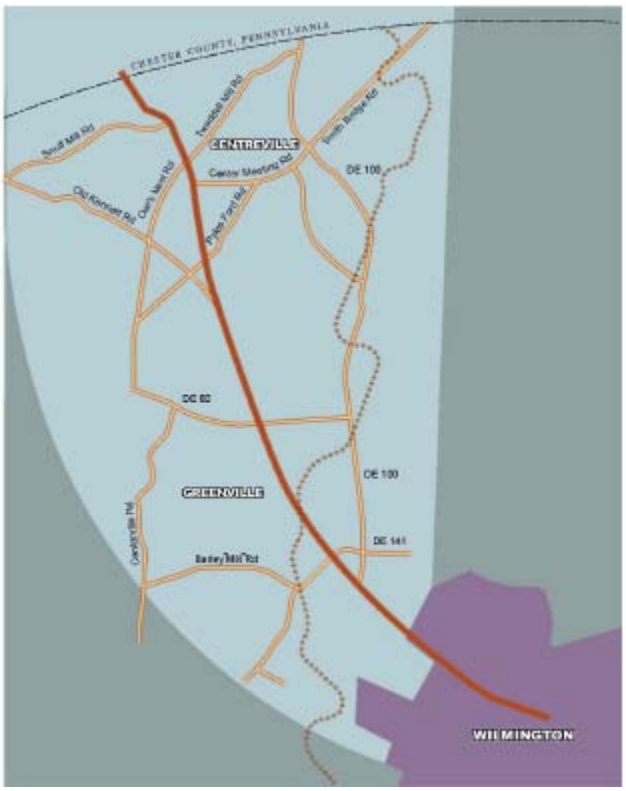
7.1 Kennett Pike Background: Form and Function



7A - Kennett Pike Route and Context

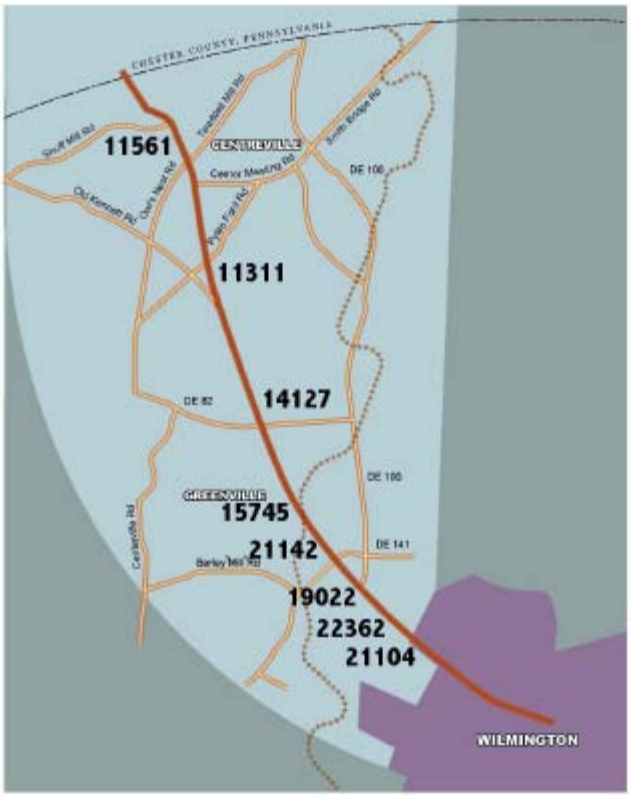
Delaware Route 52 known locally as Kennett Pike transitions from an urban arterial in the City of Wilmington to a two-lane rural highway north of Greenville as it approaches the Pennsylvania state line. Along the way, it passes through two historic communities: Greenville and Centreville. Over the years, Greenville s original character has been supplanted by conventional suburban strip development, partly contributing to the need to convert Kennett Pike to a four-lane highway through the community. Conversely, Centreville s town center still retains its original character and has not yet attracted the strip development that has encompassed Greenville. This integrated transportation and urban design vision plan is a key step in preserving the valued character of the historic 250-year-old Centreville community.

