

Transportation and Circulation Plan

Introduction

The transportation and circulation network available to residents and businesses affects the character of and efficiency of the movement of people and goods within Kennett Township. Retaining and enhancing the Township’s attractiveness as a place to live, visit, work, and shop is another important consideration in transportation planning. The transportation and circulation network in the Township entails both vehicular (automobile and truck traffic) and pedestrian (sidewalks, paths, trails, and road cycling) modes of travel.

This Chapter describes the existing transportation and circulation system infrastructure and provides recommendations to address system needs and enhancements.

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- Work/Worker Commuting Pattern
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- Transportation Improvement Projects

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Existing Circulation System

Land Use and Road Network Pattern

Kennett Township is a rural suburbanizing municipality. Higher intensities of development and a mixing of uses occur around Kennett Square Borough and along the Route 1 and 52 corridors, with the remainder of (and majority of land area in) the Township in residential, larger-scale homestead, and agricultural uses. Existing land uses are shown on Map 7-1. Being located within a broader developed and developing area, through-traffic is an issue within the Township and the Kennett Region overall.

The Township contains approximately 73 linear miles of public roadways. The overall road network in the Township consists primarily of narrow, winding country cartways, bounded by tree masses and steep banks. The rural quality of the network highly contributes to the defining character of the Township, and as such is an important community resource and feature. This network was not designed to support high volumes of traffic nor high rates of speed. It was instead built to serve a historically farming-based community. However, continuing development of the Route 1 corridor and northern DE has led to development pressure in southern Chester County, including Kennett Township. This has resulted in the road network being used for higher volumes of traffic than originally intended. There has been discussion in the Township about widening roads to accommodate modern farm trucks; through any road widening has Township character changing and environmental/stormwater runoff effects related to increased

impervious surface. Current road density in the Township is approximately 4.7 linear miles of public roadway per 1 square mile of Township land area. Kennett Pike/Route 52 provides the primary north-south roadway in the Township that directly accesses Wilmington, from whence a considerable amount of the Township’s development pressure originates. Route 1/Baltimore Pike provide the primary east-west roadway in the Township that access Route 202 and Delaware County.

The orientation of the Township within close proximity to DE and the abundant employment and regional shopping opportunities in northern DE that are thus within minutes of the Township, has placed an increasing demand on those roads in the Township that provide a link to DE. This Plan, as well as the 2004 Township Comprehensive Plan, strives to establish a balance between the provision of safe and efficient circulation and the protection of scenic/rural resources, including roadways, in the Township.

Work/Worker Commuting Pattern

The U.S. Census’ Center of Economic Studies provides data about work/worker commuting patterns to primary jobs for both 1) Township residents (working within and outside the Township) and 2) non-Township residents working within the Township. ‘Primary job’ refers to a worker’s main job only, and does not include second jobs or other income.¹

Primary Jobs Located in the Township

Table 9-1 shows the top 10 specific locations where primary jobholders in the Township commute from. Kennett Square Borough has been the largest single commuter origin, followed by the Township itself, New Garden, and North Central DE.

In looking at the generalized trend for all commuting patterns for primary jobs in the Township in 2010 (Figure 9-1), the majority of primary jobholders come from west and south of the Township, with the next biggest groups traveling from the northeast. In 2010, over two-thirds of individuals who work at primary jobs in the Township come from locations within Chester and New Castle Counties. Overall, the vast majority (80 percent) of primary jobholders in the Township commute less than 25 miles, with a little over half of those workers commuting less than 10 miles.

The majority of people who work in the Township are not Township residents and likewise the majority of Township residents commute elsewhere for work. In 2010, about 6 percent (197 persons) of persons employed at jobs in the Township were also Township residents, which is a decrease (number and share) from past years.

Table 9-1: Top Locations where Persons Employed at Primary Jobs in the Township Commute From/Reside

LOCATIONS	YEAR						
	2002	2004	2006	2007	2008	2009	2010
TOTAL PRIMARY JOBS IN THE TOWNSHIP	3,639	3,718	3,400	4,101	4,355	4,066	3,345
KENNETT SQUARE BOROUGH	13.4%	10.5%	11.9%	10.8%	10.3%	11.1%	9.7%
KENNETT TOWNSHIP	7.1%	7.8%	7.2%	6.0%	6.2%	6.5%	5.9%
NEW GARDEN TOWNSHIP	4.4%	6.1%	5.9%	5.7%	4.8%	5.2%	5.5%
NORTH CENTRAL, DE	5.4%	5.9%	5.9%	5.5%	5.7%	5.3%	5.3%
EAST MARLBOROUGH TOWNSHIP	3.8%	3.6%	5.0%	4.0%	4.2%	3.5%	3.2%
PHILADELPHIA	2.1%	3.2%	2.0%	3.1%	2.9%	2.2%	2.8%
LONDON GROVE TOWNSHIP	2.8%	2.0%	3.4%	2.8%	2.0%	2.3%	2.5%
EAST NOTTINGHAM TOWNSHIP	1.6%	1.8%	1.6%	1.7%	2.4%	2.0%	2.2%
WILMINGTON, DE	2.8%	2.1%	1.9%	2.2%	1.9%	2.3%	2.0%
NEWARK AREA, DE	1.8%	1.7%	1.3%	1.6%	1.8%	1.5%	1.9%

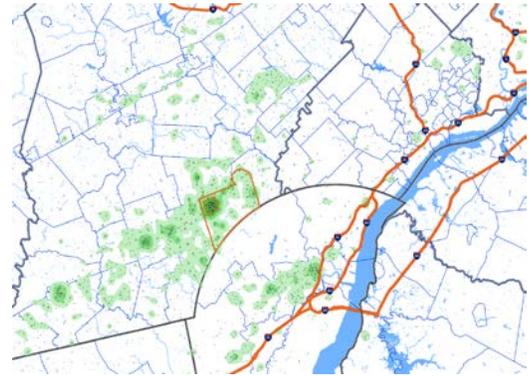
Source: U.S. Census Bureau Center of Economic Studies ‘OnTheMap’, 2010

3,148 - Employed in Selection Area, Live Outside
2,900 - Live in Selection Area, Employed Outside
197 - Employed and Live in Selection Area

¹ This data is primarily from the Longitudinal Employer-Household Dynamics (LEHD) Program, a relatively new cooperative effort of the U.S. Census Bureau and PA Department of Labor and Industry (PAL&I). This data is not comparable to job data from prior comprehensive plans.

