phenomenon is due in large measure to household consolidation in light of recent macroeconomic conditions (the recession and housing crisis, specifically). Longer term trends, regionally and nationally, suggests households will continue to contract, contain fewer school age children, and, as a consequence, be less dependent upon automobile travel as the principle mode of transportation. All of these trends can be observed within the Willow Grove PMA and are favorable for a prospective TOD project.

Takeaway: Demographic Trends

The combination of increasing household income, educational attainment, and age are all favorable trends with respect to market viability for the retail and service amenities often found in close proximity to TOD rail stations (e.g., coffee shops, florists, restaurants, boutique clothing and furniture stores).

When compared to other local and regional suburban TOD sites, the Willow Grove area shows similar or greater-than-average population, household density, aggregate income, and vehicles per square mile than comparison sites. This comparatively high level of density indicates that a TOD would be well-suited for the area. Furthermore, development of a TOD project in Willow Grove likely would increase population and household density in the area immediately surrounding Willow Grove while lessening the impacts of development of outlying areas, a strategy consistent with smart-growth practices.

Labor and Industry Trends

Methodology

An Industry and Labor trends analysis was performed using the US Census Bureau's Quarterly Workforce Indicators and its On The Map program, as well as data from the Bureau of Labor Statistics. The analysis was performed on a five-mile radius surrounding the station (approximating a 10-minute drive contour), Montgomery County, and the Philadelphia MSA.

Work area analysis was performed for the most recently available years (2005, 2007, and 2009) and was also projected to 2018, utilizing the U.S. Bureau of Labor Statistics' (BLS) data.

Key Findings

Net 1,700 jobs

Net employment in the Willow Grove five-mile PMA increased by approximately 1,700 jobs between 2005 and 2009, an increase of 2.7 percent – a time period directly concurrent with the length of the Great Recession.

10 percent

Percent of persons who both live and work in the Willow Grove PMA. Over 50 percent of persons working in the Willow Grove PMA commute from outside of the study area.

20/20

Approximately 20 percent of workers living within the study area commute to jobs in Philadelphia. Similarly, approximately 20 percent of persons employed within the Willow Grove study area commute from Philadelphia.

71 percent

Employment in the professional, scientific, and technical services sector grew by a robust 71 percent between 2007 and 2009, in the Willow Grove study area. By comparison, employment in this industry sector remained flat in Montgomery County and the Philadelphia MSA over the same time period.

Total Primary Jobs

Within the Willow Grove PMA, net changes in total primary jobs have closely paralleled those of Montgomery county, increasing substantially between 2005 and 2007, then decreasing over the next two years. In the Willow Grove PMA, net total primary jobs increased from 64,681 to 66,413 between 2005 and 2009, an overall increase of 2.7 percent. Similarly, net employment in Montgomery County increased by approximately 14,000 jobs over the same time period, an overall increase of 3.3 percent. This relatively healthy growth in jobs within the county, generally, and the PMA, specifically, bodes well for prospective TOD land-uses.

Figure B-1: Willow Grove PMA Total Primary Jobs

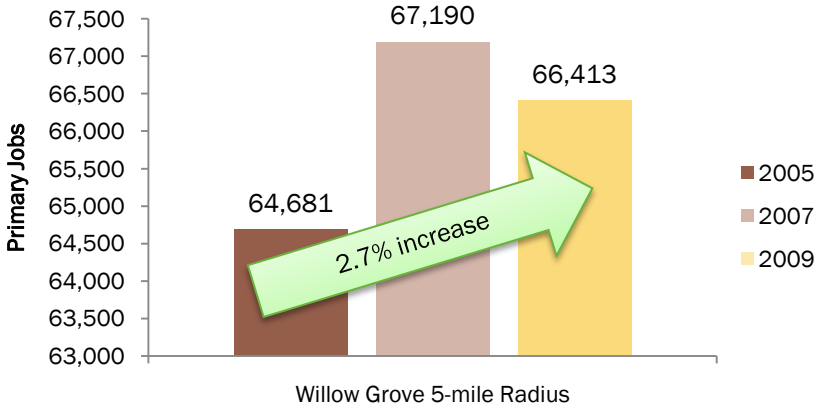
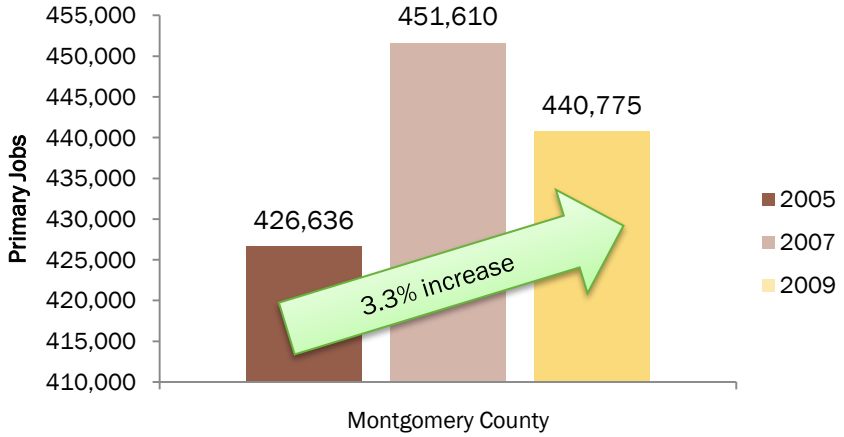


Figure B-2: Montgomery County Total Primary Jobs

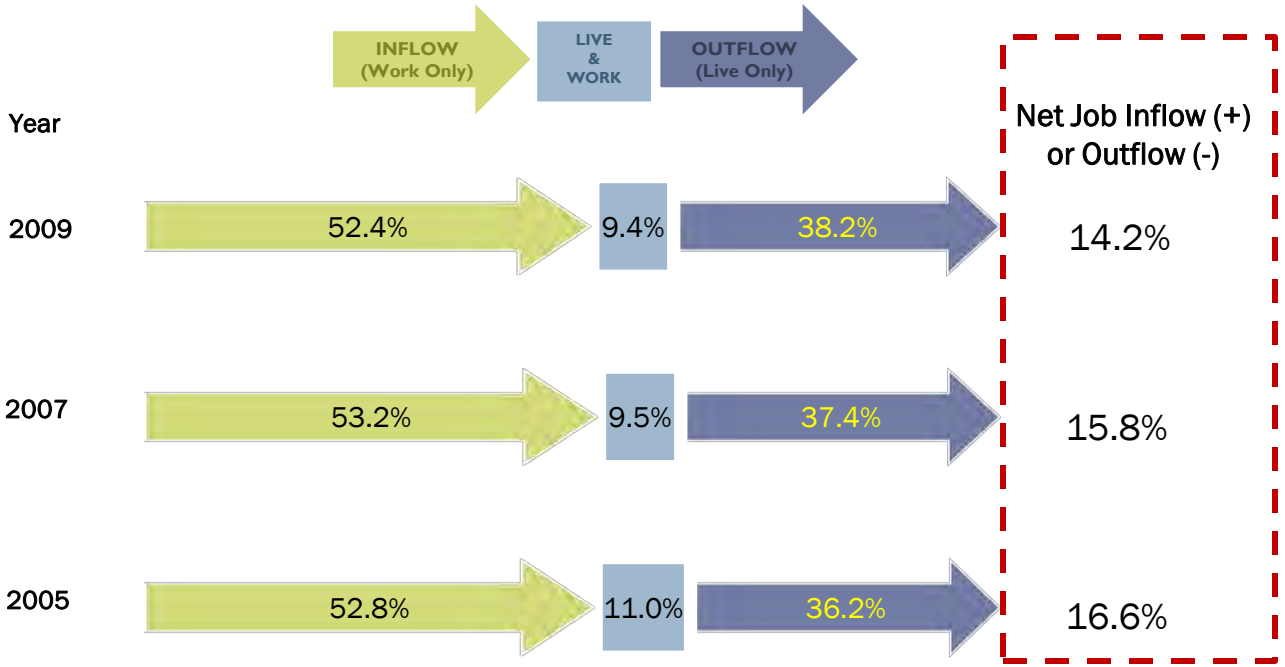


Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Willow Grove Worker Inflow-Outflow

An average of approximately ten percent of workers and residents both live and work within the Willow Grove PMA, with the majority of workers commuting in from outside the study area, creating a net job inflow (more workers, on net, commute into the Willow Grove PMA than persons commuting out of the PMA for work) of over 14 percent in 2009. The relatively large number of persons commuting into the PMA for employment suggests likely pent-up demand for housing.

Figure B-3: Worker Inflow/Outflow by Percent of Total Workers and Residents, Willow Grove PMA



Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Work Destinations

The city of Philadelphia is the primary employment commuting destination for workers living within the study area, capturing more than 20 percent (nearly 11,00 persons) of Willow Grove PMA working persons. Since 2005, an increasing number of Willow Grove PMA workers have commuted to Philadelphia for employment, suggesting a favorable environment for establishing a TOD around the Willow Grove station area.

Table 7: Work Destinations for Residents within Willow Grove PMA

	2005		2007		2009	
Philadelphia city, PA	8,859	18.5%	10,336	20.6%	10,893	21.3%
Horsham CDP, PA	2,429	5.1%	2,270	4.5%	2,210	4.3%
Willow Grove CDP, PA	2,408	5.0%	1,922	3.8%	1,948	3.8%
Fort Washington CDP, PA	953	2.0%	1,052	2.1%	996	1.9%
King of Prussia CDP, PA	622	1.3%	754	1.5%	728	1.4%
Jenkintown borough, PA	909	1.9%	775	1.5%	665	1.3%
Hatboro borough, PA	692	1.4%	599	1.2%	606	1.2%
Blue Bell CDP, PA	488	1.0%	519	1.0%	542	1.1%
Spring House CDP, PA	352	0.7%	371	0.7%	477	0.9%
Plymouth Meeting CDP, PA	403	0.8%	495	1.0%	469	0.9%
All Other Locations	29,759	62.2%	31,125	62.0%	31,596	61.8%

Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Workers by Place of Residence

Philadelphia also serves as the point of origin for the largest single source of workers with jobs located in the Willow Grove PMA – representing just over 20 percent of the PMA area workforce. While the number of these Philadelphia commuters who use the commuter rail line to get to employment within the PMA is beyond the scope of this market study, it is reasonable to assume that those with employers relatively close to the Willow Grove station take advantage of the rail line, if only occasionally.

Table 8: Willow Grove PMA Workers by Place of Residence

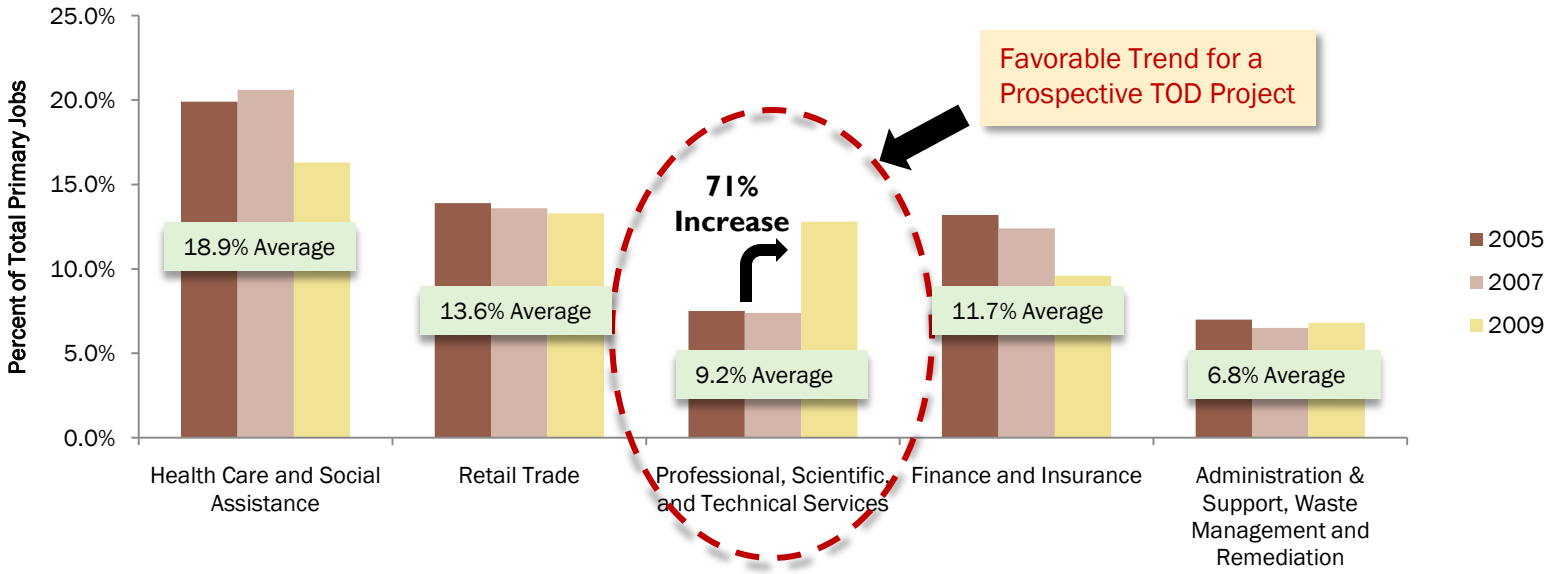
	2005		2007		2009	
Philadelphia city, PA	14,353	22.2%	14,836	22.1%	13,407	20.2%
Willow Grove CDP, PA	2,059	3.2%	1,723	2.6%	1,872	2.8%
Horsham CDP, PA	1,825	2.8%	1,615	2.4%	1,506	2.3%
Levittown CDP, PA	662	1.0%	800	1.2%	852	1.3%
Hatboro borough, PA	912	1.4%	830	1.2%	816	1.2%
Glenside CDP, PA	701	1.1%	616	0.9%	644	1.0%
Maple Glen CDP, PA	541	0.8%	520	0.8%	533	0.8%
Montgomeryville CDP, PA	483	0.7%	450	0.7%	440	0.7%
Norristown borough, PA	387	0.6%	417	0.6%	402	0.6%
Lansdale borough, PA	390	0.6%	384	0.6%	373	0.6%
All Other Locations	42,368	65.5%	44,999	67.0%	45,568	68.6%

Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Top Industries by Employment – Willow Grove PMA

Health care and social assistance is the largest industry by employment within the Willow Grove PMA – as is the case within Montgomery County and the Philadelphia MSA - accounting for 16.3 percent of total employment in 2009 – an 18 percent decline from 2005 employment levels. Employment in the professional, scientific, and technical services sector (comprised of accountants, scientists, attorneys, engineers and consultants, among other high paid professionals) experienced a dramatic 71 percent increase in PMA employment between 2007 and 2009 – white collar professionals represent a prime target group for TOD residential and work options.

Figure B-4: Willow Grove PMA Top Five Industries by Percent of Total Employment

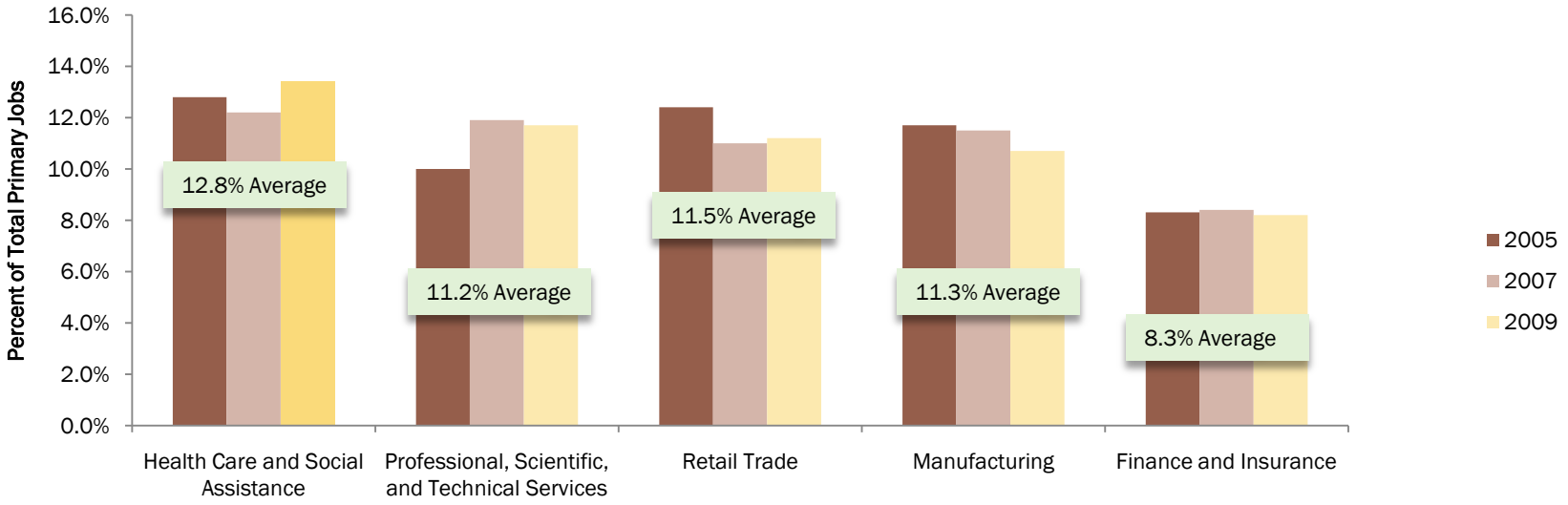


Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Top Industries by Employment – Montgomery County

2009 employment in Montgomery County was fairly evenly distributed among its top five industries, with health care, professional services, and retail trade representing approximately 13, 12 and 11 percent of total employment, respectively, followed by manufacturing (10.7 percent) and finance and insurance (8.2 percent). While the health care and social assistance industry saw modest growth over the 2007 to 2009 period, the professional services industry realize a slight decline during the same period, in sharp contrast to the industry's expansion within the Willow Grove PMA.