7B - Kennett Pike "Rural" Section

From just north of Greenville to the state line, Kennett Pike exhibits a two-lane rural section posted in most areas for 50 mph. Through the Village, the posted speed is reduced to 35 mph and curbs are added, but the general section dimensions do not change. Based on the feedback received at stakeholder interviews, most motorists do not appear to be respecting the 35 mph speed limit and are instead continuing to travel at a faster rate through town (the 85th percentile speed through this section is 45 mph). Although strong enforcement is sometimes very effective (as in the nearby town of Elsmere), variations in the design of the roadway section to reflect the change in speed limit (to be explored in this report) also represent an opportunity to affect travel behavior.

7C - Kennett Pike "Village" Section

Route 52 is designated a principal arterial and plays a large role in carrying commuters and commercial traffic from Chester County PA to multiple employment centers in the Wilmington area. Average Annual Daily Traffic (AADT, 1999) which represents the number of vehicles traveling the roadway in both directions on a typical day is approximately 21,000 at the Wilmington city limits and remains near 20,000 to Greenville. Further north, traffic figures begin to tail off, to approximately 15,000 AADT between Buck Road (Road 265) and Delaware Rt. 82, then dropping to less than 12,000 between Old Kennett Road (Road 243) through Centreville to the Pennsylvania state line.



7D - Kennett Pike Average Daily Traffic (Source: DelDOT)

Kennett Pike originated as a toll road with the primary role of carrying commuters and commercial traffic between Chester County and the City of Wilmington. These demands on the roadway still exist today. A successful traffic calming plan for Kennett Pike would respond to the concerns of residents and business owners along the route while not precluding the roadway from continuing to serve its historic and ongoing function. This entails both implementing design techniques that control the speeds of motorists and protect pedestrians, as well as providing viable alternatives to automobile travel that could reduce the vehicular demand on the corridor.

Many residents also expressed concern about the operations of several intersections along the route, specifically:

a. Kennett Pike and Snuff Mill Road
b. Kennett Pike/Twaddell Mill Road/Owls Nest Road
c. Kennett Pike and Center Meeting Road

These intersections are discussed in detail in Section 7.3.

7.2 Kennett Pike Village Section: Issues and Concepts

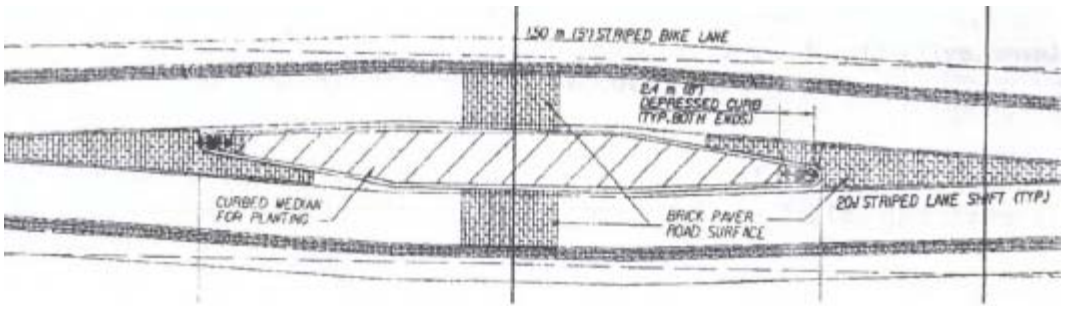
Residents and business owners have expressed numerous specific concerns regarding traffic operations and pedestrian safety along the main stretch of Kennett Pike through Centreville Village, particularly:

a. **Traffic Speed:** The posted 35 mph speed limit does not successfully offset the highway-like design parameters of the roadway, despite efforts at enforcement.
b. **Traffic Volume:** A steady stream of traffic travels through the Village during the peak periods, often causing delays on intersecting side streets.
c. **Sporadic Traffic Movements:** The prevalent practice of passing left-turning vehicles on the right in the bicycle lanes creates a notable safety hazard for motorists, pedestrians, and bicyclists nearly unanimously expressed by each of the interviewed stakeholders.
d. **Pedestrian Discomfort:** The high speeds, lack of defined slow points for crossings, and haphazard traffic movements limit the attractiveness of the Village as a pedestrian center.