Figure 9-1: General Areas where Persons Employed at Primary Jobs in the Township Commute From/Reside, 2010

Daily work commuting patterns show a great deal of travel into and out of the Township for primary job employment. Overall, in 2010, there was a positive workforce in-flow into the Township (meaning more workers came into the Township for their primary jobs than left). This indicates the Township is not simply a ‘bedroom community’ where people reside and travel to other places for employment, but rather is also a location of substantive primary jobs for the larger regional work force.



Primary Jobs of Township Residents

Table 9-2 shows the top 10 specific destinations of Township residents for their primary jobs. Wilmington has largely been the major single work destination, followed by Township residents remaining in the Township to work.

Table 9-2: Top Primary Job Work Destinations of Employed Kennett Township Residents

LOCATIONS	YEAR						
	2002	2004	2006	2007	2008	2009	2010
TOTAL PRIMARY JOBS OF TOWNSHIP RESIDENTS	2,188	2,694	2,871	3,074	3,109	3,186	3,097
WILMINGTON, DE	10.2%	12.9%	11.5%	9.6%	10.0%	10.3%	7.7%
KENNETT TOWNSHIP	11.8%	10.8%	8.6%	8.0%	8.7%	8.3%	6.4%
NORTHEAST NCC, DE	2.7%	3.7%	4.1%	4.4%	3.5%	4.3%	5.4%
KENNETT SQUARE BOROUGH	7.5%	5.8%	4.9%	5.1%	4.6%	4.1%	5.3%
PHILADELPHIA	4.4%	3.7%	4.8%	4.4%	3.6%	4.4%	4.5%
NEW GARDEN TOWNSHIP	4.9%	5.3%	6.5%	5.7%	4.4%	5.0%	4.1%
NORTHWEST NCC, DE	3.7%	5.1%	3.7%	2.9%	4.1%	4.5%	4.0%
WEST GOSHEN TOWNSHIP	3.2%	2.5%	2.8%	2.7%	2.9%	2.4%	3.3%
NEW CASTLE AREA, DE	2.2%	2.2%	2.9%	3.8%	3.2%	3.2%	3.0%
NEWARK AREA, DE	2.7%	2.3%	2.6%	3.1%	3.1%	3.7%	2.8%

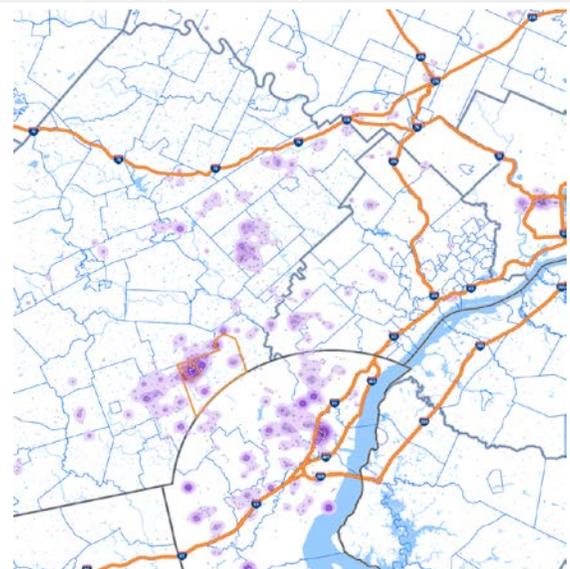
Source: U.S. Census Bureau Center of Economic Studies ‘OnTheMap’, 2010

Looking at the trend for all commuting patterns for primary jobs held by Township residents in 2010 (Figure 9-2), the majority of employed Township residents travel southeast, with the next biggest group travelling to the northeast. In 2010, two-thirds of employed Township residents worked at jobs within Chester and New Castle Counties. In 2010, the majority (76.5 percent) of employed Township residents commute less than 25 miles to their primary jobs, with over half of those workers commuting less than 10 miles away, while 9.7 percent have a lengthy commute of more than 50 miles. In comparison, 78.6 percent of Chester County residents have an average work commute of less than 25 miles while only 7.8 percent travel more than 50 miles.

Means of Commuting to Work

The U.S. Census American Community Survey (ACS) 5-Year Estimates provides data about the means by which the labor force travels to work. The 2006/10 data indicates that the vast majority (around 78.0 percent) of working (primary jobs and secondary jobs) Township residents drove alone (single occupancy cars, trucks, vans) to work, while about 3.0 percent carpoolled. Only around 7.5 percent used alternate forms of transportation to travel to work including about 0.2 percent using public transportation, 6.5 percent walking, and 0.7 percent using cabs or motorcycles. A comparable number (around 81.0 percent) of working County residents drove alone to work, while a notable number (about 7.5 percent) carpoolled. A comparable amount (around 6.0 percent) of working County residents used alternate forms of transportation including about 2.5 percent using public transportation, 0.2 percent bicycling, 2.0 percent walking, and 0.9 percent using cabs or motorcycles.

Figure 9-2: General Primary Job Work Destinations of Employed Township Residents, 2010



Modes of Transportation

The transportation network includes various modes of travel and their facilities/infrastructure. These modes can be examined on an individualized and in an interrelated manner in order to strive to achieve an overall network that functions efficiently and safely and to address function, connectivity, and enhancements as related to overall circulation and meeting Township needs.