Figure B-5: Montgomery County Top Five Industries by Percent of Total Employment

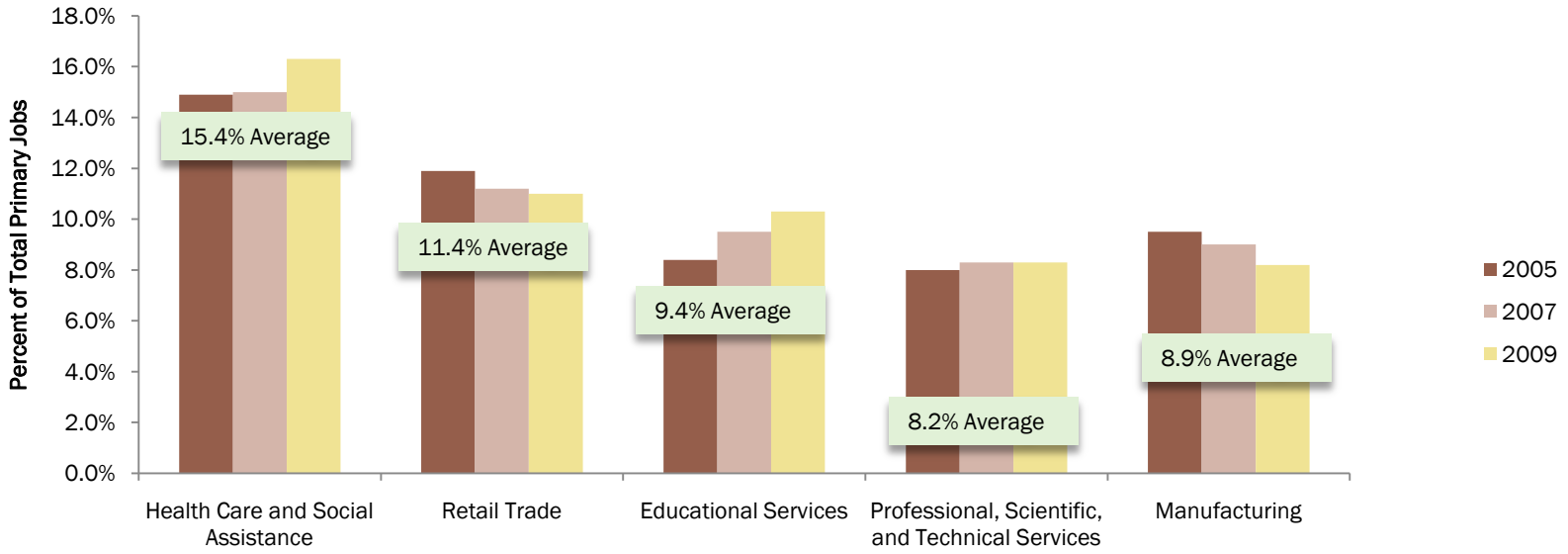


Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Top Industries by Employment – Philadelphia MSA

Top industries in the Philadelphia MSA are similar to those of Montgomery County and Willow Grove, with health care and retail trade comprising nearly 27 percent of total industry employment, on average, over the 2005 to 2009 period. Notably, the four-year average industry employment for the professional services industry sector is a full percentage point below that of the professional services sector in the Willow Grove PMA.

Figure B-6: Philadelphia MSA Top Five Industries by Percent of Total Employment

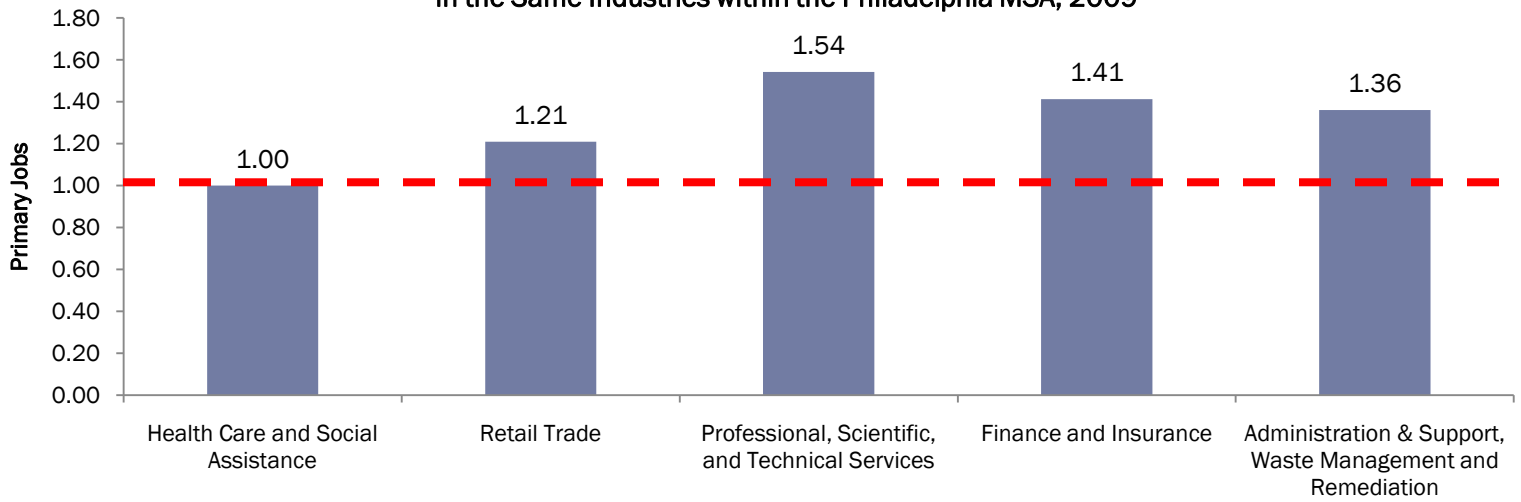


Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Top Industries - Location Quotient Analysis

Location Quotient (LQ) analysis is used to compare the relative concentration of employment in a given industry for a particular geography. A LQ greater than 1.0 indicates a comparative advantage in employment. As the chart below illustrates, there is a significant comparative advantage in several sectors within the Willow Grove PMA compared to the Philadelphia MSA, most notably in professional, scientific, and technical services.

Figure B-7: Willow Grove PMA Top Five Industries by Employment Relative to Employment in the Same Industries within the Philadelphia MSA, 2009



Source: US Census Bureau, OnTheMap; 4ward Planning LLC, 2011

Takeaway: Labor and Industry Trends

Notwithstanding a modest decline in jobs between 2007 and 2009 (corresponding with the Great Recession time period), the Willow Grove PMA experienced net job growth over the 2005 to 2009 period, demonstrating an overall healthy employment market -- which is a key factor in the long-term success of TOD projects.

Given that a relatively large number of workers either commute into Philadelphia from the Willow Grove PMA or commute from Philadelphia into the PMA, establishment of TOD around a commuter line providing service to and from Philadelphia would likely be well received by area residents and workers alike. Further, at least some of the more than 30,000 workers who now commute into the PMA are likely to find housing close-in to mass transit an attractive option, as gasoline prices spiral upward.

The Willow Grove PMA, over the 2005 to 2009 time period, exhibited strong growth within the professional, scientific and technical services industry – signaling that the area has a growing number of workers with relatively high incomes and associated demands for goods and services typically found in and around TOD project sites – coffee houses, salons, boutique retail stores, restaurants and health clubs.

Real Estate Trends:
Residential, Retail, and Office

4WARD PLANNING™

Methodology

To best understand the current health and likely future direction of a housing market, 4ward Planning focuses on the following three key metrics:

Estimated Median House Value

4ward Planning utilizes Zillow.com's proprietary methodology for estimating median housing values within a given market. This methodology, referred to as a "Zestimate," relies upon a combination of county and municipal reported housing transaction data for a given market, and produces a more accurate estimate of median value for all housing than the conventional sales-price approach.

Housing Demand Index Value

The HDIV is derived by dividing the percentage of housing units which increased in value from the previous year by the percentage of housing units which decreased in value over the same period. Healthy housing markets with increasing demand will, typically, exhibit ratio values in excess of one (e.g., a greater percentage of the market's housing units have increased in price as compared to the percentage which have decreased in price over the same time period).

Percentage of Housing Units in Some State of Foreclosure

While housing foreclosure (when homes are in some stage of being repossessed or auctioned off by the lending institution) occurs in most housing markets, it can and does vary significantly. Markets which exhibit a relatively high percentage of housing foreclosure activity or show an upward trend of foreclosure activity over a long period of time indicate some degree of instability or stress, due to larger socio-economic issues.

Methodology

With regard to apartment, retail, and office real estate, 4ward Planning utilized Reis real estate reports, as well as other secondary reports from Colliers, Cushman and Wakefield, and Newman Knight Frank Smith Mack (NKFSM), with a focus on:

Change in Unit or Square Foot Inventory

Indicates, in broad terms, whether new real estate construction has been active in the area.

Year-over-Year Vacancy Rates

Combined with absorption as a percent of occupied stock, this metric signals whether new construction is being bought up and occupied (signaling high demand), or whether it remains vacant (signaling an over-supply of real estate).

Absorption as a Percent of Occupied Stock

Absorption as a percent of occupied inventory reflects the net square footage which has either become occupied (positive absorption) or vacant (negative absorption) during the time period, expressed as a percentage of occupied total unit inventory at the end of the time period.

Effective Monthly or Annual Rent

A measure of the relative value of real estate within the area.

Key Findings

Less than 1.0

The housing demand index value in Willow Grove has been 1.0 or less since year-end 2008, indicating that more homes are decreasing in value than are increasing. Though still less than 1.0, the HDIV in year-end February 2011 was at it highest point (0.7) since 2007.

Demand for Multi-family Units is Up

Identified market trends within Montgomery County suggest there is growing demand for multi-family rental units over the coming years – a percentage of which could easily be captured by a Willow Grove TOD project.

Flat Office Demand Factors

Over the next eight to ten years, office demand factors (e.g., industry workers typically associated with office using space) are projected to be flat or declining. This trend, however, in and of itself, does not suggest that no new office space could be generated around a prospective TOD location.

Slightly more than 23,000 units

Based on modest population growth, pent-up housing demand from commuting workers and the need to replace physically obsolescent housing units, the Willow Grove Market area has an estimated demand for more than 23,000 housing units over the next five years. A small percentage of these units could be developed within a half-mile of a prospective Willow Grove TOD project.

Residential Real Estate Study Area

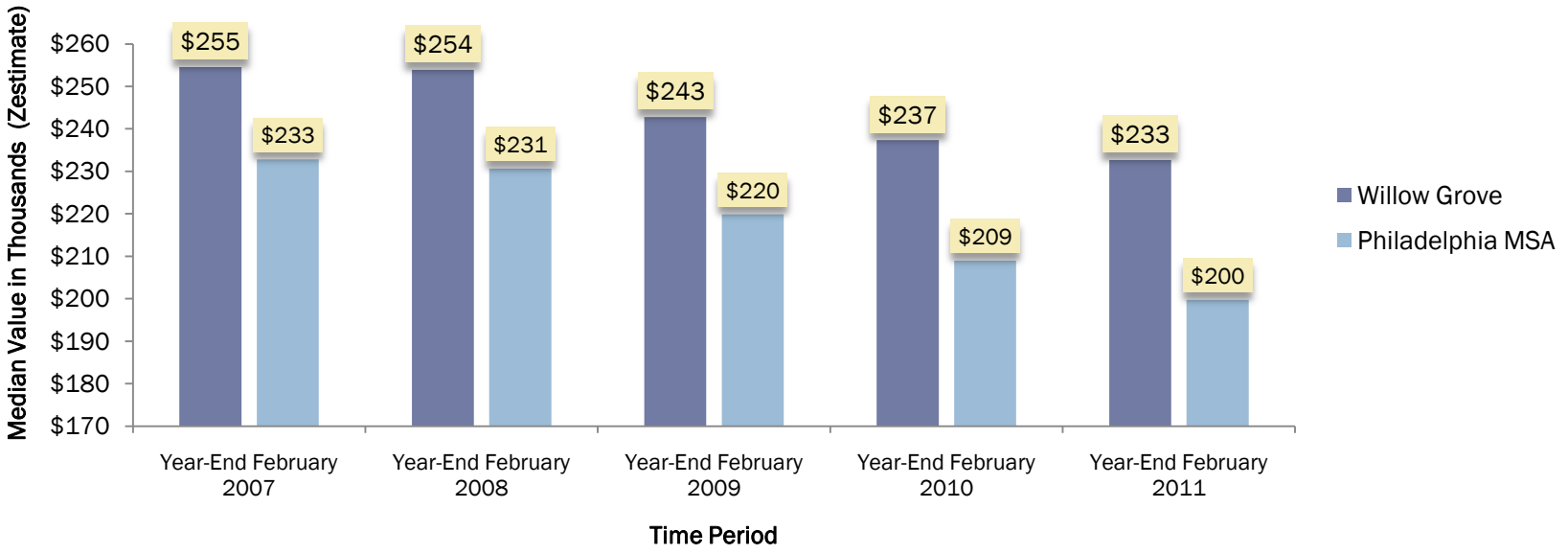
Willow Grove Housing Study Area

Source: Google Maps; 4ward Planning LLC 2011

Median House Value

Zillow.com's "Zestimate" demonstrates that the median house value in Willow Grove is approximately $25,000 greater than that of the Philadelphia MSA, and has followed a similar declining value pattern over the last five years. However, over the past four years, the median house value in Willow grove has decreased less (8.6 percent over the 2007 to 2011 first quarter periods) than the median house value in the Philadelphia MSA over the same four-year period (14.2 percent)

Figure C-1: Median Home Values (In Thousands)

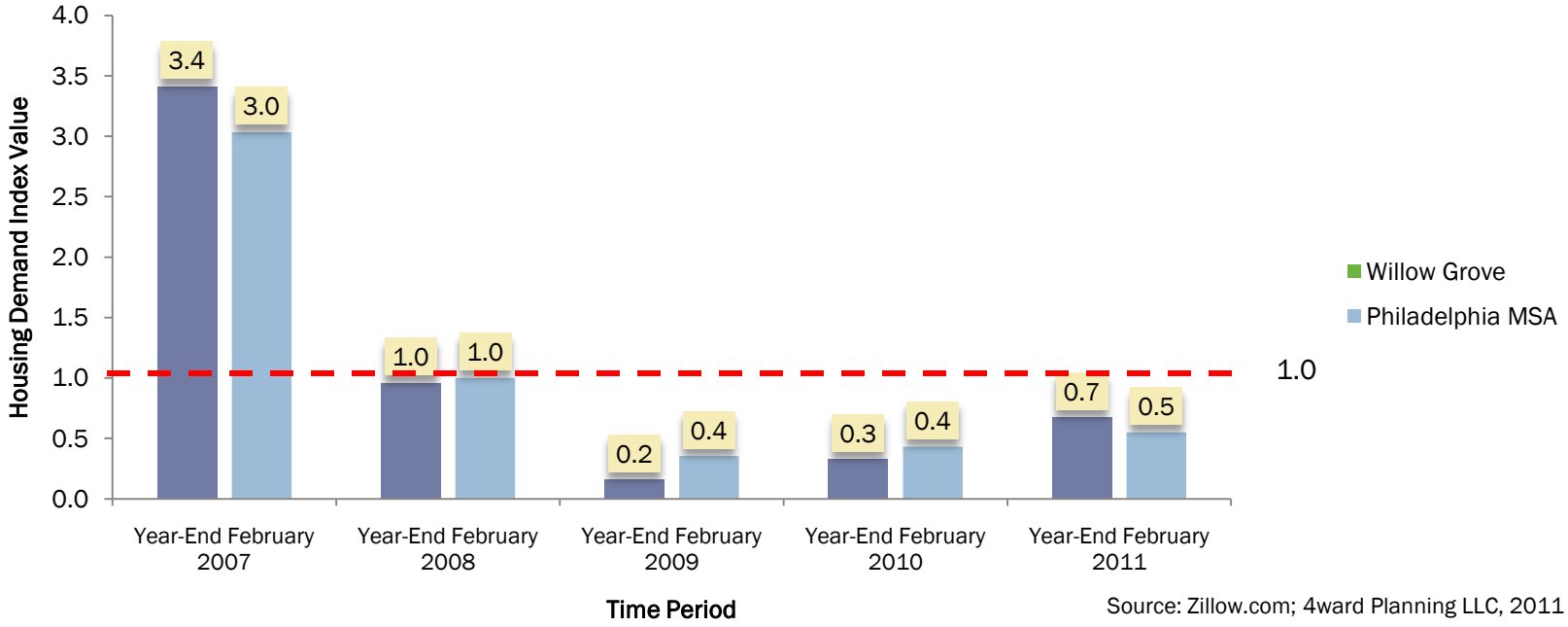


Source: Zillow.com; 4ward Planning LLC, 2011

Housing Demand Index Value

Within Willow Grove and the Philadelphia MSA, the Housing Demand Index Value (HDIV) has decreased dramatically over the March 2007 - February 2011 time period, transitioning below 1.0 in 2008 (the point where half of homes are increasing in value and half are decreasing in value). Between 2008 and 2011, the HDVI for both Willow Grove and the Philadelphia MSA increased, but still remained below 1.0, indicating that more homes are decreasing in value than are increasing.