Individual comment summary forms from study participants are included in Appendix A.

7E - Oft-Violated Traffic Regulation

The community s gateway project which entails the installation of a landscaped median as illustrated in Figure 6 at either end of the Village is a step in the right direction with regards to segmenting Kennett Pike into distinguishable speed zones, in effect enclosing the Village section of the roadway. Ensuring the appropriate behavior of traffic between these gateways is a major focus of this study, to the degree that pedestrian, bicycle, and local traffic circulation goals can be met. On-street and off-street parking options are also directly affected by the traffic flow characteristics along Kennett Pike. The gateway project has been a joint effort among DelDOT, WILMAPCO, and the Centreville Civic Association.



7F - "Gateway" Preliminary Design

With traffic calming elements in place at the village gateways, it is important to extend the slower-speed image of Kennett Pike through the Village. The present cross-sectional characteristics of Kennett Pike through Centreville Village are indiscernible from those of the rural segments on either side, offering little incentive for slower travel besides fear of a speeding ticket.

7G - Existing Kennett Pike Village Section

With the village framed at the intersections with traffic calming elements, which are included (in varying degrees) in each of the proposed intersection reconfigurations, bulb-outs along the Village segment would help narrow the perception of the roadway through town and hence differentiate it from the rural stretches to the north and south. The effect of these bulb-outs, as shown in Figure 8, would be to add a permanent element to the parallel parking lane, thus ensuring a continuous narrowing presence along the roadway. These bulb-outs could be landscaped with street trees to further enhance the effect of narrowness and enclosure.

7H - Kennett Pike with Bulb-outs and Trees

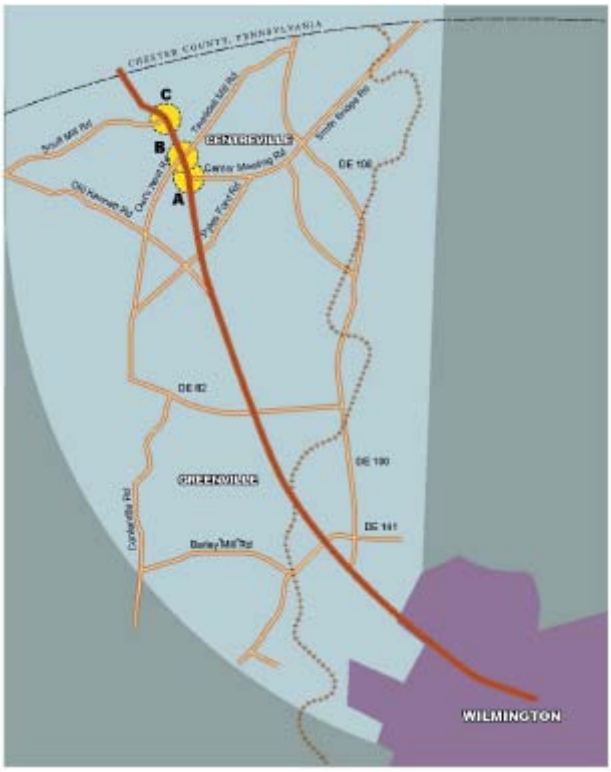
This concept for the gateway-to-gateway length of the village is illustrated in Figure 9. The non-monetary cost of bulb-outs is a loss of parking, which could be replaced in other locations, such as in shared back-of-property off-street lots consistent with the Village plan. The approximate number of on-street parking spaces that would be lost with the bulbout distribution as illustrated in Figure 9 would be 14 to 16 spaces, plus those lost due to main intersection modifications (see Section 7.3). Concepts for replacing these spaces in shared back-of-property lots are illustrated in the Land Use and Urban Design section of the report.