Roadways

Of the approximately 73 miles of public roadways in the Township, around 21 miles are owned and maintained by PennDOT and around 52 miles of roadway and 6 bridges are the responsibility (owned and maintained) of the Township. There are also a number of private roads, drives, and access lanes to residential and commercial developments, which do not fall under the responsibility of the Township.

Traffic Volumes

Major transportation corridors in the immediate area of the Township include US Route 1, and PA Routes 52, 41, and 82, as well as PA Route 926 just to the north. In terms of access and commuting to work and for business, these corridors are a benefit for residents and business. Map 9-1 displays 2012 estimates of average daily traffic volumes (ADT) on these corridors and other roadways in and adjacent to the Township. As expected, Route 1 bypass and Route 1 business/Baltimore Pike are the most traveled due to their function and connectivity, with ADT volumes of around 25,000-30,000 vehicles and 25,000-40,000 vehicles respectively. Route 1 between the Bypass and Route 52 south has a notably high ADT as compared to other segments of Route 1.

Route 41, an important regional highway for commuters, business, and truck transport, carries an ADT volume of about 12,000 vehicles on its segment in the Township. Route 82 north of Kennett Square Borough has ADT volumes of around 13,000 vehicles, due to its interchange with the Bypass. Route 52 south of Route 1 in the Township has an ADT volume of around 10,700 vehicles, indicative of its importance in providing commuter and business access to New Castle County and the Wilmington area. Route 52 north of Route 1 has a slightly higher estimated ADT (13,700).

State and Cypress Streets west of the Borough (8,600 and 12,000 ADT), and to a lesser extent to the east (7,500 and 8,700 ADT), also carry higher levels of traffic. Kaolin Road and South Union Street serve as connections to the Route 41 corridor, indicated by ADTs of approximately 17,000 and 10,000 vehicles respectively. The remainder of roads in the Township experience substantially lower traffic volumes as is appropriate for local function roadways.

Traffic counts were also completed for nearly every intersection in the Township for the 2002 (updated in 2004) KARPC Transportation Study, however with the subsequent development that has occurred in the Township since that time those counts are not specifically included in this Plan and should be reexamined when a Study update occurs.

Functional Classification

Roadways can function in different manners, serving varying traffic volumes and speed, trip purposes and lengths, and land uses. Roadway Functional Classification is a method of categorizing roads by their planned purpose in accommodating differing types (vehicular, pedestrian, and bicycle) and volumes of traffic. Figure 9-3 illustrates an example of how this functional classification system is applied and Table 9-5 provides a description by subcomponent for each functional class.

Roadway Functional Classification and Roadway Access/Mobility are useful in establishing roadway design standards, access management strategies, and for prioritizing planned improvements. Map 9-1 depicts Roadway Functional Classification for roadways in and near the Township, which range from many local function roads to Route 1 as an expressway

Figure 9-3: Roadway Functional Classification Example Illustration



function. As indicated by their functional classifications, Routes 1, 41, 52, 82 (north), and 7 (going into DE towards Hockessin), and Old Baltimore Pike/Cypress Street are designed and intended to serve regional traffic. However, roadway design can differ among roadways of the same functional class depending on land uses and context. Context sensitive design standards are included as part of recommendations in this plan.

Table 9-3: Relation Between Road Access & Mobility

	GREATER MOBILITY	LESSER MOBILITY
MORE ACCESS POINTS	--	X (e.g. Baltimore Pike)
LESS ACCESS POINTS	X (e.g. Rt 1 bypass)	--

Improvements

Roadway incidents can be examined to determine future priority roadway improvements and locations. Though roadway issues may be related to various factors, a number of incidents in an area provides an indicator that issues exist which may be related to the physical characteristics of a road or intersection. Map 9-3 displays areas of consideration for the Township when planning for future transportation improvements, based on the density of incidents reported by PennDOT data, examples of which include:

- Kaolin Road is used by many commuters as a connection between Route 41 and areas east of the Township. The segment of Kaolin Road between Chandler Mill and Marshall Bridge roads experiences high traffic volumes and incidents as compared to other roads of its functional class and location.
- Route 52 at Route 1 and Creek Road at Hillendale Road are key areas for consideration. Bayard/Rosedale Roads, Baltimore Pike near the Borough, Chandler Mill/ Hillendale Roads, McFarlan/Hillendale Roads, and McFarlan Road/Baltimore Pike may also be areas for future consideration due to traffic levels, topography, and road configuration.
- KARPC may consider regional discussions about possible improvements to the Route 1 bypass/Route 82 interchange in East Marlborough, and the Route 1 bypass between/in the vicinity of its' interchange with Route 1 business/Baltimore Pike and the North Walnut Road area.

The Township addressed a need for improvement to the McFarlan /Rosedale Road intersection, which is complicated by a railroad crossing to its immediate east and the change to a Borough traffic pattern to its immediate west. To address the need, the Township installed 4-way stop signs at this intersection and flashing lights to notify vehicles when approaching the intersection. Kaolin, Hillendale, and Old Kennett roads form a 5-point intersection, and because of its configuration, changes in topography, and roadway functional classifications, it can be a challenge. Since 2002, the Township installed a traffic signal with timers at the intersection and to address more recent needs the closed-loop signal system has since been removed and replaced by a traffic camera and signal retiming. The intersection was listed on the 2011 TII for added improvements, which has since been funded and completed.

Maintenance

The Township Road Master and Maintenance Crew are responsible to carry out maintenance and repair of the 52-miles of Township-owned roads and six Township-owned bridges. The Road Master oversees the maintenance crew and is in charge of assisting with/carrying out the Township multi-year systematic road improvement program and maintaining Township roadway. The road improvement program involves the scheduling of improvements based on several criteria, including need, severity of issues, and budgetary limitations. The Board of Supervisors conducts a survey of all Township roads twice a year, which identifies road conditions per segment of roadway. The Township participates in a multi-municipal

cooperative with the other municipalities in the Kennett Region; participating municipalities share materials and manpower to offset the cost for larger projects and for multi-municipal projects including road maintenance. To minimize the cost of developing numerous and possibly repetitive bids for individual municipal projects, the cooperative works together to instead develop a single unified bid that covers multiple improvement projects within the Region.