Figure C-2: Housing Demand Index Value



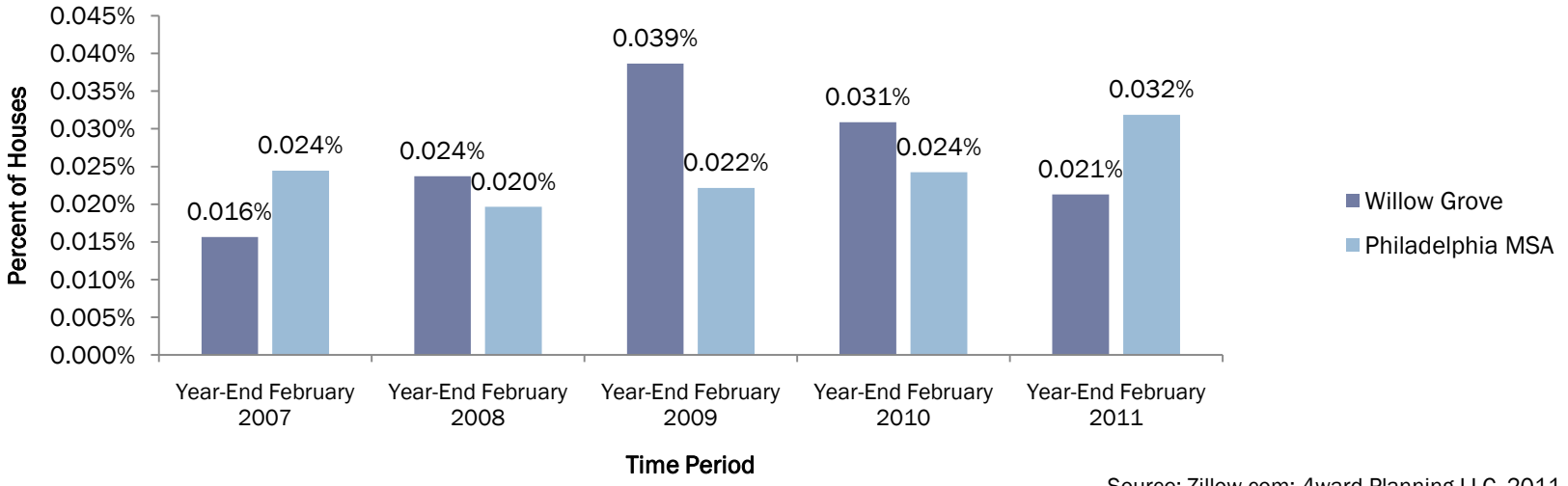
Source: Zillow.com; 4ward Planning LLC, 2011

Foreclosures

Less than one-tenth of one percent of households entered into foreclosure, annually over the 2007-2011 time period, in both Willow Grove and the Philadelphia MSA – a favorable housing market indicator when contrasted with national foreclosure rates over the same period.

While foreclosures increased in Willow Grove between 2007 and 2009, they have trended downward since, as contrasted against foreclosure activity within the Philadelphia MSA over the past two years.

Figure C-3: Percent of Houses in Foreclosure



Source: Zillow.com; 4ward Planning LLC, 2011

Apartment Real Estate Study Area

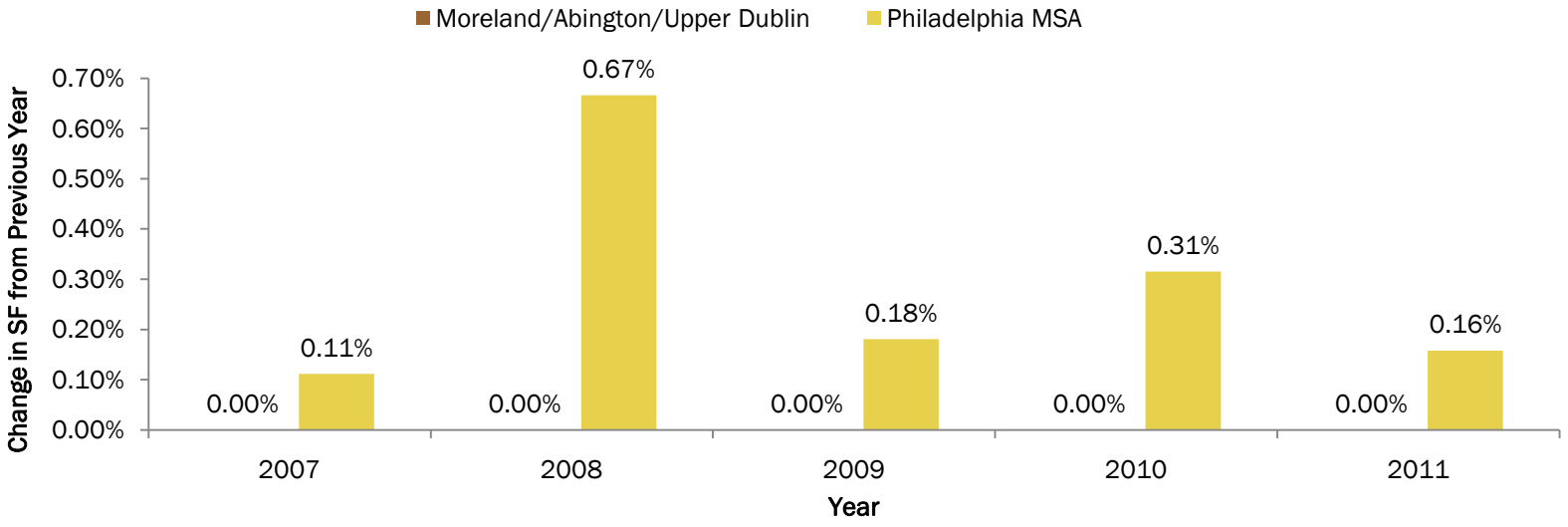
Apartment Submarket: Moreland/Abington/Upper Dublin

Source: Reis; Bing Maps; 4ward Planning LLC 2011

Apartment Inventory

According to REIS, the apartment inventory within the Moreland/Abington/Upper Dublin submarket (the multi-family residential submarket that includes Willow Grove) has remained steady at 8,933 units since 2007, while apartment inventory in the Philadelphia MSA has been slowly increasing.

Figure C-4: Apartment Inventory Change from Previous Year



Total Units:	2007	2008	2009	2010	2011
Moreland/ Abington/Upper Dublin	8,933	8,933	8,933	8,933	8,933
Philadelphia MSA	198,635	199,958	200,320	200,951	201,268

Source: Reis; 4ward Planning LLC 2011

Apartment Vacancy Rates and Absorption

Year-over-year vacancy rates spiked in the Willow Grove area in 2008 and 2009 at 8.0 and 7.4 percent, respectively; the Philadelphia MSA also saw a rise in vacancies, though to a lesser degree. Since 2009, however, vacancy rates have trended downward in both markets to below 5 percent in 2011. This serves as an indicator for increasing unit demand – a favorable trend for a prospective TOD project.

Figure C-5: Apartment Year-over-Year Vacancy Rate

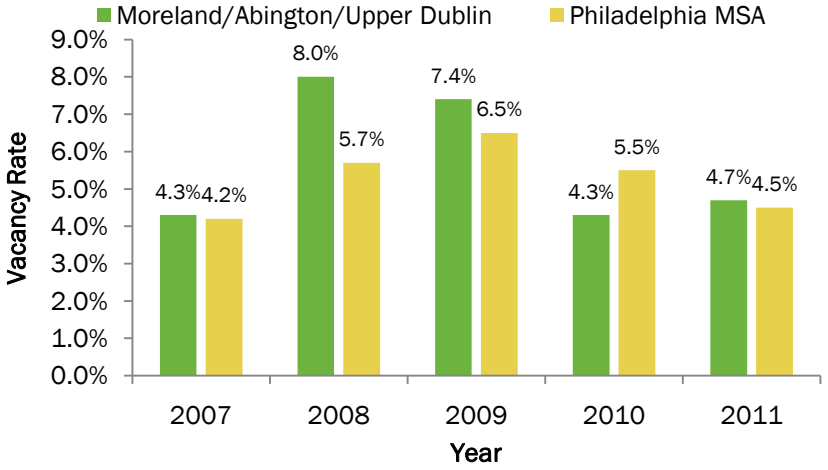
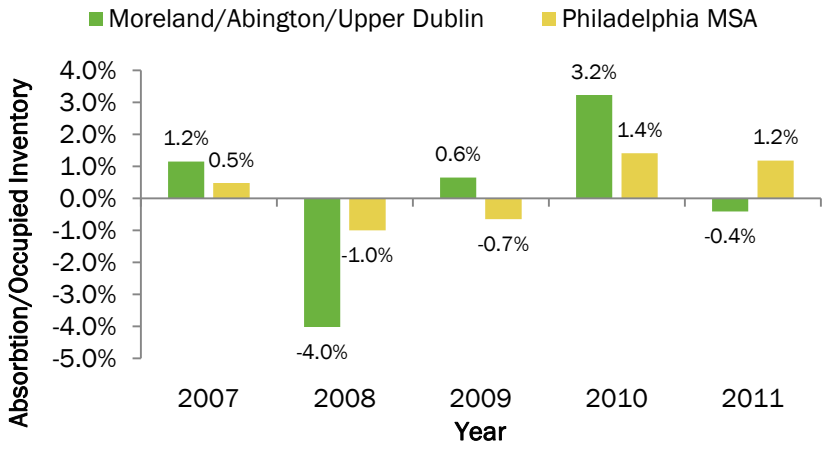


Figure C-6: Apartment Absorption as Percent of Occupied Units

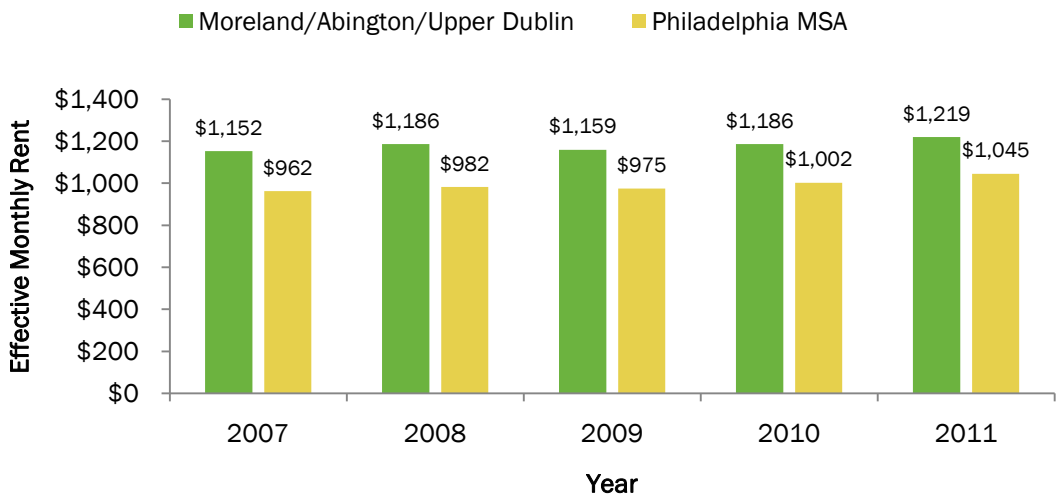


Source: Reis; 4ward Planning LLC 2011

Apartment Effective Monthly Rent

Effective monthly rents within the Willow Grove apartment submarket have remained roughly $150 higher than in the MSA from 2007 to 2011. Both markets saw growth in effective monthly rents from 2007 to 2008, a slight decline to 2009, and again growth from 2009 to 2011. Overall, effective monthly rent in the Willow Grove submarket experienced a net growth of 5.6 percent between 2007 and 2011 (a $67 per month increase), with the strongest rental growth (1.7 percent per annum) taking place between 2009 and 2011, according to REIS. Consistent with low vacancy rates, rising rental pressure is a market signal for increasing demand for new rental units.

Figure C-7: Apartment Effective Monthly Rent



Source: Reis; 4ward Planning LLC 2011

Neighborhood Retail Real Estate Study Area

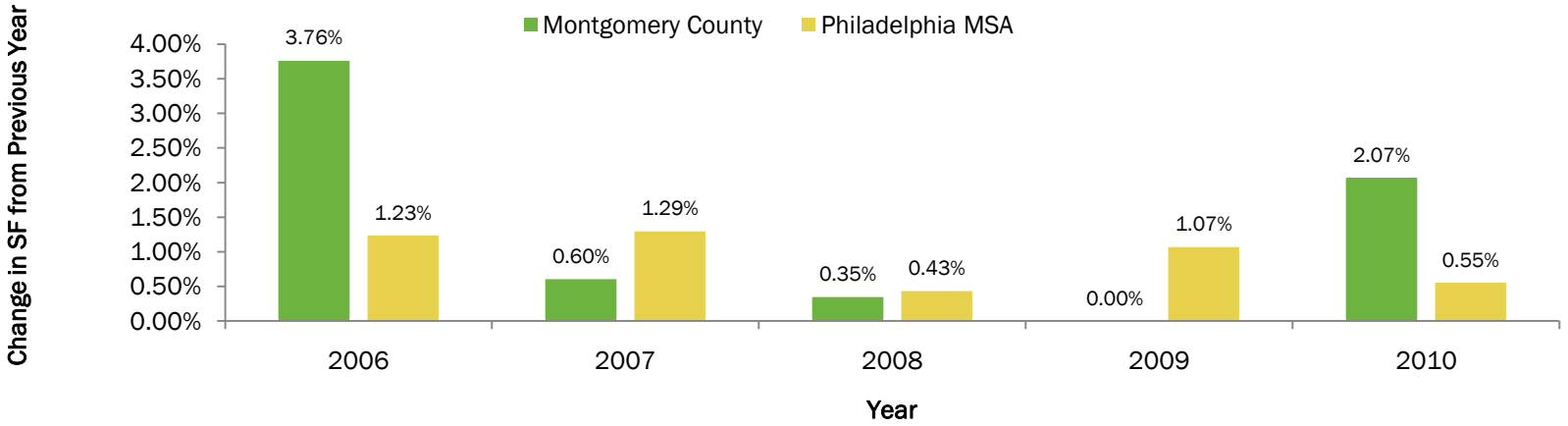
Neighborhood Retail Submarket: Montgomery County

Source: Reis; Bing Maps; 4ward Planning LLC 2011

Neighborhood Retail Inventory

Total neighborhood retail inventory within the Montgomery County retail submarket increased slightly from 4.3 million square feet in 2006 to 4.4 million square feet in 2010 (no inventory estimates for 2011 are yet available), a net 3 percent increase. In Montgomery County, growth was strongest from 2005 to 2006 (3.76 percent, slowed though 2009, and grew more strongly again from 2009 to 2010 (2.07%), when 90,000 square feet of new retail space came on-line. The MSA, conversely, has seen slower growth in neighborhood retail square footage from 2005 to 2010.

Figure C-8 : Neighborhood Retail Inventory Change from Previous Year



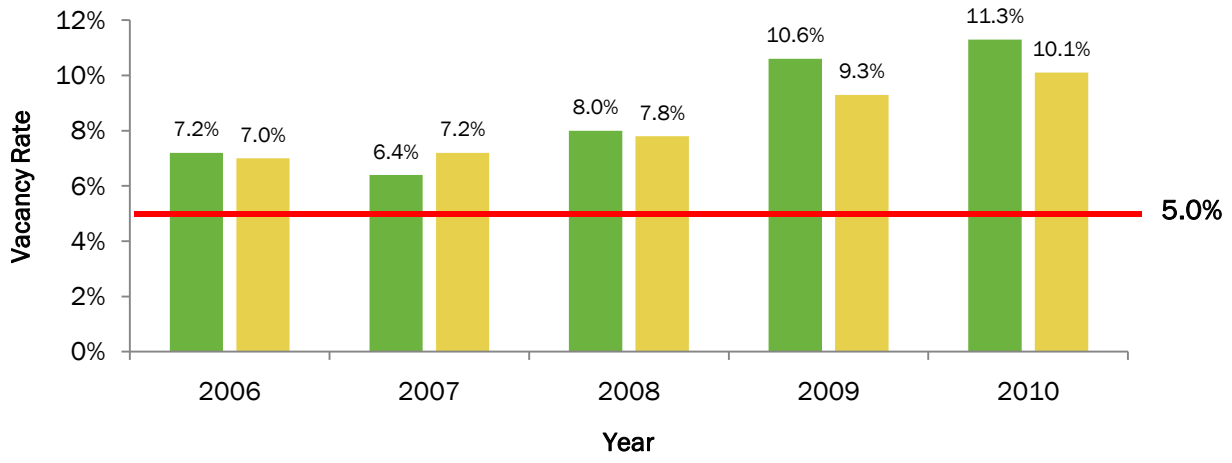
Total SF:		2006	2007	2008	2009	2010
	Montgomery County	4,307,000	4,333,000	4,348,000	4,348,000	4,438,000
	Philadelphia MSA	26,648,000	26,993,000	27,110,000	27,400,000	27,552,000

Source: Reis; 4ward Planning LLC 2011

Neighborhood Retail Vacancy Rates

Retail vacancy rates within the Montgomery County and Philadelphia MSA retail markets have remained relatively high (above 5.0%) for the last five years. Increases in vacancy rates between 2008 and 2010 correspond to an increase of approximately 105,000 square feet of retail space in the submarket, respectively. Colliers notes a similar vacancy rate for 2010 Q4, of 9.4 percent for neighborhood retail centers in Philadelphia and suburbs. This demonstrates a lag between the construction of new retail space and its absorption within these markets.

Figure C-9: Neighborhood Retail Year-over-Year Vacancy Rates



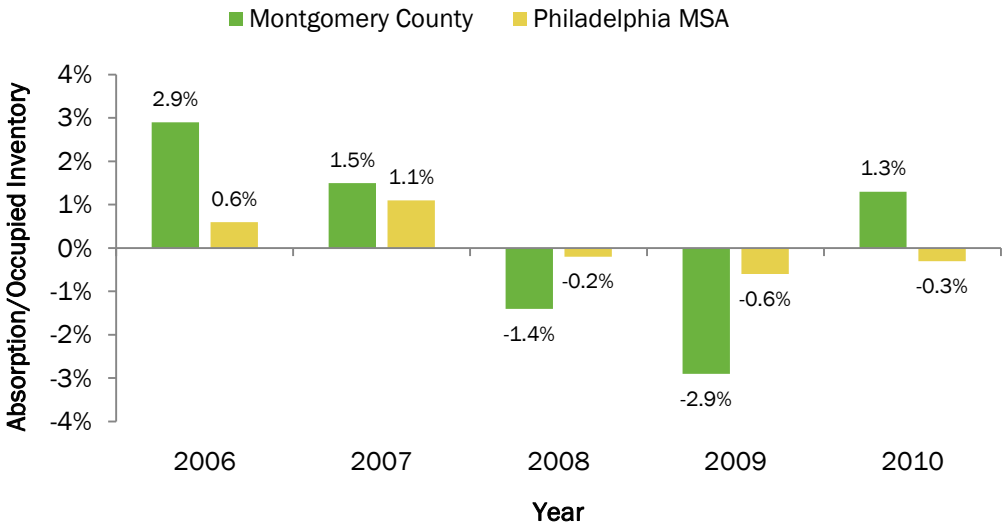
Source: REIS; 4ward Planning LLC, 2011

Source: Reis; 4ward Planning LLC 2011

Neighborhood Retail Absorption

The Montgomery County market's absorption to occupied inventory percentage ratio, though positive in 2006 (2.9 percent) and 2007 (1.5 percent), declined as approximately 15,000 square feet came on-line in 2008, but rose again to a positive 1.3 percent in 2010, as 90,000 square feet entered the submarket.