Pedestrian and bicycle safety issues are paramount in this section of Kennett Pike. The benefits to these users of the traffic calming concept presented here are the following:

a. Bulb-outs with landscaping would add enclosure to the roadway by reducing the overall effective paved width and introducing a vertical element to the edges of the streets. This also makes the Village section distinctly different than the rural section, all of which would help to reduce the prevailing speed of traffic through the Village.
b. The bulb-outs would add a permanent element to the shoulder, eliminating the freedom for motorists to pass turning vehicles at high speed on the right, which would help to protect both bicyclists and pedestrians.
c. The bulb-outs would create a clear separation and, in some locations, a tangible permanent buffer between the travel lanes and the sidewalks.
d. In conjunction with designated crossing locations, bulb-outs would reduce the paved area to be traversed by pedestrians crossing Kennett Pike (by the width of the two shoulders). They also make the crossing more manageable by slowing traffic speeds and eliminating high speed passing maneuvers on the right.
e. The bicycle lane would continue in its present configuration, not intruded upon by the bulb-outs. Bicyclists would continue to have their own dedicated lane yet with slower, more controlled automobile traffic beside them.

The pedestrian in particular is a key element to the overall vision plan, since a main focus of the plan is to re-create the walkable town structure that once existed here. Although the original buildings are mostly still in place and at a pedestrian scale, the speed and noise of traffic, along with the lack of sidewalk buffer and safe pedestrian crossings, makes it currently rather unpleasant to stroll through the town. The traffic calming plan for Kennett Pike would represent the reversal of this, supporting the ultimate vision of a walkable country town.

7.3 Intersections Issues and Options



7J - Critical Centreville Intersections

The main intersections of concern along Kennett Pike through Centreville, from north to south, are:

A. Snuff Mill Road
B. Twaddell Mill Road / Owls Nest Road
C. Center Meeting Road

Although each intersection has its own unique issues, a common concern expressed throughout the charrette process was that, for all three of these intersections, motorists pass vehicles on the right in the bicycle lane when cars are stopped to make left turns, despite signs that clearly prohibit this passing movement. This is a problem that was noted almost unanimously by each of the interviewed stakeholders. There are multiple factors contributing to this behavior: the lack of a left-turn storage lane; the presence of a bicycle lane and wide shoulder via which this maneuver can be made; and, inconsistent enforcement.

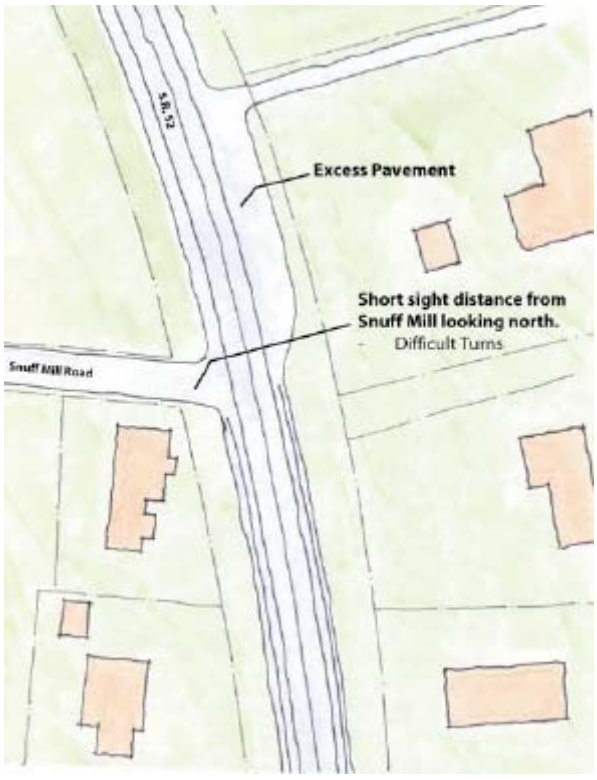
Other difficulties that were expressed are: Side street movements are often difficult and/or unsafe, due to high Kennett Pike traffic levels or inadequate sight distances; and, high speeds along Kennett Pike through these intersections threaten the safety of pedestrians, bicyclists, and motorists alike. The following concepts respond to these concerns and account for very preliminary technical analysis only. Supporting field observations were conducted to verify that the expressed concerns were not purely perceptual but, in fact, very legitimate. The purpose of the following discussions is to highlight and articulate concepts generated by the community through the charrette process to address their own concerns. Further technical analysis and a closer examination of regional function are required before any of these options progresses to the design stage.