Scenic Roadways

Recognition and protection of scenic roadways is part of the Township’s policy. Chapter 6 addresses scenic resources and provides more information about Township policies regarding such.

Pedestrian and Bicycle Circulation

While a majority of residents drive to work, many trips within the Township could be accommodated via foot or bicycle if improvements to the circulation system were implemented. Improving the Township’s bicycle and pedestrian network would provide an opportunity for increased independent mobility for more residents. A complete network of pedestrian (sidewalks, paths, trails) and bicycle facilities and its connectivity to regional trails and bikeways is an important component in encouraging greater pedestrian and bicycle movement in and around the Township.

Figure 9-4: Kennett Bikeway Project



Sidewalk coverage in the Township is very limited (Map 9-2). There is a missing link between the shopping opportunities along Route 1/Baltimore Pike and the population center of Kennett Square Borough, which has a complete sidewalk network. In addition, there is little pedestrian or bicycle connectivity between residential and other (recreation, agricultural, service) areas of the Township.

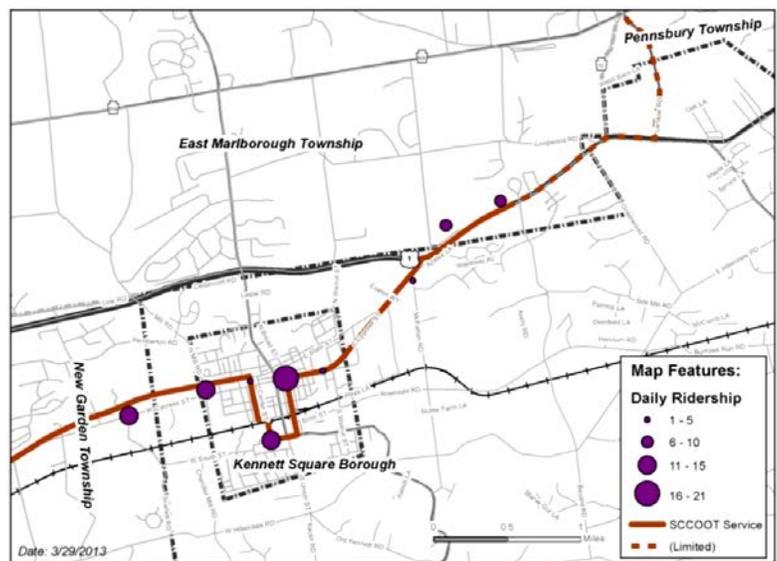
Trails are another aspect of pedestrian and bicycle circulation. Existing local trails and paths are also limited in the Township. ‘ACTIVATE Kennett Square’ program has lead an initiative to install a path connecting Kennett Square Borough to the New Garden Shopping Center along Cypress Street, for the main purpose of allowing better access for shopping trips. A short portion of this path would be in Kennett Township.

The Township has begun to address this topic via the Kennett Pike Bikeway Project, intended to enhance the Route 52 corridor and connect the Longwood Gardens area to the Brandywine Valley National Scenic Byway in DE. The Township also created (in 2014) a Trails and Sidewalks Committee to address pedestrian circulation for both commuter and recreational purposes. To assist in this effort, the Township hired a planning consultant. The Committee has mapped existing and proposed trails and sidewalks as related to locations of development and protected open space and recreational uses, and is discussing planning for a future pedestrian network (sidewalks, paths, trails connections).

Public Transportation

Public transportation can provide alternatives to single occupancy vehicle trips for people who live and/or work in the Township. However, transit options are limited and ridership numbers are low in the Township (Figure 9-5). Currently, Kennett Township is served by the SCCOOT Bus, which connects Oxford to West Chester with stops in West Grove, Lincoln University, Kennett Square, and Longwood Gardens. The service runs Monday through Saturday. In West Chester, connections are provided to SEPTA routes 92 and 104 and Krapf’s Coaches ‘A’ bus. SCCOOT, a service of TMACC (Transportation Management Association of Chester County), is a partnership with the Southern Chester County Organization on

Figure 9-5: SCCOOT Ridership by Bus Stop



Transportation, a joint committee of Southern Chester County Chamber of Commerce, and Oxford Area Chamber of Commerce. SCCOOT's only stop in the Township is at the Kennett Square Medical Center (on McFarlan Road). There are multiple nearby stops in Kennett Square, New Garden, and East Marlborough. Additional transit opportunities in the larger region include Delaware Area Rapid Transit (DART) bus service to Wilmington, which has two stops just over the state line in New Castle County. DART's Route 10 bus serves the Centerville Area via Kennett Pike, and DART's Route 20 bus serves the Hockessin area via Lancaster Pike. In the past, there was a 'shortline' bus between West Chester, Kennett Square, and Wilmington that went through Kennett Township. The addition of several DART stops in the southern parts of Kennett Township, and preferably in Kennett Square and New Garden as well, could be a Township and KARPC consideration. Chester County's 2014 Public Transportation Plan explores future transit options and provides related recommendations.

Transportation Improvement Projects

Chester County Planning Commission (CCPC) Transportation Improvements Inventory (TII) is an inventory of proposed improvements submitted by municipalities to CCPC, which are combined into a single report and updated every other year, most recently in 2013. Inclusion in the TII is the first step for a project to become listed in the Delaware Valley Regional Planning Commission (DVRPC) Transportation Improvements Program (TIP). TIP is the regionally agreed upon list of priority transportation projects, as required by federal law. The TIP must list all projects that intend to use federal funds, along with all non-federally funded projects that are regionally significant. Other state funded capital projects are also included.