Figure C-10: Neighborhood Retail Absorption as Percent of Occupied Units

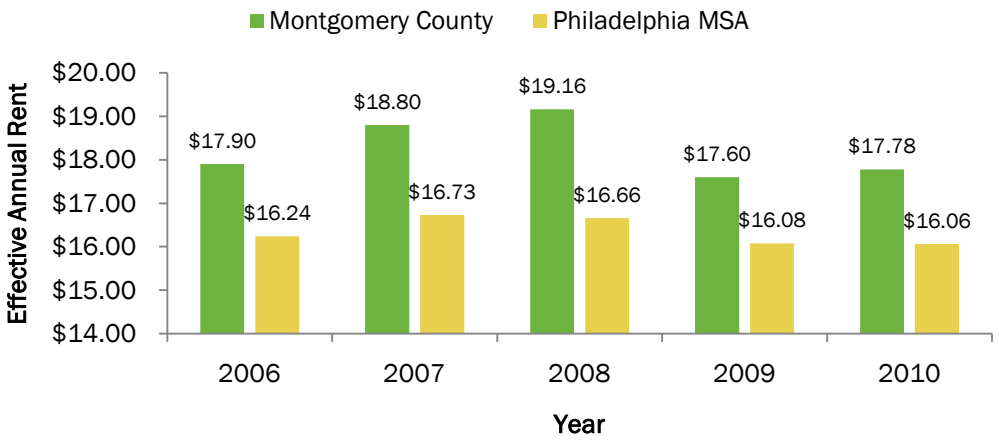


Source: Reis; 4ward Planning LLC 2011

Neighborhood Retail Effective Annual Rent

A sharp decrease in effective annual rent within Montgomery County—from a five-year high of 19.16 per square foot in 2008 to a five-year low of 17.60 in 2009—is a result of a softening real estate market during the recession. This drop indicates efforts by developers to attract retail tenants to newly-constructed neighborhood retail locations or retain existing retailers in older locations by offering incentives to entice retailers to remain. Changes in effective annual rents in the MSA were more moderate between 2006 and 2010; in 2010, they remained nearly $1.75 lower per square foot than in Montgomery County.

Figure C-11: Neighborhood Retail Effective Annual Rent Per SF



Source: Reis; 4ward Planning LLC 2011

Office Real Estate Study Area

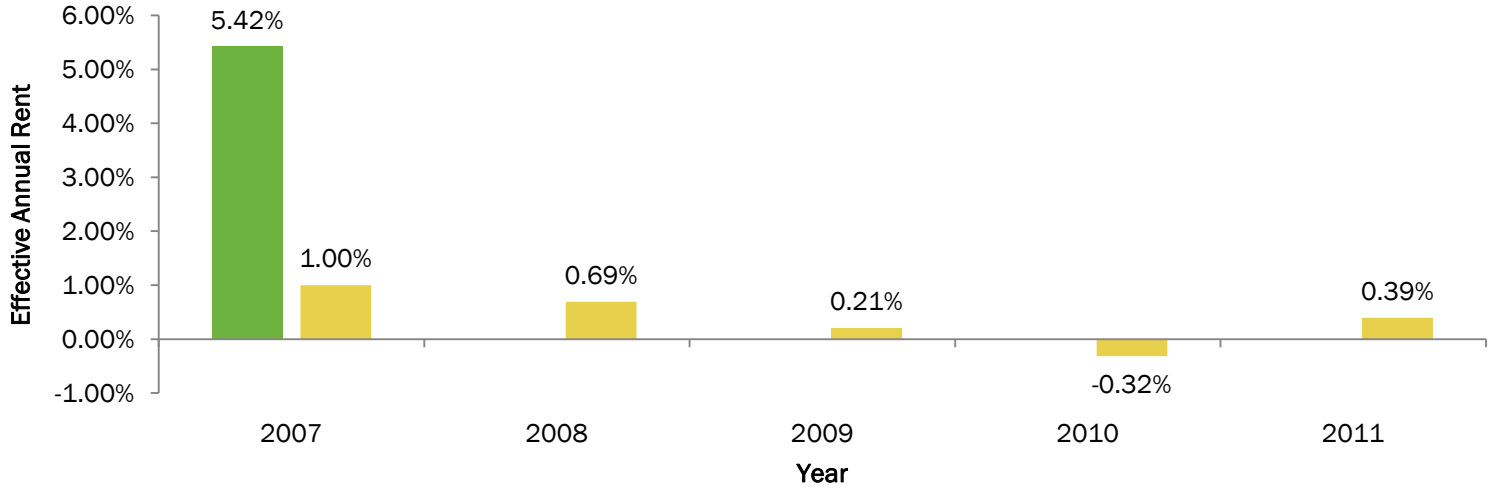
Office Submarket: Jenkintown

Source: Reis; Bing Maps; 4ward Planning LLC 2011

Office Inventory

The Jenkintown Office Real Estate Submarket saw an increase of 95,000 square feet of office space in 2007, though no new construction has come on-line in following years. Square footage inventory in the Philadelphia MSA decreased dipped to a slightly negative -0.32% from 2009-2010, but is projected to increase again in year 2011.

Figure C-12: Office Inventory Change from Previous Year



Total SF:	Jenkintown	1,847,000	1,847,000	1,847,000	1,847,000	1,847,000
	Philadelphia MSA	110,395,000	111,158,000	111,388,000	111,035,000	111,473,000

Source: Reis; 4ward Planning LLC 2011

Office Vacancy Rates and Absorption

The construction of new office space in the Jenkintown submarket coincides with a 2007 vacancy rate of 6.9 percent and an absorption as percent of occupied inventory rate of a high 9.0 percent. This new construction has been slow to absorb, generating vacancy rates of between 15 and 18 percent, as reported by Newman Knight Frank Smith Mack (NKFSM), Cushman and Wakefield, and Colliers, while absorption as percent of occupied inventory rates in the Jenkintown submarket remained slightly below zero. Similar figures in the Philadelphia MSA indicate these office markets are overbuilt and are not likely to need additional office space for several more years.

Figure C-13: Office Year-over-Year Vacancy Rates

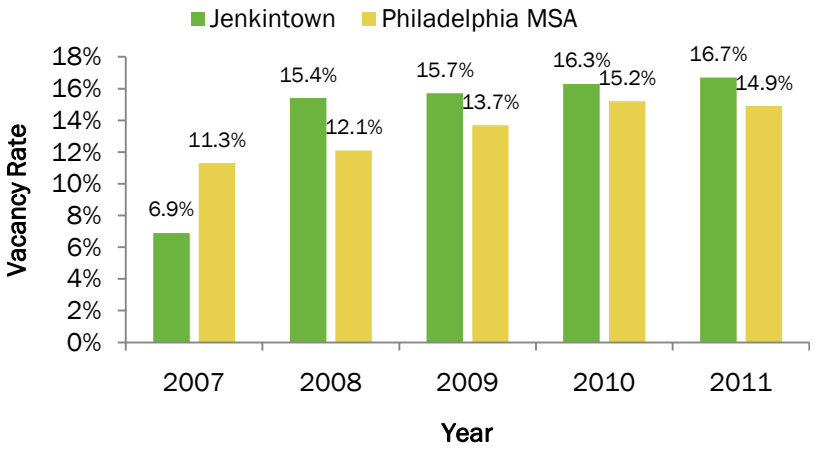
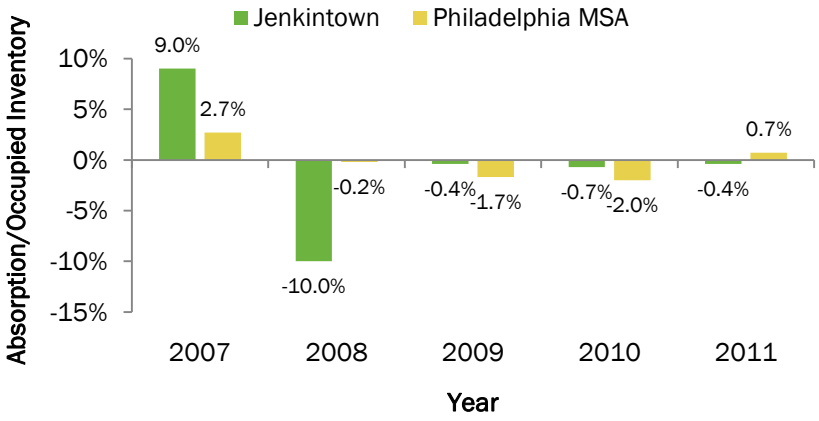


Figure C-14: Office Absorption as Percent of Occupied Inventory

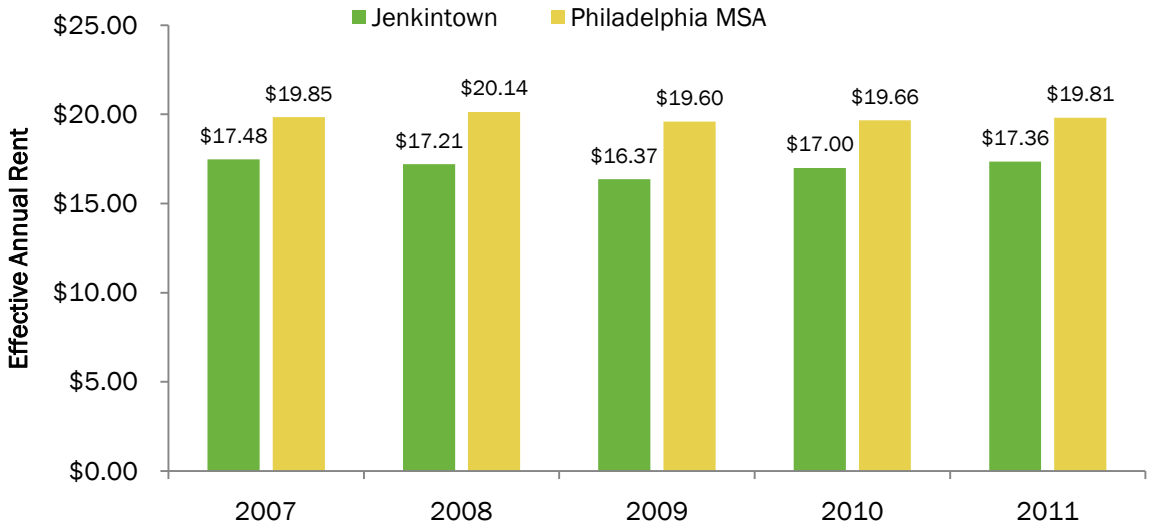


Source: REIS; 4ward Planning LLC, 2011

Office Effective Annual Rent – Jenkintown Sub-Market

Office real estate effective annual rent has decreased by approximately $1.00 per square foot between 2008 and 2009, then rebounded in 2010 and is estimated to increase again in 2011, approaching the 2007 high of $17.48 per square foot. NKFSM gives an asking rental rate of $18.59 for 2010 Q4. Rents in Jenkintown are less than average for the Philadelphia MSA, which is unsurprising give the amount of high value office real estate in the city of Philadelphia. *However, lower office rent rates, combined with improved mass transit options, would increase the attractiveness of a TOD office project.*

Figure C-15: Office Effective Annual Rent



Source: REIS; 4ward Planning LLC, 2011

Residential
Supply-Demand Analysis

4WARD PLANNING™

Methodology - Key Steps for Deriving Residential Demand

Selection of Population and Household Growth Scenario

4ward Planning examined two different growth scenarios: a modest-growth population and household trend through 2015 (0.75 % growth per annum) and a flat growth scenario (0.0%), based on the socio-economic analysis performed earlier. While population and household growth trends could increase at a robust pace through 2015, absent a large influx of large employers to the area, such a trend is not likely.

Estimation and subtraction of physically obsolescent housing units in the market area

Housing units, like most things, wear out over time. Dependent upon the age of local housing stock and the manner of care applied to it, generally, the annual housing obsolescence rate can range from 0.5 percent annually (solidly built homes that are well cared for) to as high as 2 percent annually (older housing stock which has seen little preventative maintenance over the years). Based on conditions observed and data analyzed for the local Willow Grove housing market, 4ward Planning utilized a 0.75 percent annual obsolescence rate for its analysis.

Estimation of pent-up housing demand by PMA workers currently living outside of the PMA

Typically, some percentage of workers who commute to places of employment a considerable distance from their homes desire living arrangements closer to their place of employment. For reasons of inadequate housing stock (type, price, location, etc.) currently near their place of employment, these workers do not enter the local housing market and, therefore, are said to represent pent-up demand for local housing. While short of surveying area workers who commute from outside the housing area about their desire to live locally, there is not a precise method for estimating pent-up housing demand among local workers. However, 4ward Planning believes that 5 out of every 100 workers is a conservative estimate for the pent-up demand which likely exists in a market, all other things being equal. Accordingly, we have assumed that five-percent of the identified in-commuting workers to the Willow Grove PMA represent pent-up demand.

Key Steps for Deriving Residential Demand

Estimation of demand for owner-occupied versus renter-occupied units

Analysis and projection of demand for owner- versus renter-occupied housing units is based on a number of factors within a given market area. These include:

- Current ratio of owner-occupied to renter-occupied units;
- Household income levels and trends;
- Household type (e.g., family versus non-family households) and trends;
- Population age trends
- Current and forecasted financial conditions (employment outlook, mortgage rates, ease of mortgage qualification, etc.)

All of the above factors pertaining to the Willow Grove market area were taken into consideration for this analysis.

Estimation of demand for one-, two- and three-bedroom unit types

The estimation of one-, two- and three-bedroom units as a percentage of all housing units, whether the housing type is for-sale or for-rent, involves many of the same factors identified under the estimation of demand for owner-occupied versus renter-occupied units, as well as examination of current market trends for various bedroom unit mixes.

Estimation of the natural vacancy rate

A housing market's natural vacancy rate is a function of such factors as whether or not the area is a seasonal tourist destination (higher vacancy rates during that part of the year considered off season) or whether the area is well established and desirable (typically associated with relatively low vacancy rates). Every housing market has some degree of vacancy, as households are constantly in motion. Nationally and regionally, stable and generally well maintained housing markets exhibit vacancy rates ranging from three-percent to six-percent.

Key Steps for Deriving Residential Demand

Interviews to estimate projects in the pipeline

4ward Planning worked with the Montgomery County Planning Department to review proposed projects, approved projects, and projects currently under construction in the Willow Grove region. The Planning Department reported observing a substantial decrease in residential project proposals over the last several years, consistent with national trends in decreased housing projects following the financial crisis.

Based on the Planning Department's estimates for the likelihood of project approvals and building completions, an estimated total of approximately 370 new units likely to be built in the Willow Grove market area over the next five years. This is in addition to 159 units recently completed and 192 units currently under construction – none of which located within a half-mile of the Willow Grove station area.

Likely near-term construction by area:

Upper Moreland: 51 units

Lower Moreland: 0 units near-term

Abington: 98 units

Hatboro: 159 units recently built, 55 additional units likely

Horsham: 94 units

Upper Dublin: 192 units under construction, 73 additional units likely

Jenkintown: 0 units near-term

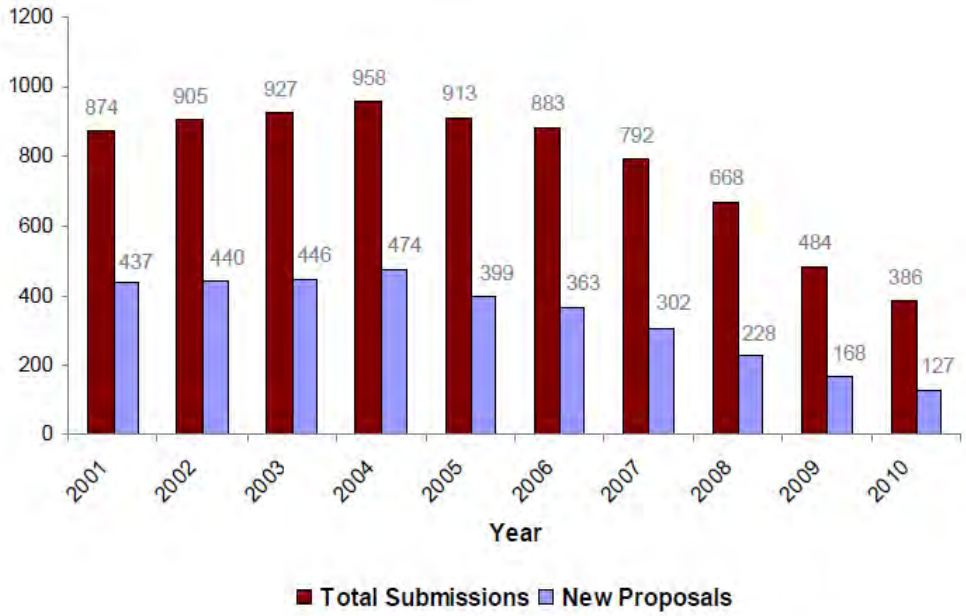
Rockledge: 0 units near-term

Pipeline Project Review

Real estate projects in Montgomery County have decreased markedly over the last several years, as noted in the 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania ("2010 Summary")

"The total number of submissions has decreased each of the last six years, dropping 60% from 2004 to 2010. This is the lowest it has been since at least 1970, when comparable county records began being recorded."