The treatments conceptualized through the charrette process and potentially available for these intersections are:

a. Full signalization;
b. Roundabout, island, or other centerline treatment; or
c. Existing arrangement but with turn bays, bulb-outs, and other supporting elements to make it impossible or unnecessary for vehicles to pass on the right.
d. Do nothing.

DelDOT will further analyze transportation treatments and seek additional public input prior to selecting treatments for implementation.

7.3.1 Snuff Mill Road



7K - Snuff Mill Road Intersection Issues (based on community feedback)

The main concerns with the intersection of Kennett Pike with Snuff Mill Road, based on community feedback but not at this stage verified through detailed engineering studies, are:

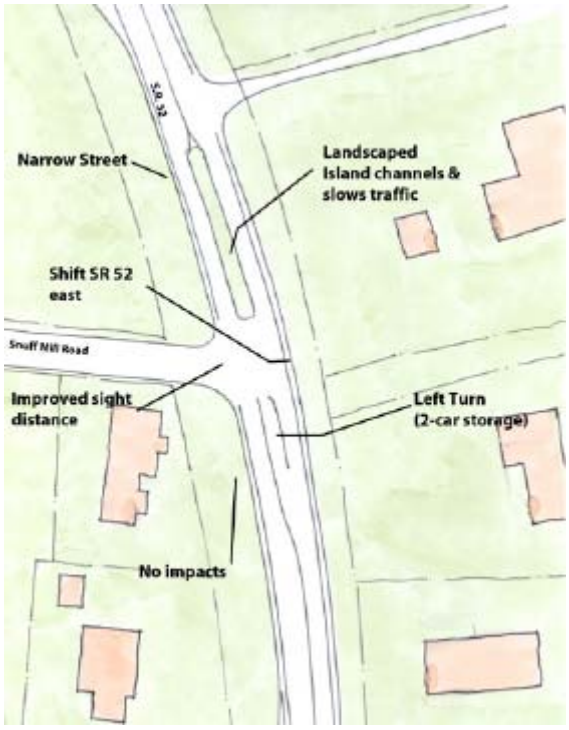
- SIGHT DISTANCE, particularly for turns *out* of Snuff Mill Road onto Kennett Pike in either direction;
- LEFT-TURN SAFETY, for turns *out* of Snuff Mill Road, due to the inadequacy of simultaneous traffic gaps in both directions; and,
- SPEED.

7L - Looking North from Snuff Mill Road

Options for addressing these issues are described below.

Concept A is the simplest approach for this intersection. It includes: a left-turn lane for northbound traffic; a landscaped island on the southbound approach, for the purposes of slowing cars as they travel around the curve approaching the intersection (the community gateway project serves this purpose); and, the elimination of the bus turnaround area north of the intersection.

The reason for the latter would be to reduce the overall width of pavement in this location. In general, the wider the pavement, the less visually appealing and the less discouraging to high traffic speeds. If this turnaround were eliminated, some alternate means of accommodated buses far from assured would have to be found. This would involve extension of services at least up to the middle school and perhaps into Chester County, which may in fact coincide with the longer term plans of Delaware Area Regional Transit (DART). If necessary, the elimination of this turnaround could take place after the implementation of the other recommendations.



7M - Concepts A and B - Turn Lane/Bulb-Out/Island

The addition of a left-turn lane, here as with each of the other intersections to be discussed, would eliminate the problem of illegal passing on the right. In theory, it is often the lack of a left- that helps regulate speeds and provides gaps in downstream traffic for unsignalized minor-street

that the addition of the turn lane would simply be formalizing the existing traffic pattern and

the recommendations, further study is needed to technically verify these observations to make a final

improved driver education and more consistent enforcement of the rules (although it is doubtful that the authorities charged w
to significantly change travel behavior). Note that the drawing provided here is a conceptual sketch only it does not depict specific design criteria or final taper and storage lengths. Any speed
-turn impedance would have to be addressed through the
-calming elements such as the proposed median islands and narrowed paved

does not include a traffic signal. is a variation of Concept A that assumes
-sectional features but also includes a traffic signal. Future DelDOT evaluation would need to be conducted to determine if a signal is warranted at this location, but there are distinct conceptual advantages and disadvantages to this approach that are presented here. To the degree that it is physically and financially possible**, Concepts A and B** both recommend moving the centerline of the intersection to the east to improve site distance around the hill along the northwest corner of the intersection.