Table 9-4: TII and TIP Projects In and Near Kennett Township (2013)

TII PROJECTS WITHIN KENNETT TOWNSHIP			
PENNDOT MPMS #	CCPC #	PROJECT NAME	DESCRIPTION
14541*	MCF 5	US 1: Greenwood Rd to US 1 Bypass (with E. Marlborough)	Add Thru Lane in Each Direction
14484*	MCF 6	PA 41: DE to PA 926 (with New Garden)	Safety Improvements
14581*	MCN 6	US 1: PA 896 to School House Rd (with New Garden and E. Marlborough)	Reconstruction/ Interchanges
102832*	--	Kennett/New Garden joint Sidewalk Project	Install Sidewalks
14251*	CB 8^	Chandler Mill Rd over West branch Red Clay Creek	Replace or Rehab
103213*	--	Bayard Rd grade crossing	Install Railroad warning lights
	PTC 7	Octoraro Passenger Rail line (multiple)	New Passenger Rail Service
	FRR 1	Octoraro Rail Line Rehabilitation (multiple)	Replace Track and Tie/Bridges
	SB 14	PA 82 over East Branch Red Clay Creek	Replace or Rehab
	MB 41	Hillendale Rd Under Octorara Rail line	Replace or Rehab
	NC 8	Ways Lane Extension	New Collector Rd
TII PROJECTS NEAR KENNETT TOWNSHIP			
Kennett Square Borough			
	BP 38	East State St Gateway @ Walnut St	Streetscapes/Gateway
	BP 49	Red Clay Creek Greenway: Cream St to Rail line	Multi-use Trail
	SB 23	S Walnut St over Red Clay Creek	Replacement
	PR 2	Kennett Park & Ride: Race St @ Cypress St	Park & Ride Lot
	RW 10	W Cypress St: Center St to New Garden Twp	Reconstruction/ Streetscape
	RW 45	Birch St: Broad Street to Kennett Twp	Reconstruction
	INT 58	South St @ Union St	Improve Turning Radii/Reconstruct
New Garden Township			
103215*	--	Chambers Rd grade crossing	Install Railroad warning lights
	BP 7	Old Baltimore Pike Bikeway: Mill Rd to Newark Rd	Pedestrian Trail
	INT 2	Baltimore Pike @ Newark Rd	Add Turn Lanes/Safety
57664*	INT 5	Newark Rd @ Hillendale Rd	Intersection Improvements
	INT 14	PA 41 @ Newark Rd	Add Turn Lanes/Signal Upgrade
East Marlborough Township			
57684*	BP 4	PA 82 Trail: PA 926 to Doe Run Rd	Bicycle Lanes & Sidewalks
	MB 31	East Locust Rd over East Branch Red Clay Creek	Replace or Rehab
Pennsbury Township			
103210/12/14*	--	Hillendale, Hickory Hill, and Fairville Rds grade crossings	Install Railroad warning lights
	FRR 3	Wilmington & Northern Rail Line Rehabilitation	Track & Tie Replacement
	BP 13	PA 52 Bikeway	Bikeway
	BP 26	Brandywine Trail: US 1 to PA 52	Multi-use Trail
69665*	SB 7	S Creek Rd over Brandywine Creek (Twin Bridge)	Replacement

*On the DVRPC FY 2015-18 Transportation Improvement Program (TIP) ^ In 2015, the Township decided to take over ownership of the bridge, however the bridge still is on the 2015 TIP and that is why it is included in this table

TIP project types include bicycle, pedestrian, freight-related projects, innovative air quality projects, and more traditional highway and public transit projects. The TIP is developed cooperatively between state and regional agencies and is approved by the state legislature and federal review agencies including the Federal Highway Administration every other year, with the most recently approved TIP in 2014 for FY 2015-18.

Table 9-4 lists projects on the 2013 TII for Kennett Township and nearby municipalities. Projects that have made it on the FY 2015-18 TIP are marked with an ‘*’. All other TII projects in the table await consideration for inclusion on future TIPs.

There is intense competition for transportation funding in the DVRPC region as well as nationally, which reflects the inadequacy of transportation funding in general at the local, state, and federal levels. This trend is expected to continue. In Chester County alone, 441 transportation projects are listed on the 2013 TII, competing regionally for funding.

Non-traditional funding mechanisms are becoming increasingly important due to the current limits on traditional funding. Implementing new, more localized sources for transportation improvements should be considered as federal and state funding levels are anticipated to remain low for the foreseeable future.

Planning Implications

Transportation planning must maximize the interrelationship and coordination between all modes of travel to achieve an appropriate balance that serves all Township residents. In light of the existing circulation system, the key transportation and circulation related issues facing Kennett Township are:

- **Traffic** - Increasing travel times and congestion are of particular concern on U.S. Route 1 in the Township. The combination of land uses in the area and the roadway design are contributing factors. As well, there appears to be a strong correlation between the number of vehicle traffic incidents and the volume of traffic on this roadway. The recent realignment of PA Route 52 and the future widening of Route 1 in East Marlborough Township should help to alleviate congestion and improve safety. However, additional efforts in the area may be warranted and should be a consideration in future transportation planning efforts.
- **Roadway Improvements** – There are high concentrations of vehicular traffic incidents on some suburban and rural roadways throughout the area. Safety of roadways is a priority. Key intersections and corridors that should be considered in future transportation planning include Kaolin Road, Route 52 at Route 1, and Creek Road at Hillendale Road. Bayard Road at Rosedale Road, Baltimore Pike near the Borough, Chandler Mill Road at Hillendale Road, and McFarlan Road at Hillendale Road and at Baltimore Pike may also be considered. In addition, the Township could engage KARPC in possible regional discussions addressing improvements to Route 1 bypass/Route 82 interchange in East Marlborough, and Route 1 bypass between/in the vicinity of its’ interchange with Route 1 business/Baltimore Pike and the North Walnut Road area.
- **Mode-share** – The large percentage of individuals relying solely on personal automobiles is a contributing factor to many transportation related issues in the Township. A more balanced share of trips between automobiles, bicycles, pedestrians, and transit can help to alleviate issues such as congestion. However, infrastructure and facilities are lacking to allow for more people to walk, bike, or ride transit.
- **Scenic Roads** – Kennett Township has long celebrated its scenic, rural, and historic characteristics, particularly those of its roadways. However, land development and ever increasing traffic threaten these valuable features and resources. Chapter 6 further details strategies for protecting scenic resources.