Figure D-1: Total Annual Submissions, 2001 to 2010

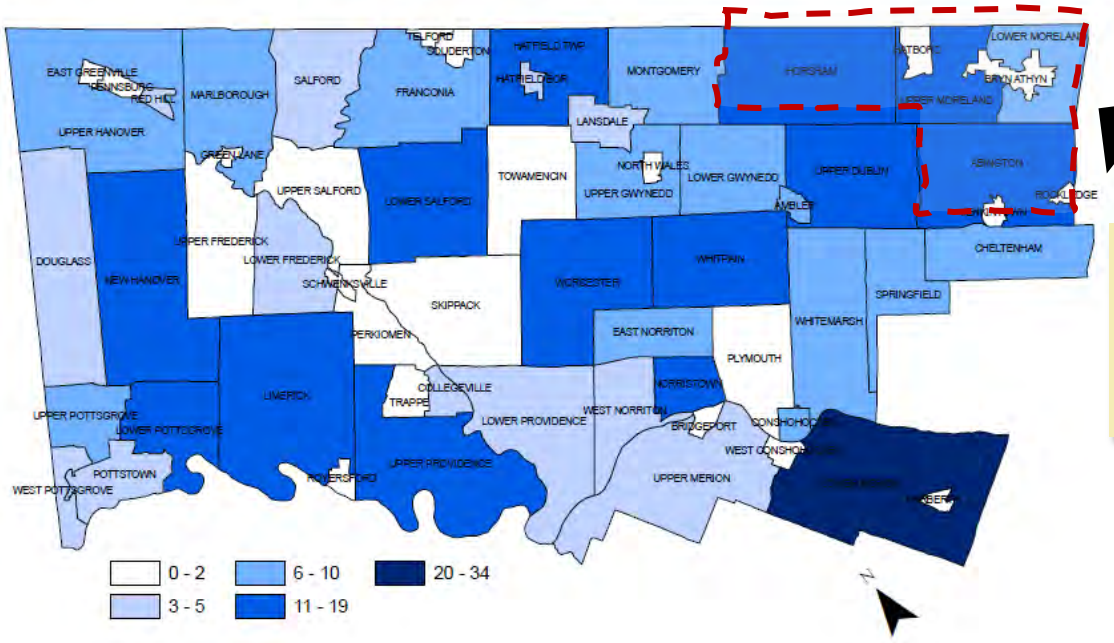


Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

In Abington, Upper and Lower Moreland, Jenkintown, Hatboro, Horsham, and Rockledge municipalities, comprising much of the Willow Grove PMA, a relative few (12) new residential development submissions were received in 2010, representing just 3.5 percent of all residential submissions in the county in 2010. All 12 submissions were for single-family detached housing.

Figure D-2: Number Of Submissions by Municipality, 2010



Residential submissions for this submarket represented 3.5 percent of total Montgomery County residential submissions in 2010.

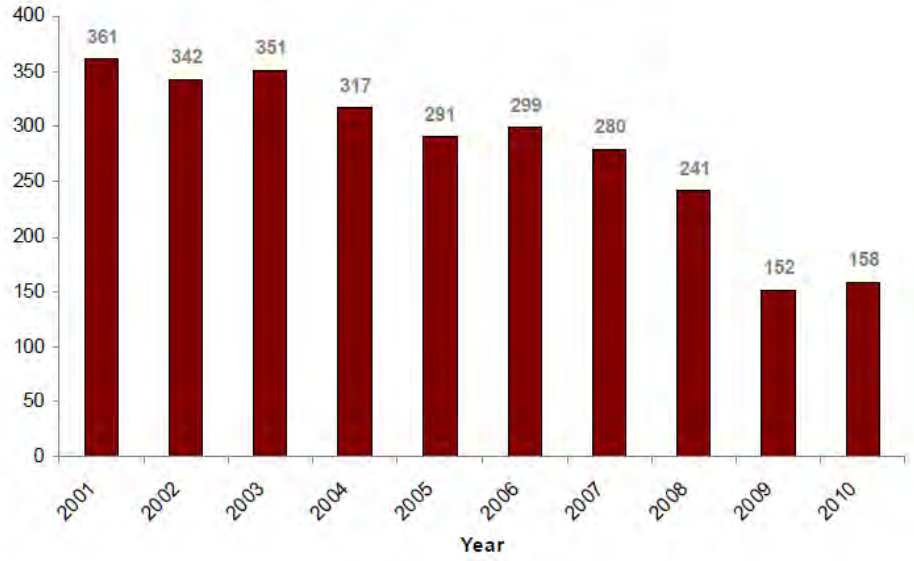
Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

Decreased project submissions are reflected in decreased project approvals. As the Montgomery County Planning Department 2010 Annual Summary notes:

"In 2010, 158 plans were approved by their respective municipalities and recorded as a final plan. This was slightly more than the year before (152), but both years still amount to the lowest totals of approved plans since approvals were recorded beginning in 1990, an indication of the general slowing of development activity in the county."

Figure D-3: Total Plans Approved, 2001 to 2010



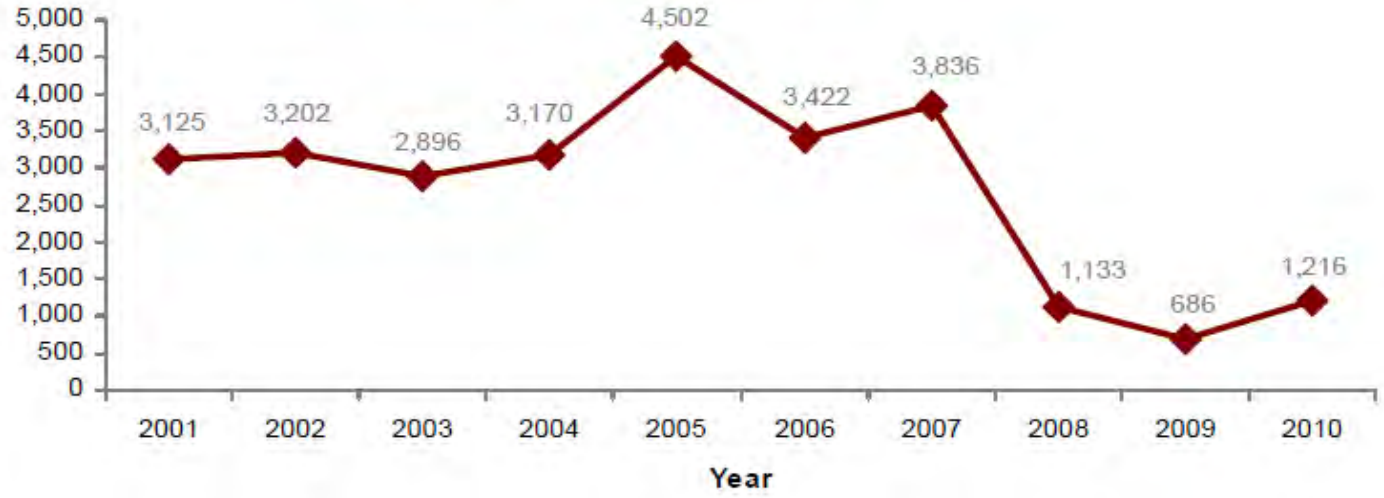
Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

Residential unit approval has followed the decreasing trend observed in all new development projects, but did see an upswing in of 77 percent in 2010. The 2010 Summary further notes:

"While these figures pale in comparison to annual approvals over the rest of the decade, the increase in 2010 is a sharp contrast from the trends outlined for residential proposals. This indicates that there are still proposals from the last several years active and in the pipeline for development…there were still an estimated 5,000 units either approved or seeking approval that had a good chance of being developed over the next five years."

Figure D-4: Approved Residential Housing Units, 2001 to 2010

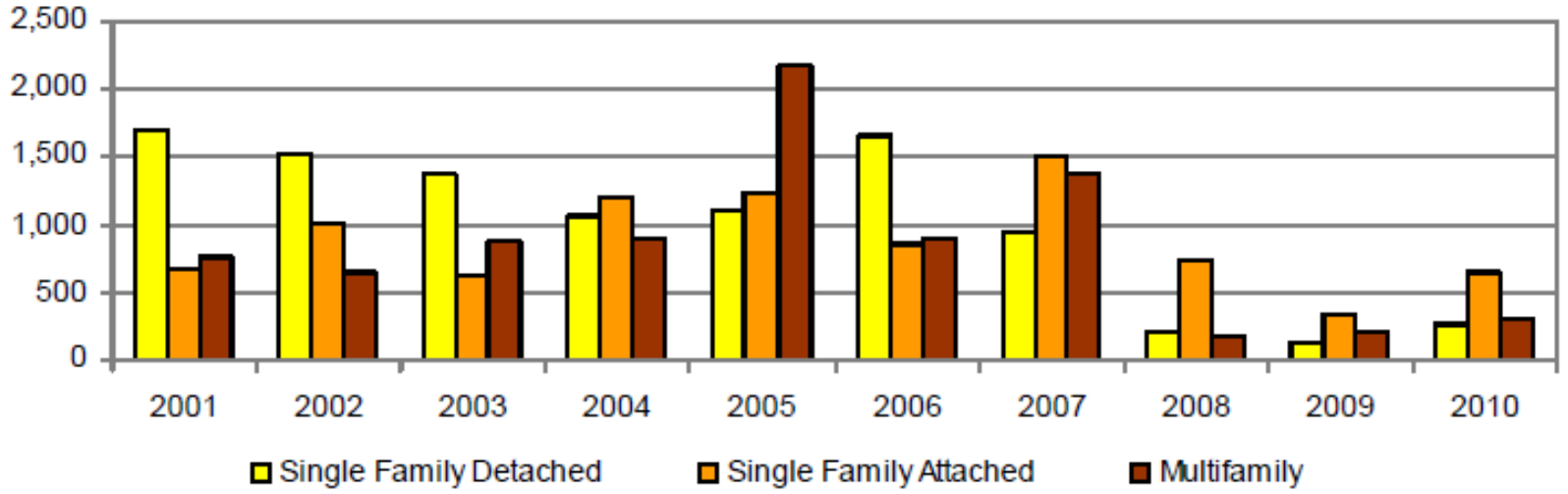


Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

According to the 2010 Annual Summary report, single-family attached residential units (e.g., townhouses) represented more than half of the 1,216 residential units approved in the county in 2010. Single-family detached unit submissions have declined dramatically since 2007, consistent with the start of the national housing and financial crises. While multifamily unit submissions have been at their lowest since the beginning of the decade, a modest upward trends (since 2008) is apparent and bodes well for a local TOD.

Figure D-5: Approved Residential Units By Type, 2001 to 2010



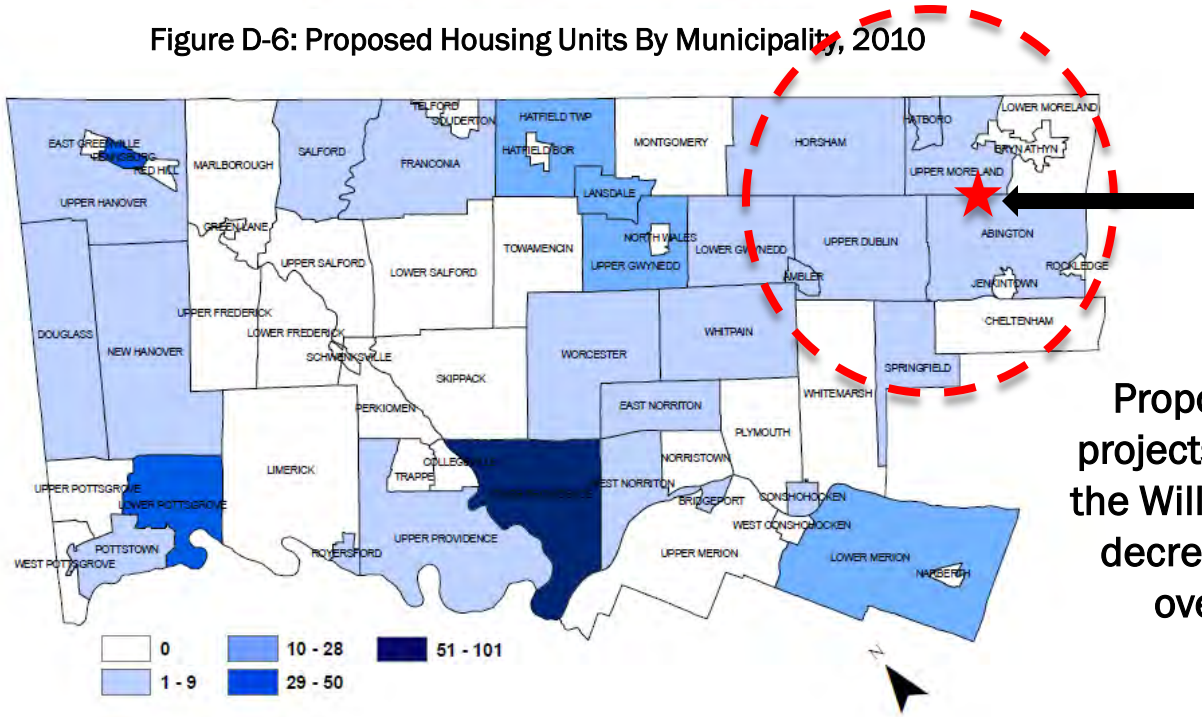
Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

From the Montgomery County 2010 Annual Summary of Land-Use Proposals:

"The most striking indication is how many municipalities had zero residential activity. Coupled with the next group, which had less than ten units proposed per municipality, there were 55 out of 62 municipalities with less than ten units proposed."

Figure D-6: Proposed Housing Units By Municipality, 2010



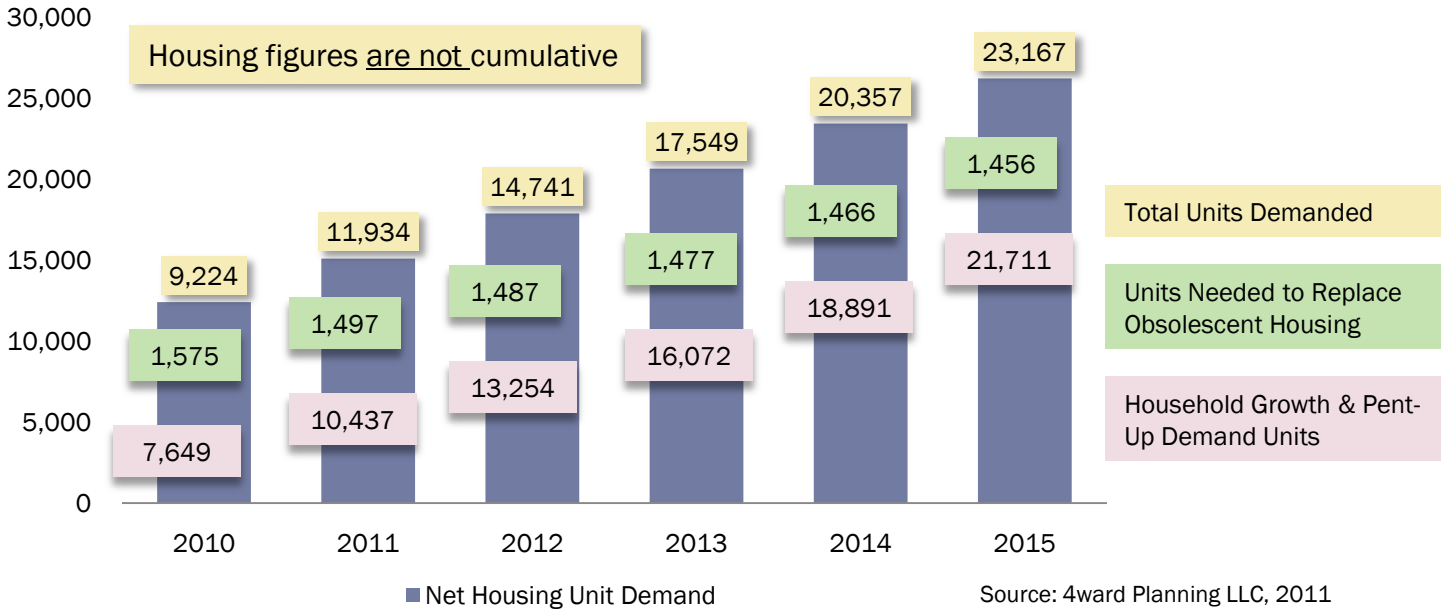
Proposed projects and projects in development in the Willow Grove Area have decreased substantially over recent years.

Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Modest Growth Scenario – Willow Grove PMA

While an estimated 5,000 new residential units are in the pipeline for approval throughout all of Montgomery County, only approximately 700 units are planned, under construction, or recently completed in the Willow Grove area. Based on relatively high net labor inflows, the limited number of new residential construction projects over the past five years and relatively low multi-family vacancy rates, growing demand for new residential units appears evident. Under a modest growth scenario, a market demand for over 23,000 new or substantially rehabilitated housing units, through 2015, is projected.