The main advantages of **Concept A** (illustrated improvements with no traffic signal) are that:

a. It addresses the ubiquitous passing on right problem by removing left-turn traffic (from Kennett Pike to Snuff Mill Road) from the main traffic stream;
b. It is a quiet alternative that would not require a lot of acceleration and deceleration;
c. Little or no land acquisition would be required;
d. It is the lowest cost alternative for this intersection.

The main advantages of **Concept B** (illustrated improvements plus a traffic signal) are that:

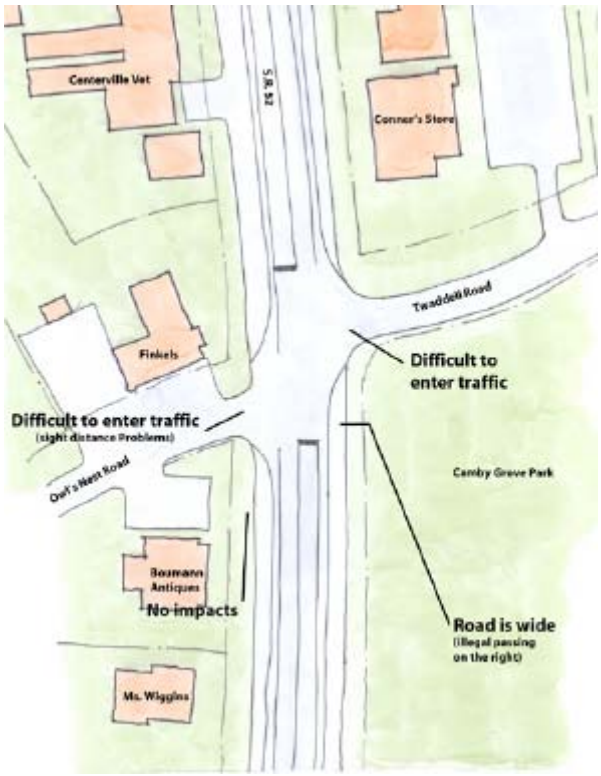
a. Right and left turns from Snuff Mill Road onto Kennett Pike are given their own phase and hence the sight distance issue is eliminated;
b. It addresses the ubiquitous passing on right problem by removing left-turn traffic (from Kennett Pike to Snuff Mill Road) from the main traffic stream;
c. Little or no land acquisition would be required.

The main disadvantages of the traffic signal alternative (**Concept B**) are that:

a. Noise levels would increase due to acceleration and deceleration;
b. A traffic signal might be perceived as a deviation from the existing rural community character, although there are already several signals to the north and south of the Village.

Additional options considered for this intersection included roundabout-type treatments and wider splitter islands, but these concepts could not be made to work given the intersection s geometric constraints.

7.3.2 Twaddell Mill Road / Owls Nest Road



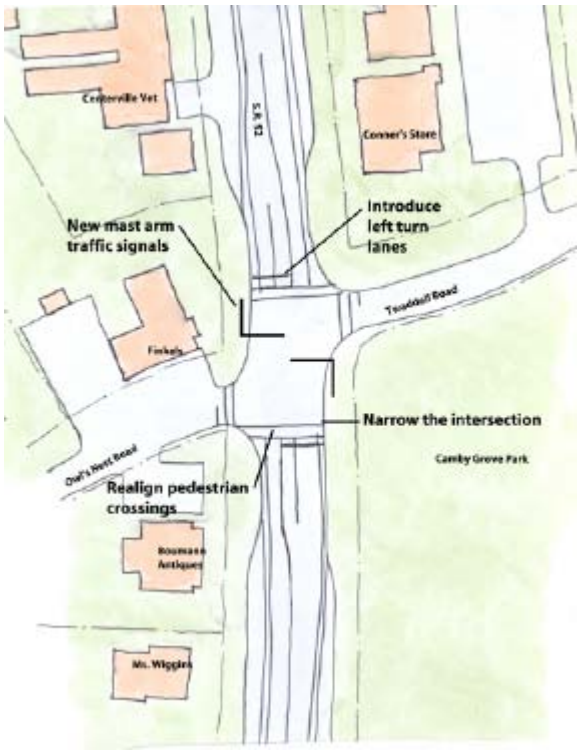
7N - Twaddell Mill/Owls Nest Intersection Issues (base on community feedback)