Recommendations

This Plan Chapter recommends a variety of improvements to the transportation and circulation network. Each has been identified with the intention of increasing efficiency, effectiveness, and diversification of circulation options in the Township. Recommendations strive to address topics including regional coordination, land use as related to circulation, traffic congestion, roadway infrastructure, pedestrian and bicycle facilities and connectivity to the larger circulation system, and transit connections. Recommendations are divided into general policies, improvements to roadways, bicycle and pedestrian facilities/infrastructure, and public transportation options. This transportation and circulation improvements plan (summarized in Map 9-3) will require determination by the Township in its implementation. This transportation improvements plan aims to address both current and future circulation needs of township residents, businesses, property owners, and visitors to ensure a transportation system that is sustainable and effective into the future.

General Policies

9-1 Continue coordination at a regional level on transportation issues and concerns.

Several of the recommendation in this Plan, such as roadway improvements, public transportation, and pedestrian facilities, could have greater success in their implementation when coordinated at a regional level. Submitting proposed projects for the County TII is vitally important if a project is expected to receive funding via the regional TIP. Continual communication with New Castle County, the State of Delaware, and adjacent municipalities/KARPC in Chester County is essential for continued and current monitoring of changes in traffic patterns, types, volumes, speeds, and coordinated improvements needs and efforts. Communication with transit providers in the larger region (TMACC, SEPTA, DART) is important in working to increase public transit opportunities. Work with KARPC to encourage businesses to reduce traffic and congestion via employees working at home or 'hoteling'.

9-2 Advance priority roadway, bicycle, pedestrian, and public transportation projects.

The Township should continue to strive to advance priority projects that improve the effectiveness and efficiency of the circulation network. Communicating these priority transportation needs to the County, PennDOT, and DVRPC is a key step in securing state and federal transportation funding. The Township should also explore alternative options to these traditional funding sources, as at this time (2013), and into the foreseeable future, traditional funding is limited. (See recommendation 9-6)

9-3 Develop a defined process in the Township for reviewing and updating the Chester County Transportation Improvements Inventory.

The Township should continue to identify priority road, bike, pedestrian, and public transit projects that improve the overall effectiveness and efficiency of the circulation network. However, the Township does not have a defined process in place by which to do this, and so how and by whom projects are identified have potential to change from year to year. The Township PC should work with the Manager, Supervisors, and other appropriate committees to devise and implement such a process, which should be completed at least every two years to match the update timeframe of the TII.

9-4 Consider updating the Township Official Map to delineate desired location, and to extent possible the character, of roadways, public transit amenities, and pedestrian and bicycle facilities in the Township.

Official Maps, enabled under the PA MPC, serve a valuable function for a municipality, providing options without requiring an immediate commitment on the part of the municipality. Identification of additional, revised, or improved infrastructure corridors and/or amenities via an amendment to the Township Official Map should be considered. Such corridors or amenities could include delineating a general alignment for additional desired future trails or identifying desired roadway improvements related to future transit facility and amenity needs.

9-5 Adopt design standards for roadways based on local context.

Coordinated land use and transportation planning evaluates the relationship between transportation facilities and adjacent land uses. Roadway Functional Classification in concert with the local context should be considered when planning for the design of transportation facilities. Map 9-1 displays functional road classifications in relation to Landscapes2 growth area and rural areas, in order to provide a generalized view of context and road types. The Township should consider reviewing SLDO standards in relationship to the standards in Table 9-5 and consider revising SLDO standards, as appropriate.

9-6 Seek funding from traditional and non-traditional sources and consider alternative local funding source options for transportation improvement projects.

Given that regional transportation needs far outweigh available funds, the Township must remain proactive in advocating for its projects and seeking funding from various possible sources. As of 2013, federal and state transportation (a.k.a. “traditional”) funding is very limited and will continue into the foreseeable future; thus, consideration should be given regarding other funding options for transportation improvements. For example, local funding alternatives can include:

- Developer required improvements through land development
- Transportation Grants
- Revenue Generation Mechanisms
- Public-Private Partnerships

DVRPC has a comprehensive list of funding and implementation tools in their Municipal Resource Guide. DVRPC’s website (<http://www.dvrpc.org>) is updated regularly and includes newly announced grant and program opportunities.

Table 9-5: Roadway Design Standards

LAND USE CONTEXT	GROWTH AREAS (INCLUDING LANDSCAPES2 URBAN, SUBURBAN CENTER, AND SUBURBAN)					
	EXPRESSWAY	PRINCIPAL ARTERIAL	MINOR ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL DISTRIBUTOR
DESIRED OPERATING SPEED	55-65 MPH, 40 MPH min	30-55 MPH	25-55 MPH	25-55 MPH	25-30 MPH	20-25 MPH
TRAVEL LANE WIDTH	12-14'	10-12' depending on # of lanes, bike lanes, shoulders, etc.			9-11'	
SHOULDER WIDTH	8-10'	4-6' (if no bike lane); 8-10' in suburban commercial contexts			4-6' (if no bike lane)	
PARKING LAND WIDTH	Prohibited	Recommended in urban landscape; evaluate feasibility in suburban (7-8' parallel)				
BICYCLE ACCESS: - BIKE LANES 5-6' WIDTH W/IN RD SHOULDER - SHARED FACILITY 14' MINIMUM LANE WIDTH	Evaluate Separate Facilities	Consider bike lane or shared design; prioritize Bicycle PA routes, CCPC bike network, and connections to regional destinations			Evaluate shared road design	
SIDEWALKS	n/a	Recommended (4-8')				
ACCESS MANAGEMENT	n/a	Strict control, especially in commercial corridors		Moderate access control	As applicable	
TRAFFIC CALMING	n/a	Treatments include: gateway treatments, reduced travel lanes/widths, medians, street trees		Treatments include: on-street parking, crosswalk treatments, and strategies for Arterials	Treatments include: speed tables/humps, and strategies for Arterials and Collectors	
NETWORK DESIGN/ CONNECTIVITY	n/a	High degree of connectivity/ grid-like pattern; avoid cul-de-sacs; construct stub segments for future connections				
TRANSIT	n/a	Bus shelters, pull-offs, sidewalk crossings, and connections to adjacent land uses				