Figure D-7: Net Housing Unit Demand, Modest Growth



Source: 4ward Planning LLC, 2011

Modest Growth Scenario – Assumptions

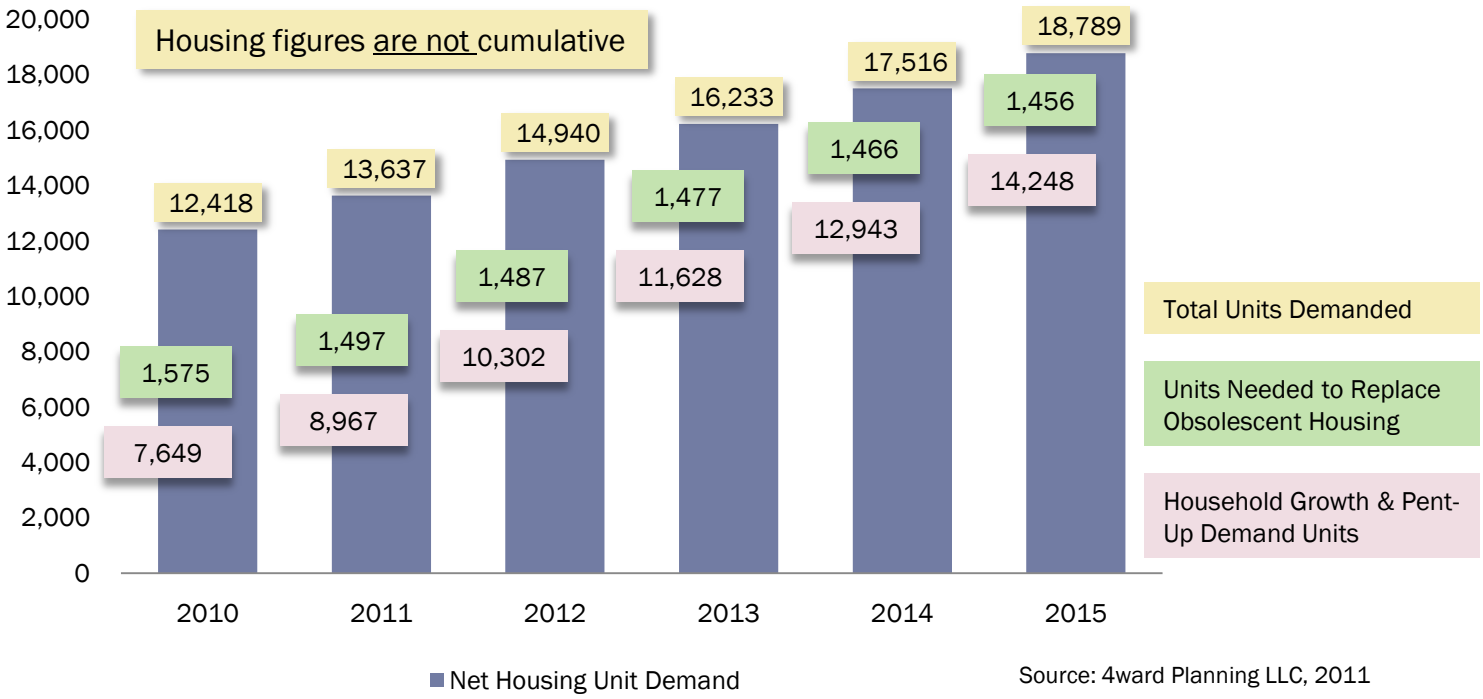
Table 9: Willow Grove PMA
Residential Supply-Demand Analysis

Modest Growth Scenario						
Growth Projection Scenarios						
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Household Population	514,930	518,792	522,683	526,603	530,552	534,531
Total Households	196,038	197,508	198,990	200,482	201,986	203,501
Commuting Workers	56,282	56,282	56,282	56,282	56,282	56,282
Initial Year Housing Unit Total Stock	209,947					
Reported Housing Units to be Delivered from Project Pipeline	159	192	92	92	93	93
Net Marketable Housing Units	199,609	198,304	196,908	195,523	194,150	192,787
Estimated Number of Pent-Up Demand Units	2,814	2,814	2,814	2,814	2,814	2,814
Households	196,038	197,508	198,990	200,482	201,986	203,501
Sub-Total: Estimated Housing Unit Demand per Annum	198,852	200,322	201,804	203,296	204,800	206,315
Add Average Number of Vacant Units	9,980	9,915	9,845	9,776	9,708	9,639
Total: Estimated Housing Unit Demand per Annum	208,833	210,238	211,649	213,072	214,507	215,954
Total: Estimated Net Marketable Housing Units per Annum	199,609	198,304	196,908	195,523	194,150	192,787
Net Housing Unit Demand	**9,224**	**11,934**	**14,741**	**17,549**	**20,357**	**23,167**
Replacement Demand	1,575	1,497	1,487	1,477	1,466	1,456
Household Growth and Pent-Up Worker Demand	7,649	10,437	13,254	16,072	18,891	21,711
Demand - Owner-Occupied	3,690	4,774	5,896	7,020	8,143	9,267
Demand - Rental	5,534	7,160	8,844	10,529	12,214	13,900
Demand - One Bedroom	1,845	2,387	2,948	3,510	4,071	4,633
Demand - Two Bedroom	6,457	8,354	10,319	12,284	14,250	16,217
Demand - Three Bedroom or Greater	922	1,193	1,474	1,755	2,036	2,317
Demand - HH Income $75,000 and Greater	3,228	4,177	5,159	6,142	7,125	8,108
Demand - HH Income $40,000 to $74,999	2,767	3,580	4,422	5,265	6,107	6,950
Demand - HH Income $39,999 and Less	3,228	4,177	5,159	6,142	7,125	8,108

Flat Growth Scenario – Willow Grove PMA

Even under a flat growth scenario (zero percent growth in population and households), nearly 19,000 units are projected to be demanded through 2015, accommodating pent-up worker demand, as well as filling replacement housing needs due to physical obsolescence.

Figure D-8: Net Housing Unit Demand, Flat Growth



Source: 4ward Planning LLC, 2011

Flat Growth Scenario – Assumptions

Table 10_ Willow Grove PMA
Residential Supply-Demand Analysis

Flat Growth Scenario						
Growth Projection Scenarios						
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Population	514,930	514,930	514,930	514,930	514,930	514,930
Households	196,038	196,038	196,038	196,038	196,038	196,038
Commuting Workers	56,282	56,282	56,282	56,282	56,282	56,282
Initial Year Housing Unit Total Stock	209,947					
Reported Housing Units to be Delivered from Project Pipeline	159	192	92	92	93	93
Net Marketable Housing Units	199,609	198,304	196,908	195,523	194,150	192,787
Estimated Number of Pent-Up Demand Units	2,814	2,814	2,814	2,814	2,814	2,814
Households	196,038	196,038	196,038	196,038	196,038	196,038
Sub-Total: Estimated Housing Unit Demand per Annum	198,852	198,852	198,852	198,852	198,852	198,852
Add Average Number of Vacant Units	9,980	9,915	9,845	9,776	9,708	9,639
Total: Estimated Housing Unit Demand per Annum	208,833	208,767	208,698	208,628	208,560	208,491
Total: Estimated Net Marketable Housing Units per Annum	199,609	198,304	196,908	195,523	194,150	192,787
Net Housing Unit Demand	**9,224**	**10,464**	**11,789**	**13,105**	**14,410**	**15,705**
Replacement Demand	1,575	1,497	1,487	1,477	1,466	1,456
Household Growth and Pent-Up Worker Demand	7,649	8,967	10,302	11,628	12,943	14,248
Demand - Owner-Occupied	3,690	4,185	4,716	5,242	5,764	6,282
Demand - Rental	5,534	6,278	7,074	7,863	8,646	9,423
Demand - One Bedroom	1,845	2,093	2,358	2,621	2,882	3,141
Demand - Two Bedroom	6,457	7,325	8,252	9,173	10,087	10,993
Demand - Three Bedroom or Greater	922	1,046	1,179	1,310	1,441	1,570
Demand - HH Income $75,000 and Greater	3,228	3,662	4,126	4,587	5,043	5,497
Demand - HH Income $40,000 to $74,999	2,767	3,139	3,537	3,931	4,323	4,711
Demand - HH Income $39,999 and Less	3,228	3,662	4,126	4,587	5,043	5,497

Prospective Residential Unit Capture for Willow Grove TOD

Figure D-9: Residential Unit Capture Analysis Results

2015 Willow Grove PMA Net Housing Units Demanded
23,167

2015 Willow Grove		2015 TOD Area
Capture Rate	Units Captured	Units Captured
2.0%	463	232
3.5%	811	405
5.0%	1,158	579

Unit Capture Assumptions

TOD Area Capture Rate	50%
Pct. One-Bedroom Units	20%
Pct. Two-Bedroom Units	70%
Pct. Three-Bedroom Units	10%
Owner-Occupied	40%
Renter-Occupied	60%
$39,000 and Less	35%
$40,000 to $74,999	30%
$75,000 and Greater	35%

Units By Type				
1-BR	2-BR	3-BR	Own	Rent
46	162	23	93	139
81	284	41	162	243
116	405	58	232	348

Units Affordable to Household Incomes @		
$39K & Less	$40K to $74.9K	$75K & Greater
81	70	81
143	122	143
202	174	202

Retail
Supply-Demand Analysis

4WARD PLANNING™

Methodology

The retail supply-demand analysis was performed on a half-mile radius around the Willow Grove station. This area roughly corresponds to walking distance from the station and represents the area where certain retail amenities should be present for successful transit-oriented development.

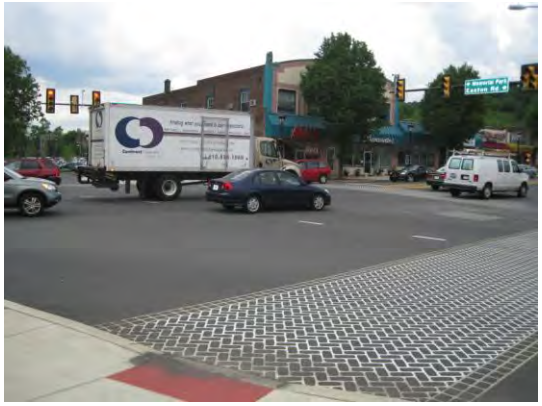
This analysis examines retail real estate related to three household expenditure areas: food at home (supermarkets/grocery stores), food away (restaurants), and entertainment (music, TV, electronics, books, toys, hobbies, and gyms/recreation).

Data were obtained from several sources, including Scan US/US Census Bureau, Delorme Street Atlas 2011, ULI Dollars & Cents of Shopping Centers, and the Montgomery County Planning Bureau. In addition, 4ward Planning took a site tour of the area surrounding the train station.

Existing Local Retail as TOD Retail Supply

The fact that retail space is located within the TOD area does not necessarily mean that it adequately serves as "retail supply" for the TOD; if the retail land uses are not comfortably and safely accessible to pedestrians, then it will not serve the prospective TOD project.

4ward Planning found that there are impediments to pedestrian access to existing retail, including sidewalks that are too narrow and incomplete in places, wide streets without traffic-calming devices, and busy intersections without dedicated pedestrian crossing times. However, assuming that pedestrian improvements are included with the development program, existing retail should still function as part of the retail supply for the TOD.



Retail Supply-Demand: Assumptions

Table 12: Willow Grove – Half-Mile Radius from Station
Retail Supply-Demand Analysis

Growth Scenario based on Scan US 2015 Demographic Projections						
Growth Projection Scenarios	Estimated		Projected			
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Population: Residents	3,602	3,585	3,568	3,552	3,535	3,519
Households	1,420	1,412	1,403	1,395	1,387	1,378
Population: Employees	1,924	1,945	1,966	1,988	2,009	2,031
Population: Employees (Estimated Retail Portion)	770	778	786	795	804	813
Retail Expenditures ($000s)						
Food: At Home (supermarket/grocery bought)	$5,560	$5,411	$5,267	$5,126	$4,989	$4,856
Food: Away From Home (restaurants/bars/cafes)	$4,035	$3,926	$3,822	$3,720	$3,620	$3,524
Entertainment (electronics, pet stores, admissions)	$3,682	$3,584	$3,488	$3,395	$3,304	$3,216
TOTAL	$13,277	$12,922	$12,923	$12,924	$12,927	$12,930
Retail SF Demand						
Food: At Home	13,205	12,852	12,509	12,174	11,849	11,533
Food: Away From Home	9,456	9,204	8,958	8,718	8,486	8,259
Entertainment	9,205	8,959	8,720	8,487	8,260	8,040
TOTAL	31,866	31,015	30,186	29,380	28,595	27,831

Retail Supply: Current and Projected Square Footage

Table 13: Willow Grove – Half-Mile Radius from Station
Retail Supply-Demand Analysis

Growth Scenario based on Scan US 2015 Demographic Projections						
Growth Projection Scenarios	Estimated		Projected			
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Supply (Estimated SF)						
Food: At Home						
Supermarket	123,538	123,538	123,538	123,538	123,538	123,538
Small grocery/convenience	2,250	2,250	2,250	2,250	2,250	2,250
Total Square Footage	125,788	125,788	125,788	125,788	125,788	125,788
Food: Away From Home						
Restaurant, large format	52,000	52,000	52,000	52,000	52,000	52,000
Restaurant, small format/fast food	27,500	27,500	27,500	27,500	27,500	27,500
Total Square Footage	79,500	79,500	79,500	79,500	79,500	79,500
Entertainment						
Electronics/books, small format	22,000	22,000	22,000	22,000	22,000	22,000
Electronics/books, large format	8,000	8,000	8,000	8,000	8,000	8,000
Gyms/karate studios	37,000	37,000	37,000	37,000	37,000	37,000
Toy/hobby stores	19,000	19,000	19,000	19,000	19,000	19,000
Total Square Footage	86,000	86,000	86,000	86,000	86,000	86,000

Retail Demand: Current and Projected Square Footage

Table 14: Willow Grove – Half-Mile Radius from Station

Retail Supply-Demand Analysis

Growth Scenario based on Scan US 2015 Demographic Projections						
Growth Projection Scenarios	Estimated		Projected			
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Existing Retail SF - Totals						
Food: At Home	125,788	125,788	125,788	125,788	125,788	125,788
Food: Away From Home	79,500	79,500	79,500	79,500	79,500	79,500
Entertainment	86,000	86,000	86,000	86,000	86,000	86,000
Total Square Footage	291,288	291,288	291,288	291,288	291,288	291,288
Net Supportable Retail SF						
Food: At Home	(112,583)	(112,936)	(113,279)	(113,614)	(113,939)	(114,255)
Food: Away From Home	(70,044)	(70,296)	(70,542)	(70,782)	(71,014)	(71,241)
Entertainment	(76,795)	(77,041)	(77,280)	(77,513)	(77,740)	(77,960)
TOTAL	**(259,422)**	**(260,273)**	**(261,102)**	**(261,908)**	**(262,693)**	**(263,457)**

The above trend metrics suggests there isn't a strong need for additional retail square footage. However, a TOD project will typically create its own demand for small retail services (e.g., coffee houses, cafes, salons, dry cleaners, etc.)

Office Supply-Demand Analysis

4WARD PLANNING™

Methodology

4ward Planning examined a growth scenario that utilized projections from Pennsylvania State Labor Projections for the Philadelphia MSA, PA counties only. Projected labor data thorough 2018 were annualized and applied to current employment-by-industry data obtained from the US Census Bureau/On The Map.

Analyst-derived average square foot multipliers were then applied to the estimated projected employment numbers for key office industries (e.g., finance) to arrive at projected total office workers. Total projected office workers were multiplied by current square-feet-per-worker data to project total office square footage demands.

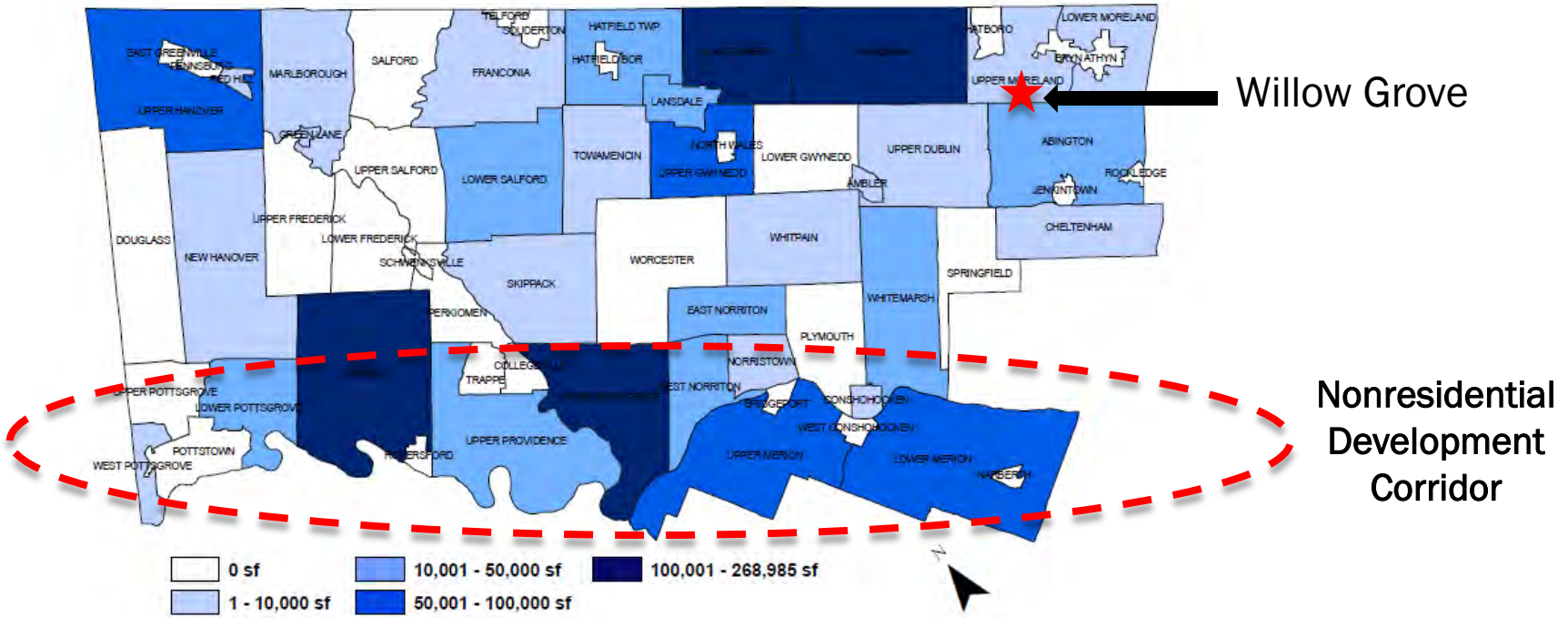
Current office supply data for total and occupied stock were obtained from Reis and validated by other third-party real estate reports; Montgomery County Planning reported that there is no projected new office real estate ("pipeline" projects) over the next few years that would contribute to the supply inventory. Subtracting projected office real estate demand from supply provides the net office space demand through 2015.

Pipeline Project Review

From the Montgomery County 2010 Annual Summary of Land-Use Proposals:

"The countywide map…shows that nonresidential development proposals tended to cluster around the North Penn Region as well as communities in the Schuylkill River Valley - along the Rt. 422 Corridor as well as in Upper and Lower Merion Townships."