The main concerns with the intersection of Kennett Pike with Twaddell Mill Road and Owls Nest Road, based on community feedback but not at this stage verified through detailed engineering studies, are:

- LEFT-TURN SAFETY, particularly for turns *onto* Kennett Pike, due to the inadequacy of simultaneous traffic gaps in both directions, and the conflicting offset of the two minor streets;
- MINOR STREET STRAIGHT-ACROSS MOVEMENTS, due to the same concerns as above;
- SPEED; and,
- STACKING/PASSING ON RIGHT.

Conceptual options developed at the charrette to address these issues are described below.

7O - Looking East from Owls Nest Road



7P - Concepts A and B - Turn Lanes and Bulb-Outs

Concept A assumes that these is no traffic signal at the intersection, while **Concept B** includes a traffic signal again dependent on a future warrant analysis.

The main advantages of **Concept A** (illustrated improvements with no traffic signal) are that:

a. It addresses the ubiquitous passing on right problem by removing left-turn traffic (from Kennett Pike to the minor streets) from the main traffic stream;
b. It is a quiet alternative that would not require a lot of acceleration and deceleration for main line traffic;

c. Little or no land acquisition would be required;
d. It is the lowest cost alternative for this intersection.

The main disadvantages of **Concept A** are that:

a. Side street access to or across Kennett Pike are not optimally addressed, as these would remain uncontrolled secondary movements;
b. The bulb-outs at the corners would require the removal of 6 to 8 parking spaces, most of which are directly in front of commercial properties.

The main advantages of **Concept B** (illustrated improvements plus a traffic signal) are that:

a. Right and left turns from Twaddell Mill Road and Owls Nest Road onto Kennett Pike, as well as straight-through movement between the minor streets, would have their own protected phase, improving the ease and safety of these movements;
b. It addresses the ubiquitous passing on right problem by removing left-turn traffic (from Kennett Pike to the minor streets) from the main traffic stream;
c. There would be little or no land acquisition required.

7Q - Existing Configuration Looking North

7R - Concept B Looking North

The main disadvantages of **Concept B** are that:

a. Noise levels would increase due to acceleration and deceleration;
b. A traffic signal might be perceived as a deviation from the existing rural community character, although there are already several signals to the north and south of the Village.
c. The bulb-outs at the corners would require the removal of 6 to 8 parking spaces, most of which are directly in front of commercial properties.

As with the Snuff Mill Road drawings, the depictions of the potential treatments for this intersection are conceptual only and do not represent final geometric detail.

Concept C represents the introduction of a full-size roundabout to the intersection. To accommodate large-vehicle turning movements (based on the SU-30 design vehicle), a 40-foot diameter would be required. This would not accommodate left-turn movements of even larger vehicles, however, and thus would require a design exception from DelDOT s standard Traffic Calming Design Manual (August 2000), which specifies a diameter of 54 feet (not possible here due to property constraints).

7S - Concept C – Roundabout

The main advantages of **Concept C** are as follows:

a. Left-turn movements from the minor streets to Kennett Pike would be easier, since these motorists would, with the roundabout, have to wait for a gap in only one slow-moving traffic stream to get into the circle, then would be granted the right-of-way to complete their movements.
b. Straight-through movements on the minor streets would also be greatly simplified for the same reason noted above.

c. The effect on traffic speed reduction would be more significant and consistent than any other of the design concepts.

7T - Existing Condition Looking North

7U - Concept C Looking North

The main disadvantages of **Concept C** are the following:

a. Because the intersection would have to be entirely reconstructed, the costs of the roundabout would be higher than that of any other option.
b. There would be very significant property impacts on either side of the intersection, involving both historic properties and the park, both of which would face severe Federal policy regulations.
c. Because this option takes up more space than the others and requires a clear approach, more on-street parking spaces would be lost (on the order of 10 to 12 spaces depending on final design parameters).