LAND USE CONTEXT	RURAL AREAS (INCLUDING LANDSCAPES ² RURAL, AGRICULTURAL, NATURAL, AND VILLAGE CENTERS)					
	EXPRESSWAY	PRINCIPAL ARTERIAL	MINOR ARTERIAL	MAJOR COLLECTOR	MINOR COLLECTOR	LOCAL DISTRIBUTOR
DESIRED OPERATING SPEED	55-65 MPH, 40 MPH min	45-55 MPH	35-55 MPH	35-55 MPH	20-35 MPH	20-30 MPH
TRAVEL LANE WIDTH	12-14'	11-12' depending on # of lanes, bike lanes, shoulders, etc.			10-11'	9-11'
SHOULDER WIDTH	8-10'	8-10'	8-10'	4-8'	4-8'	2-8'
PARKING LAND WIDTH	Prohibited	n/a	n/a	n/a	n/a	n/a
BICYCLE ACCESS: - BIKE LANES 5-6' WIDTH W/IN RD SHOULDER - SHARED FACILITY 14' MINIMUM LANE WIDTH	Evaluate Separate Facilities	Prioritize BicyclePA routes, CCPC bike network, and connections to regional destinations				Evaluate shared road design
SIDEWALKS	n/a	Should be considered in Village, within developments, or connecting developments where appropriate (4-8')				
ACCESS MANAGEMENT	n/a	Strict access control, especially within villages and critical intersections	Moderate access control, especially within villages and critical intersections		As applicable	
TRAFFIC CALMING	n/a	Along specified corridors, within villages, or at major intersections				
NETWORK DESIGN/ CONNECTIVITY	n/a	Connections between arterial network desirable when feasible; construct stub segments for future connections				
TRANSIT	n/a	If present, provide bus shelters, pull-offs, sidewalk crossings, and connections to adjacent land uses				

9-7 Review land use controls to ensure roadway, sidewalk, and trail standards are current.

Technical standards are evolving, particularly for sidewalks and trails. Periodic review of regulations related to roads, sidewalks, and trails as well as public transit amenities, bicycle facilities, and pedestrian access will best position the Township in addressing land use changes and proposed development. Consider revising ordinance definitions to improve consistency with surrounding municipalities/Kennett Region.

Roadways

9-8 Implement traffic mitigation strategies on U.S. Route 1.

U.S. Route 1 is by far the most highly traveled roadway in the Township. A closed loop signal system is planned along the length of Route 1 from Route 202 to Kennett Square Borough. Route 1 should continue to be evaluated to ensure that its high volumes of traffic efficiently as possible flow through the Township. The Township should continue to coordinate with Pennsbury, East Marlborough, and New Garden Townships on this matter. Accommodating other transportation modes, such as bicycles, pedestrians, and public transit would greatly improve the functionality of Route 1 by serving to reduce vehicular traffic and thus its congestion.

9-9 Coordinate with PennDOT and DVRPC to identify and implement improvements to Kaolin Road.

Kaolin Road serves as a major collector in the Township and carries thousands of vehicles daily. PennDOT indicates a high number of vehicular incidents along the southern segments of Kaolin Road. To address this issue, in 2009/10, the Township undertook curb and pavement improvements, which the Township police indicate has since reduced side-to-side and head-on vehicular collisions. Since this is a highly traveled corridor, the Township should continue to monitor it with special attention to the intersections at Marshall Bridge Road, Bucktoe Road, Chandler Mill Road, Caldwell Lane, and to a lesser extent in the vicinity of Woodbridge and Pennfield Drives. Also, the Township could consider working in the future with New Garden Township and PennDOT on potential improvements to Kaolin Road at PA Route 41 in New Garden. The Kaolin Road corridor may provide an excellent candidate for a DVRPC Road Safety Audit, and the Township can coordinate with CCPC as a starting point for such a study. The Township should

then coordinate with PennDOT, New Garden, and DVRPC to identify and implement improvements for this corridor.

9-10 Identify and implement improvements to the Rosedale Road/Mcfarlan Road intersection.

PennDOT indicates a high number of vehicular incidents at the intersection of Rosedale Road and Mcfarlan Road, especially in considering that both roads carry relatively low daily traffic volumes. To address and improve this intersection, the Township installed a 4-way stop treatment and flashing lights. The feasibility of installing a traffic signal is being considered and given current and proposed land developments occurring in the vicinity the intersection will likely be signaled within the next few years.

9-11 Identify and implement improvements to the Creek Road/Hillendale Road intersection.

Though less so than other identified intersections, there is a notable number of vehicular incidents reported at this intersection. Creek Road is a state road (Route 82) and thus the Township would need to work with PennDOT to identify low cost safety improvements at this intersection.

Pedestrian and Bicycle Circulation

9-12 Improve cycling conditions on Route 52 to the PA/DE Line and on Route 1 to Longwood Gardens.