Figure E-1: Nonresidential Square Footage By Municipality, 2010

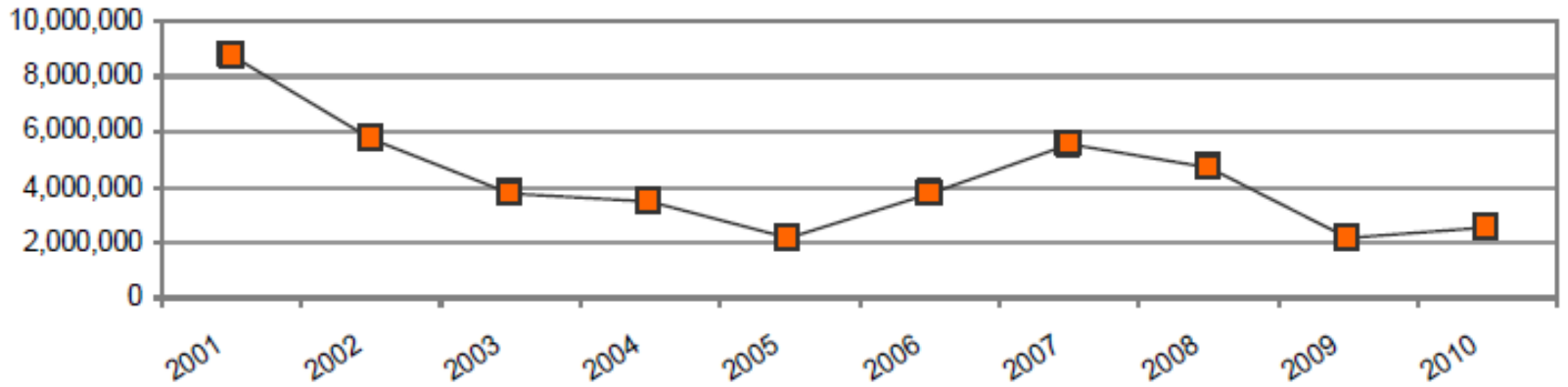


Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Pipeline Project Review

Notwithstanding the increase in total non-residential development square footage approved from 2005 to 2007 (corresponding with the spike in commercial development nationally, and the beginning of the financial collapse), non-residential development, as denoted by square footage approved for construction, has been in general decline since 2001 in Montgomery County. This trend reflects a market that is likely reaching the saturation point, in terms of supply.

Figure E-2: Total Nonresidential Square Feet Approved, 2001-2010

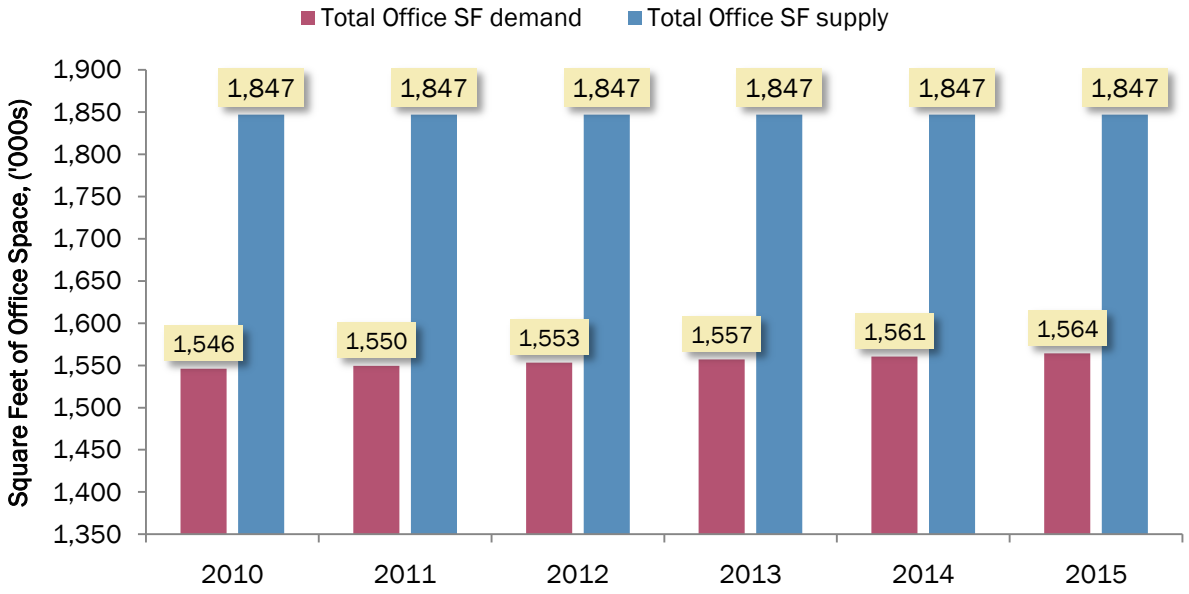


Source: 2010 Annual Summary of Land-Use Proposals in Montgomery County Pennsylvania

Flat Growth Scenario

The recent addition of 90,000 SF of office space to the Jenkintown office submarket has contributed to an over-supply of office space currently on the market. While demand for office is projected to increase slightly over the next five years (from a 1.54 million to 1.56 million SF), supply is projected to exceed demand for the foreseeable future, and national trends of reduced office space per worker are likely to contribute to a continued over-supply of office space.

Figure E-3: Office Square Footage Supply/Demand, Jenkintown Office Submarket



Source: US Census Bureau; On the Map; NCRER, PA Center for Workforce Information and Analysis, 4ward Planning LLC 2011

Flat Growth Scenario – Assumptions

Table 11: Willow Grove - Jenkintown Office Submarket

Office Supply-Demand Analysis

Growth Scenario based on PA Labor Projections for the Philadelphia MSA							
Growth Projection Scenarios	Estimated	Projected					
	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Total Workers, All Job Types	62,426	62,566	62,705	62,844	62,983	63,122
Estimated Total Office Workers (workers within traditional office using industries)	7,476	7,466	7,456	7,446	7,436	7,426
Initial Year Office SF Total Stock	1,847,000					
Initial Year Office SF Occupied Stock	1,546,000					
Current Estimated SF per Office Worker	207					
Total: Estimated Office SF Demand per Annum	1,546,000	1,543,925	1,541,851	1,539,776	1,537,701	1,535,627
Total: Estimated Net Marketable Office SF per Annum	1,847,000	1,847,000	1,847,000	1,847,000	1,847,000	1,847,000
Net Office SF Demand	(301,000)	(303,075)	(305,149)	(307,224)	(309,299)	(311,373)

Flat growth in this category...

...results in flat growth in this category

Source: US Census Bureau; On the Map; NCRER, PA Center for Workforce Information and Analysis, 4ward Planning LLC 2011

Industry employment most associated with the use of office space (e.g., financial services, professional and technical services, and information services) is expected to remain flat over the next four to five years within the Willow Grove office market, in turn, leading to projected flat demand for new office space.

Takeaway: Real Estate Trends

Given that regional and national economic conditions have not improved, appreciably, in the nearly four years since the country's economy went into recession, real estate conditions, generally, for the Willow Grove PMA have held up reasonably well. This finding suggests the area remains attractive to business investment and households and will become more attractive with prospective improvements to commuter rail service and associated amenities.

While housing development has trended downward – particularly over the past four years – there are sufficient signs that growing demand for multi-family rental housing is on the rise, which bodes favorably for any future TOD activities.

Conversely, new Class A office development is likely several years off as relatively high vacancies will need to be pared down first. However, TOD projects are capable of creating demand for new office space (small, though it may be) in markets that generally have little demand, based on the access to quality mass transit and associated amenities.

While no large scale office development will likely be built near the Willow Grove rail station over the next five years, a proposed TOD for the station area would likely garner interest from regional office developers and companies wishing to re-locate closer to mass transit. Once demand for office space picks up in the Willow Grove area, office building formats of 100,000 with 20,000 to 25,000 square foot floor plates would represent likely building typologies close to the rail station.

Takeaway: Real Estate Trends

Like office, existing market trends there is little need for appreciably more retail in the Willow Grove PMA. However, and also similar to TOD's and office development, TOD typically will generate specific demand for small format retail close-in (surrounding) the station (e.g., dry cleaners, coffee shop, salons, café, etc.). Additionally, if existing retail is properly connected in the pedestrian realm, there exists the potential for increased demand from existing retail.

4ward Planning would expect that an additional 10,000 square feet of small specialty and convenience retail will likely be supported by TOD activity around the Willow Grove station stop.

General & Limiting Conditions

4ward Planning LLC has endeavored to ensure that the reported data and information contained in this report are complete, accurate and relevant. All estimates, assumptions and extrapolations are based on methodological techniques employed by 4ward Planning LLC and believed to be reliable. 4ward Planning LLC assumes no responsibility for inaccuracies in reporting by the client, its agents, representatives or any other third party data source used in the preparation of this report.

Further, 4ward Planning LLC makes no warranty or representation concerning the manifestation of the estimated or projected values or results contained in this study. This study may not be used for purposes other than that for which it is prepared or for which prior written consent has first been obtained from 4ward Planning LLC. This study is qualified in its entirety by, and should be considered in light of, the above limitations, conditions and considerations.

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APPENDIX C

Appendix C-1: Traffic Analysis Observations

Willow Grove Train Station Traffic Study 10/18/2011

Intersection (1) York Road & Davisville Road

AM Observations:

Delay for Gate

Train Time	Inbound/Outbound	Time Gate is Down (sec)	Time Gate is Down (min)	Comments/Observations
6:26 AM	Inbound	126	2.10	
6:59 AM	Inbound	145	2.42	longer train; train was late
7:15 AM	Outbound	132	2.2	90 sec for Davisville Rd gates; 132 sec for York Rd gates
7:24 AM	Inbound	165	2.75	
8:17 AM	Outbound	66	1.1	
	Average Time	**127**	**2.12**	

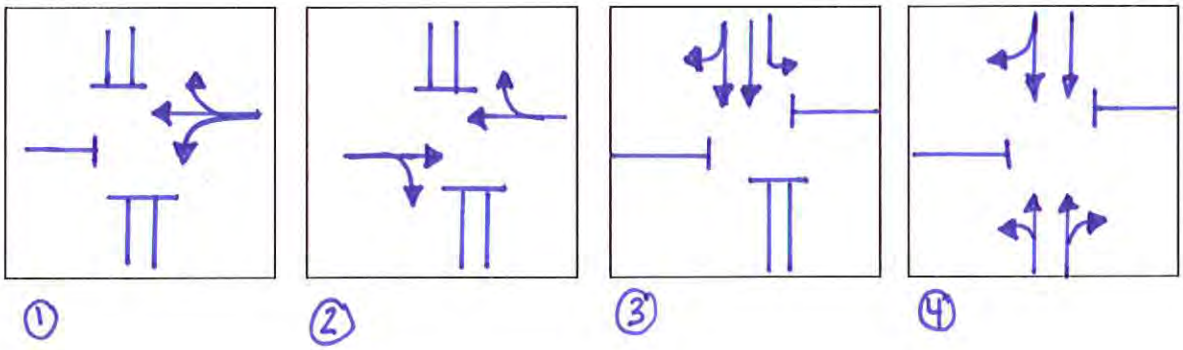
Note: Started time at ring of bell to when gates are fully lifted; on average there was a 5-8 second delay between the gate lifting fully and the signal to change to allow York Rd NB and SB to commence travel through the intersection

Length of Queues Formed

Time	Location	Approx. Length (ft)	No. of cars	Description
6:26 AM	York Rd, NB	480	29	To Enterprise Car rental
	York Rd, SB	215	13	to Burger King
	Davisville WB	---	5	5 cars
	Davisville EB	0	0	Green light cleared cars
6:59 AM	York Rd, NB	760	45	To Intel building
	York Rd, SB	500	30	Backed up to Easton/York Intersection and beyond
	Davisville WB	360	22	long queue

	Davisville EB	0	0	no cars in queue
7:15 AM	York Rd, NB	760	45	Similar to previously recorded
	York Rd, SB	570	34	Backed up to Easton/York Intersection and beyond
	Davisville WB	360	22	long queue forms
	Davisville EB	0	0	Similar to previously recorded
7:24 AM	York Rd, NB	760	45	Similar to previously recorded
	York Rd, SB	570	34	Backed up to Easton/York Intersection and beyond
	Davisville WB	360	22	Similar to previously recorded
	Davisville EB	0	0	Similar to previously recorded
8:17 AM	York Rd, NB	500	30	Short queue to start, backup builds
	York Rd, SB	450	27	Backed up to Easton/York Intersection and beyond
	Davisville WB	300	18	Similar to previously recorded
	Davisville EB	0	0	Similar to previously recorded

Phase/Movement Diagrams



Signal Cycle Length

Time Recorded	Cycle Length (sec)
5:55 AM	65
6:10 AM	90
6:20 AM	90

Cycle Length: 90 seconds

Signal Phase Timings

Yellow: Average time 2-3 seconds

Green:

Location	Length of Phase (sec)
York Rd NB	40
York Rd SB	95
Davisville LT Green Arrow	7

Red:

Location	Length of Phase (sec)
York Rd NB	40
York Rd SB	32
Davisville WB	75

Notes:

-Pedestrians crossing near train/crossing diagonally

-Normal 7AM queue: York Road NB – to end of row homes on left hand side, not beyond extra space storage

-When bell rings for gates to come down, Davisville EB immediately has green signal to allow cars to clear off of train tracks in between Moreland Rd and York Rd; next, Davisville WB is given a green left turn arrow, so cars can turn left onto York Rd SB

-Cars headed NB, queuing on RR tracks (Cleared before any issues)

-Car caught on wrong side of gate (close to tracks)

-Aggressive drivers; fast speeds

-Saw person riding bike: from Davisville onto York Rd NB

Mid-day Observations:

Delay for Gate

Train Time	Inbound/Outbound	Time Gate is Down (sec)	Time Gate is Down (min)	Comments/Observations
11:50 AM	Inbound	130	2.17	
12:15 PM	Outbound	70	1.17	
	Average Time	**100**	**1.67**	

Length of Queues Formed

Time	Location	Approx. Length (ft)	Approx. No. of cars	Description
11:50 AM	York Rd, NB	760	29	To Intel building
	York Rd, SB	270	16	Fills block to Easton
	Davisville WB	235	14	Fills block to start of left turn lane
	Davisville EB	0	0	Green light cleared cars
12:15 PM	York Rd, NB	760	45	To Intel building
	York Rd, SB	---	8	7 or 8 cars
	Davisville WB	---	7	7 cars
	Davisville EB	0	0	Green light cleared cars

Notes:

- Heavy volumes NB & SB at lunchtime
- Observed bike rider

- Maintenance truck on side of road; slowed York Rd NB traffic
- Difficult to see crosswalk striping; consider similar crosswalks as those used at Easton Rd & York Rd

PM Observations:

Delay for Gate

Train Time	Inbound/Outbound	Time Gate is Down (sec)	Time Gate is Down (min)	Comments/Observations
4:48 PM	Outbound	70	1.17	time between 4:48 & 4:50 - 3 min 56 sec
4:50 PM	Inbound	155	2.58	
5:15 PM	Outbound	60	1.00	train late; arrived at 5:24 PM
5:40 PM	Outbound	141	2.35	
	Average	**107**	**1.78**	

Started time at ring of bell to when gates are fully lifted

Length of Queues Formed

Time	Location	Approx. Length (ft)	Approx. No. of cars	Description
4:48 PM	York Rd, NB	480	29	Heavy volume; long queue; Back up to Intel
	York Rd, SB	50	3	Heavy traffic, then cleared
	Davisville WB	235	14	Right turn to York NB, starting to fill up
	Davisville EB	0	0	Green light cleared cars
4:50 PM	York Rd, NB	760	45	Back up to Intel; cars queuing on tracks before train
	York Rd, SB	270	16	Heavy traffic
	Davisville WB	450	27	Right turn to York NB backed up almost to Kremp Florist
	Davisville EB	0	0	Green light cleared cars
5:15 PM	York Rd, NB	480	29	To Enterprise Rental
	York Rd, SB	450	27	Back up beyond Easton
	Davisville WB	270	16	Beyond Left turn lane striping
	Davisville EB	0	0	Green light cleared cars
5:40 PM	York Rd, NB	760	45	Backup to Intel
	York Rd, SB	480	29	Cars in intersection

	Davisville WB	500	30	Backup to Kremps
	Davisville EB	0	0	Green light cleared cars

Notes:

- Queuing in intersections; taking longer to clear each direction
- Observed cars leaving the lot after 5:40 PM train
- Right turn from Davisville WB to York Rd NB is a major movement during the PM peak
- Bus turning right onto Davisville from York NB hit curb (pickup truck did the same); is curb radius okay?
- More aggressive driving
- Bike rider (NB on York Rd)
- More traffic EB on Davisville Rd than in the morning or the afternoon
- No left turn lane (York Rd NB to Davisville WB)
- No left turn lane York SB to Willow Grove Park (and parking lot for train station); tougher to access parking from York Rd
- Traffic queuing on tracks (Davisville EB)
- Lighter traffic on York Rd & Davisville Rd @ 5:05 PM to 5:15 PM (lull in traffic)
- 25 mph York Rd SB (driver average speed is higher)
- Recommend traffic calming: more obvious crosswalks, medians, bump outs, narrower cross section?
- 2 bikes headed SB on York/ 1 bike on Davisville turning onto York Rd NB

Intersection (2) Moreland Road & Davisville Road

AM Observations:

Delay for Gate

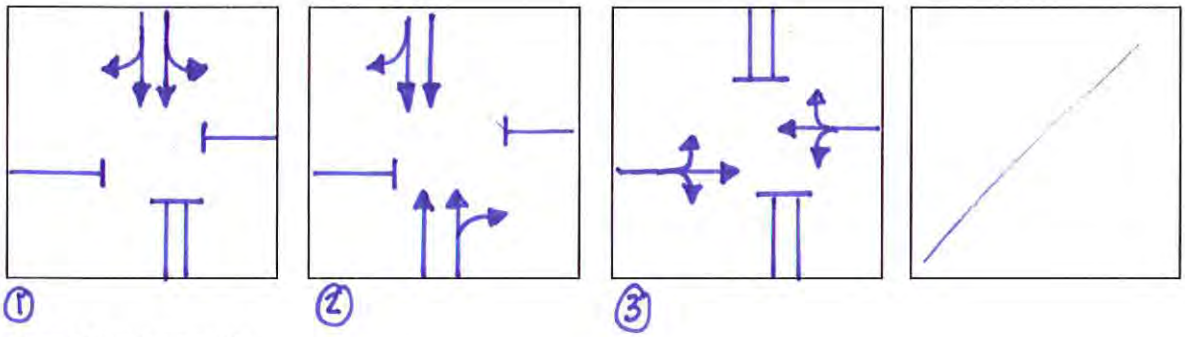
Train Time	Inbound/Outbound	Time Gate is Down (sec)	Time Gate is Down (min)	Comments/Observations
7:59 AM	Inbound	126	2.10	