The Kennett Pike Bikeway project is a plan to improve bicycling conditions along Route 52. Currently in construction, shoulders are being improved along Route 52 from Route 1 to the PA/DE State Line. Moving forward, the Township could consider the addition of bicycle lane legends. This is dependent on the status and required provisions of PennDOT’s Bicycle Occupancy Permit. Additionally, the Township should coordinate with Pennsbury in support of completing the missing link in Pennsbury to the Route 52 corridor to connect all the way to the DE State line; this project is listed on the 2013 TII. The Township should also continue to coordinate with Longwood Gardens and PennDOT in determining how to best align a cycling connection/extension from Route 52/ Kennett Pike Bikeway along Route 1 to Hamorton and Longwood Gardens.

9-13 Improve pedestrian and bicycle facilities along Baltimore Pike/Route 1.

Baltimore Pike/Route 1 and the surrounding land uses between Kennett Square Borough, Longwood Gardens, and Hamorton Village have been designed and are oriented exclusively for the use of motor vehicles. Currently, there are very limited pedestrian facilities along Baltimore Pike/Route 1. Even so, many individuals walk this corridor to get to work, shopping, services, and appointments. Though much of this corridor lies within East Marlborough Township, Kennett Township should take a proactive role to coordinate and provide input, as appropriate, for pedestrian and bicycle improvements along this busy corridor. The Township through the Kennett Bikeway project should continue investigating the potential for this connection, with the cooperation of Longwood Gardens and PennDOT.

9-14 Work with PennDOT and future developers for pedestrian access along West Cypress Street.

Many individuals currently brave the high speeds and traffic volumes to walk along West Cypress Street between Kennett Square Borough and the New Garden Town Square shopping center in New Garden Township; a portion of this route passes through Kennett Township. An appropriate pedestrian-friendly means for individuals to make this trek is needed. ‘ACTIVATE Kennett Square’

has been leading conversations between Kennett Township, Kennett Square Borough and New Garden Township to improve the current conditions. They have solicited the assistance of CCPC to perform some preliminary field measurements and draft some possible solutions. The Township has partnered with New Garden and Kennett Square to perform an engineering study and define a preferred alternative.

9-15 Consider pedestrian connections to serve recreational and commuter purposes.

The Township created (in 2014) a Trails and Sidewalks Committee to address pedestrian circulation for both commuter and recreational purposes. With the help of a planning consultant, the Committee mapped existing and proposed trails and sidewalks as related to locations of development and protected open space and recreational uses, and is discussing specific planning for a future pedestrian network that would include sidewalks, paths, and trails. These can serve as transportation corridors for individuals who choose to walk or bicycle and for those who do not have access to automobiles for personal use. The Township should continue to explore pedestrian network opportunities to connect population concentrations in the Township with employment, commercial, and recreation opportunities along Route 1 and in Kennett Square Borough.

9-16 Improve connections to public transportation opportunities.

Public transportation is most effective in areas of dense population since a greater number of potential transit users are close to transit stops. Particularly around Kennett Square Borough, additional pedestrian and bicycle connections from Kennett Township neighborhoods to TMACC's SCCOOT bus should be explored. There may also be a future opportunity for DART to extend service into PA. Many Chester County residents commute to the Wilmington area, so the Township should monitor any discussions regarding DART service extensions, e.g. having a stop on Route 52 in the Township would be a good start to increasing public transit connectivity.

9-17 Improve the 'bikeability' of roads throughout the Township.

There are few safe and easy bicycling routes in the Township. Using CCPC's bikeability mapping as a guide (Map 9-2), the Township could aim to improve cycling conditions on select roadways. These improvements would provide a network for individuals to bike between their homes and points of interest. Improving cycling conditions does not always mean widening roadways. Table 9-5 can be referenced when considering roadway design in various contexts.

9-18 Evaluate current conditions and consider developing a specific bicycle and pedestrian plan.

The Township should consider developing a comprehensive bicycle and pedestrian plan to identify future non-motorized facility improvements. This effort could be coordinated with the Kennett Region to produce a regional bicycle and pedestrian plan. The plan should include improvements to specific roadways and intersections. A good way to develop a baseline inventory is to complete a League of American Bicyclists Bicycle Friendly Community Application. Completing an Application would help to define areas that need improvement in the Township. As of 2014, the Township retained a planning consultant to further investigate specific pedestrian opportunities and develop further related planning.

Public Transportation

9-19 Coordinate with TMACC to ensure SCCOOT best serves the Kennett community.

Kennett Township should continue open communication with TMACC to ensure that the SCCOOT bus provide an effective service in the Township. Southern Chester County Housing and Transportation Options Study (2013) identifies transit access issues and provides implementable

recommendations for meeting regional transit needs. The Study can serve as a reference in regional conversations about SCCOOT and other transit opportunities.

9-20 Coordinate with CCPC on future public transportation opportunities.

CCPC recently completed a Chester County public transportation plan. The goal of that plan is to improve transit service to all areas of the County. The Township via KARPC should continue coordinate with the County to identify options for improving transit service in southern Chester County. One such recommended option is to develop a bus route, including logical accessible stops in the Kennett Region, from the Kennett Region to Wilmington. This proposed new bus route may most logically be serviced by DART.

9-21 Promote TMACC’s Ride for Health and the County Rover programs.

By partnering with TMACC and Chester County, the Township can help to promote Ride for Health and Rover transit services. The Township can serve in a function of communicating the benefits of the programs to local healthcare providers, non-profit organizations, businesses, property owners, and residents. The Ride for Health program in the Township comes out of Jennersville, using two to three cabs from a taxi cab company out of Pottstown.

9-22 Coordinate via KARPC to attract a licensed taxi service to the region.

Currently, there is no taxi service licensed by the Public Utilities Commission in southern Chester County. The Township could work with neighboring municipalities, non-profits, and local businesses to attract a taxi company. A taxi service would fill the void between those individuals who do not qualify for government subsidized programs and do not own vehicles themselves.