Length of Queues Formed

Time	Location	Approx. Length (ft)	Approx. No. of cars	Description

6:26 AM	Moreland Rd NB	---	10	To Enterprise Car rental
	Moreland Rd SB	---	2	to Burger King
	Davisville WB	---	0	5 cars
	Davisville EB	---	0	Green light cleared cars

Phase/Movement Diagrams



Signal Cycle Length

Time Recorded	Cycle Length (sec)
7:45 AM	80
7:50 AM	80
7:45 AM	90

Cycle Length: 90 seconds

Signal Phase Timings

Yellow: Average time 2-3 seconds

Green:

Location	Length of Phase (sec)
Moreland Rd	45
Davisville Rd	15

Red:

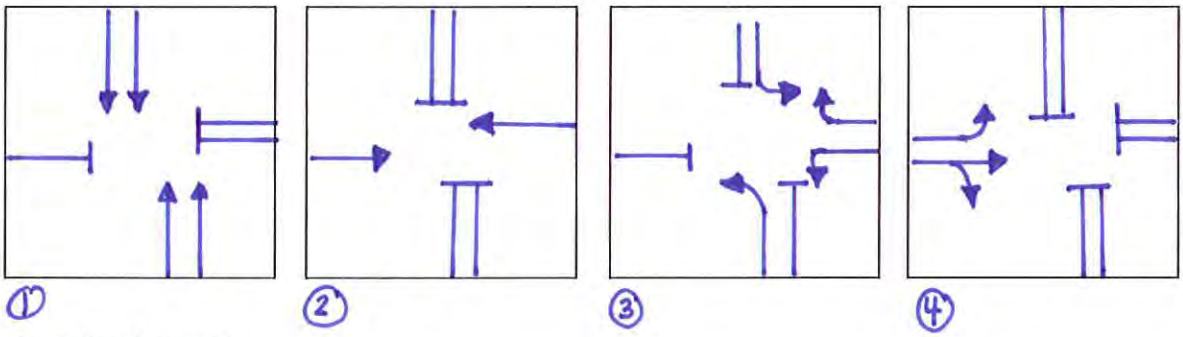
Location	Length of Phase (sec)
Davisville WB	50

Notes:

- Heavy NB traffic on Moreland
- Light at Moreland Rd NB intersection with tracks; long queue forms; light is red even when gates are up and no train is traveling through
- Signal at track, one at Davisville and one at Easton all linked together along Moreland Rd

Intersection (3) Moreland Road & Easton Road

Phase/Movement Diagrams



Signal Cycle Length

Time Recorded	Cycle Length (sec)
11:15 AM	80
11:20 AM	90

Cycle Length: 90 seconds

Signal Phase Timings

Yellow: Average time 2-3 seconds

Green:

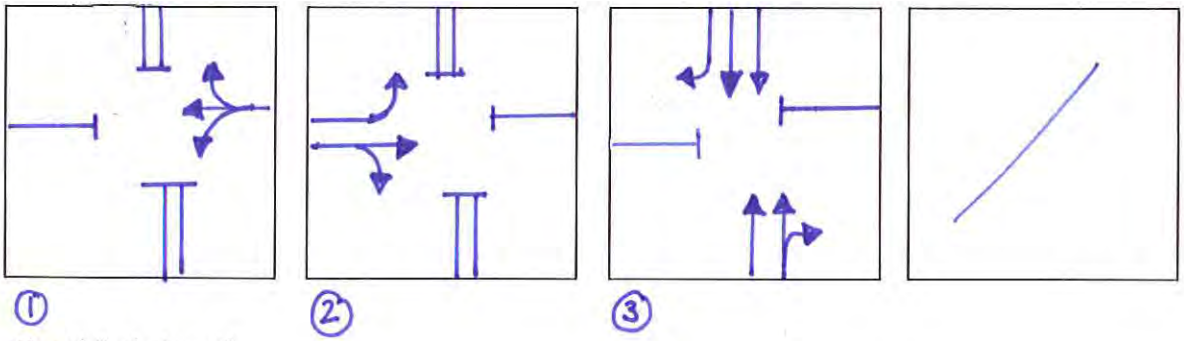
Location	Length of Phase (sec)
Easton Rd WB	20

Red:

Location	Length of Phase (sec)
Easton Rd WB	60

Intersection (4) Easton Road & York Road

Phase/Movement Diagrams



Signal Cycle Length

Time Recorded	Cycle Length (sec)
6:30 AM	120
6:35 AM	100
6:45 AM	140

Cycle Length: 120 seconds

Signal Phase Timings

Yellow: Average time 2-3 seconds

Green:

Location	Length of Phase (sec)
Easton Rd EB	24
Easton Rd WB	7

Red:

Location	Length of Phase (sec)
Easton Rd EB	75
York RD SB/NB	23

Notes:

- Easton WB (seems to have camera/sensor); not a normal movement in the signal cycle
- Easton EB (may have sensor as well)

Three (3) at-grade railroad crossings occur within the Willow Grove Train Station project limits on Moreland Road (SR 0063), Davisville Road (SR 2024) and York Road (SR 0611). The existing Willow Grove Train Station is located east of the at-grade crossing on York Road. Due to the close proximity of the train station to the at-grade crossing at the intersection of Davisville Road and York Road, the gates are closed for the duration the train is at the station.

A field visit was performed on October 18, 2011 to document the existing traffic patterns within the project limits, due to the existing train crossings. AM, Mid-day and PM period observations were performed from 6:00 AM to 8:30 AM, 11:30 AM to 12:30 PM and 4:30 PM to 6:00 PM, respectively.

The existing Willow Grove Train Station provides low level platforms for users to enter and exit the train. This study proposed providing high level platforms at the station. It is believed that high level platforms will reduce the time required to exit and enter the train. In turn, impacts to traffic will lessen due to the gates being closed at Davisville Road and York Road for the duration the train is at the station. To quantify the existing impacts of the gate closing, gate closure times were observed for each time period. The following table summarizes the average time the gates were closed during the AM, Mid-day and PM periods due to inbound and outbound trains.

Direction	**Time Gate Closed (min)**		
	AM	**Mid-day**	**PM**
Inbound	2.43	2.17	2.58
Outbound	1.65	1.17	1.52
Average	2.04	1.67	2.05

To determine the impacts of the existing gate closures, existing queue lengths at the intersection of Davisville Road and York Road were calculated. The following table demonstrates the queues observed at the intersection of Davisville Road and York Road by approach.

Approach	**AM Peak**		**Mid-day Peak**		**PM Peak**	
	Average Queue Length (feet)	**Queue per Minute (ft/min)**	**Average Queue Length (feet)**	**Queue per Minute (ft/min)**	**Average Queue Length (feet)**	**Queue per Minute (ft/min)**
York Rd Northbound	652	264	760	456	620	252
York Rd Southbound	461	187	270	162	313	127
Davisville Rd Westbound	340	138	235	141	364	148

The table above demonstrates the importance of reducing the length of time the gates are closed. The longest queue is observed on York Road Northbound. If the average time the gate is closed during the AM and PM period can be reduced by 1 minute, the queue during the AM and PM period could potentially shorten by 250’.

During the field visit observations of the existing signals within the project limits were performed. In addition, it is believed that several traffic signal improvements could be implemented to improve mobility, in addition to the station improvements. The following are suggested improvements based on field observations.

- Improve crosswalks to increase visibility
- Implement traffic calming treatments to enforce the 25 mph posted speed limit.
- Optimize signal timings, including cycle lengths, phasing and coordination
- Reduce gate closure time

Current Delay at York Rd.

	AM	Off Peak	PM	
Outbound Average	0:01:39	0:01:10	0:01:31	
Weekday Trains	3	15	4	22
Weekend Trains		17		
Inbound Average	0:02:26	0:02:10	0:02:35	
Weekday Trains	5	14	2	21
Weekend Trains		17		
High-Level Platform Savings	0:00:15	0:00:08	0:00:15	

Current Delay at Moreland Rd.	All Day
Average	0:01:10
Weekday Trains	43
Weekend Trains	34

TOTAL DAILY DELAY ESTIMATIONS

Weekday Baseline	**2:06:21**	High-Level Platform Savings	0:07:22
Weekend Baseline	1:36:20	High-Level Platform Savings	0:04:32

CONCEPT WEEKDAY DELAY ANALYSIS

Concept A1	**2:26:34**	0:20:13	16% increase
Concept A2	**2:26:34**	0:20:13	16% increase
Concept B1	**1:58:59**	0:07:22	6% decrease
Concept B2	**1:38:56**	0:27:25	22% decrease
Concept C1	**1:58:59**	0:07:22	6% decrease
Concept C2	**1:40:20**	0:26:01	21% decrease

Appendix C-2: Station Parking Needs Assessment

Parking Demand Estimation - Used to guage parking need/size structured parking facility

Station	Line	Avg. Weekday Boardings	Parking Provided	Percent Parking per Boarding	Parking Available	Parking Utilization
Warminster	Warminster	1,031	800	78%	0	100%
Hatboro	Warminster	473	268	57%	55	79%
Willow Grove	**Warminster**	**491**	**190**	**39%**	**28**	**85%**
Crestmont	Warminster	70	20	29%	0	100%
Roslyn	Warminster	237	87	37%	20	77%
Ardsley	Warminster	135	47	35%	0	100%

Station	Line	Avg. Weekday Boardings	Parking Provided	Percent Parking per Boarding	Parking Available	Parking Utilization
Ambler	Lansdale/Doyestown	945	619	66%	65	89%
Fort Washington	Lansdale/Doyestown	897	573	64%	0	100%
North Wales	Lansdale/Doyestown	833	418	50%	0	100%
Langhorne	West Trenton	676	348	51%	30	91%
Willow Grove	**Warminster**	**491**	**190**	**39%**	**28**	**85%**
Croydon	Trenton	311	197	63%	90	54%
Trevose	West Trenton	300	219	73%	25	89%

Current Boardings	491
Target Future Boardings	650
% Increase in Boardings	32%

Ultimate Parking Provision	Parking Goal	New Spaces Needed	% Increase in space
65% Current Boardings	320	130	68%
60% Future Boardings	390	200	105%

CURRENT BOARDING SCENARIOS

All SEPTA Parking Consolidated into one parking garage

Parking Garage Capacity	Needed for SEPTA	Available for other use
375	320	**55**

Retain some existing SEPTA surface parking

	Currently Available
Davisville Road Site	65
Verizon Lot	42
Retained parking	107

Parking Garage Capacity	Retained Parking	Needed for SEPTA	Available for other use
375	107	320	**162**

FUTURE BOARDING SCENARIOS

All SEPTA Parking Consolidated into one parking garage

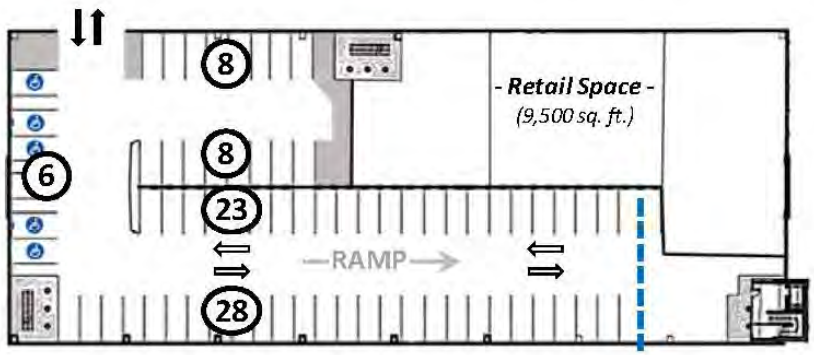
Parking Garage Capacity	Needed for SEPTA	Available for other use
490	390	**100**

Retain some existing SEPTA surface parking

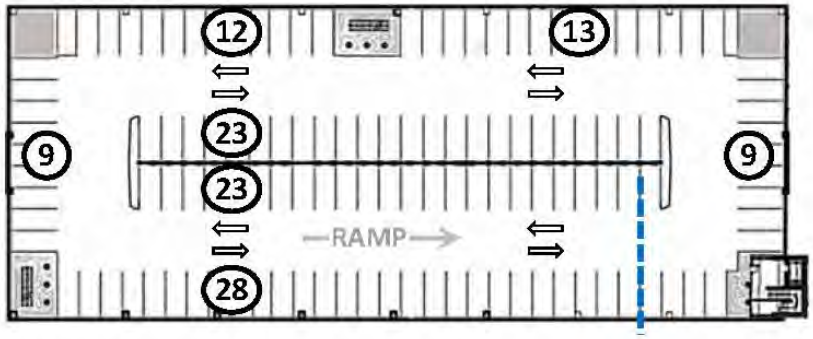
	Currently Available
Davisville Road Site	0
Verizon Lot	0
Retained parking	0

Parking Garage Capacity	Retained Parking	Needed for SEPTA	Available for other use
490	0	390	**100**

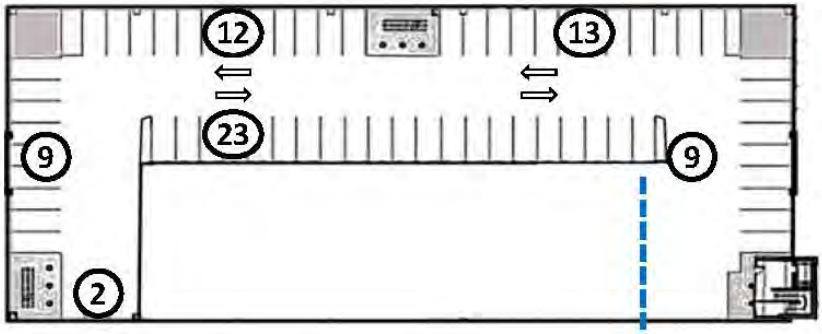
Note: Future SEPTA ridership could be accomodated by addition of one level to parking garage



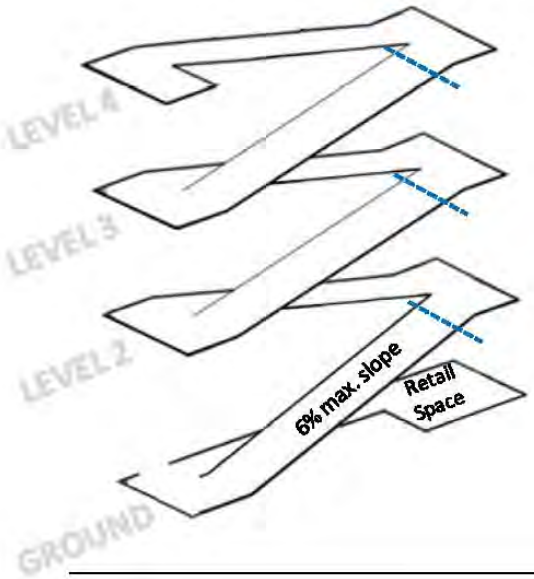
73 spaces



117 spaces



68 spaces



Appendix C-3: Station Design Component Cost Estimation

Willow Grove Design Concept Cost Estimates

ITEM	UNITS	UNIT COST (I	QUANTITY		TOTAL COST (000s)	Notes
Track Improvements/Signals						
20 mph DS Siding Extension, #15 TO	Linear Foot		680	$	500	Maintains Grove Siding as a siding (reduced speed)
Grade crossing upgrade	AREMA %	486	65%	$	320	AREMA estimate of % of grade crossing related to control circuitry and installation
Signal tower replacement				$	200	Estimate based on ALSTOM components
Station Facility						
Retaining Walls (5')	Square foot	100	150	$	75	Amtrak Keystone Corridor Estimate
Station Building	Square foot	600	1000		600	Pre-fabricated station estimate per square foot
Landscaping, Signage, Lighting					250	Engineering Estimate based on field view
Platforms						
High-level platforms (10' width)	Linear foot	375	1100	$	4,125	Estimated unit cost based on Ryers Station (SEPTA) elements
Canopies (14' width)	Linear foot	150	300	$	630	Estimated unit cost based on Ryers Station (SEPTA) elements
Retaining walls (5')	Square foot	100	400	$	200	Amtrak Keystone Corridor Estimate - Middletown Station
ADA access ramps (north)	Per Unit	550	2	$	1,100	Estimated unit cost based on Ryers Station ramp (reduced slightly due to lower vertical height)
ADA access ramps (south)	Per Unit	400	2	$	800	Estimated unit cost based on Ryers Station ramp (reduced due to lower vertical height)
Parking						
Lot resurface/restripping	Per parking space	5	65	$	325	Parking resurfacing associated with Station Facility line item
Structure Cost	Per parking space	16	375	$	6,000	UNIT COST of $16,000 based on Philadelphia VTPI Parking Cost Research (exclusive of addition
Stair Tower(s)	Per Unit	450	3	$	1,350	Amtrak Keystone Corridor Estimate - Middletown Station
Elevator(s)	Per Unit	250	1	$	250	Amtrak Keystone Corridor Estimate - Middletown Station
Pedestrian Over Crossing	Per Unit	1400			0	Amtrak Keystone Corridor Estimate - Middletown Station
Stormwater Management					500	Engineering Estimate based on field view
Streetscape Improvements				$	100	DOT Restriping/ROW estimate
Subtotal				$	17,325	
Scope Contingency	15%			$	2,599	
Total Construction Cost				$	19,924	
PE Design	15%			$	2,989	
Construction Engineering Inspection (CEI)	8%			$	1,594	
Maintenance of Traffic (MOT) and Mobilization						
(20% of trackwork construction ONLY)	20%			$	204	
Right-of-Way/Utilities	10%			$	1,992	
PROJECT TOTAL				**$**	**26,703**	