Care would need to be taken to properly accommodate pedestrians and bicyclists at this intersection with a roundabout. Bicycle lanes would continue through the intersection around the outer perimeter of the circle, as shown in Figure 19, which is standard practice and fully safe provided that striping is clear and well-maintained.

Pedestrian crosswalks would be striped across or before the triangular approach islands. A pedestrian crossing at a roundabout is generally deemed safer than a typical high-speed uncontrolled

intersection, for the main reason that traffic speeds are lowered. Additionally, in this case, due to the relatively small circle, the turn angles that are created are not sharp and would not detract from visibility. However, when compared with standard signalized intersection, at which pedestrian movements are clearly defined and controlled, the roundabout crossing condition is less controlled and hence less safe.

7.3.3 Center Meeting Road

7V - Center Meeting Road from Kennett Pike Looking North

The intersection of Center Meeting Road with Kennett Pike is subject to the same potential treatments as the other two intersections of evaluation, and exhibits similar ISSUES, according to community feedback:

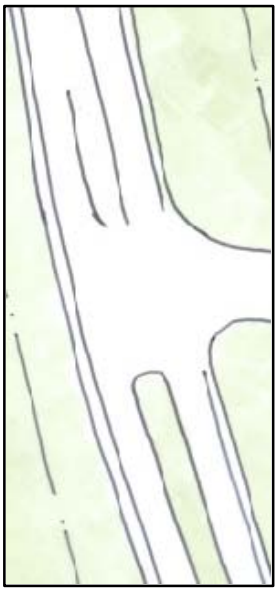
- LEFT-TURN SAFETY, particularly for turns from Center Meeting Road *onto* Kennett Pike, due to the inadequacy of simultaneous traffic gaps in both directions;
- TURNING VOLUME, from southbound Kennett Pike to Center Meeting Road in the morning, and from Center Meeting Road to northbound Kennett Pike in the afternoon;
- RIGHT-TURN SAFETY, from Center Meeting Road onto Kennett Pike during the afternoon peak, due to added chances taken by motorists stemming from the high volume of stacked turning traffic along Center Meeting Road;
- SPEED; and,
- STACKING/PASSING ON RIGHT, particularly for southbound Kennett Pike traffic during the morning peak.

Statistically, there were only five reported accidents at this intersection between 1997 and 2000 (*Source: DelDOT*), meaning that the safety concerns are largely perceptual and based upon personal experiences of close calls. Nonetheless, the amount of apparent discomfort experienced at this intersection warrants a look at potential alternative improvement concepts.

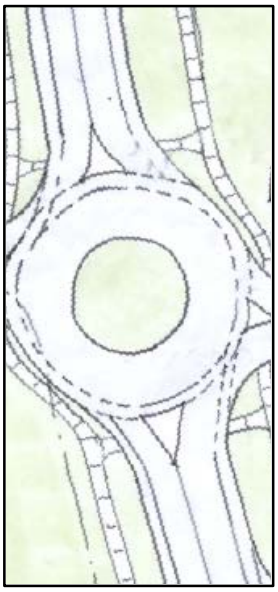
There are varying perceptions about whether the completion of construction of four lanes on Kennett Pike through Greenville will relieve pressure from Center Meeting Road. Either way, turns at this intersection will remain a significant issue. If recent Center Meeting Road traffic increases

have been due purely to Kennett Pike construction, then it follows that the completion of construction will draw more cars back to Kennett Pike, decreasing the available traffic gaps for motorists who continue to use Center Meeting Road.

Conceptual options for addressing these issues are described below.



7W - Concepts A and B - Turn Lane/Island



7X - Concept C – Roundabout

Concepts A and B include the same street level elements. They differ in that Concept B includes a traffic signal while Concept A does not. The advantages of **Concept A** are:

a. The morning southbound stacking/passing-on-right problem is reduced by providing a separate lane for left-turning traffic.
b. The costs are low compared to the other options.

In addition to these, **Concept B** has the advantage that:

a. The right and left-turn problems from Center Meeting Road onto Kennett Pike are addressed through the provision of their own signal phase and hence a better flow balance.

At the same time, **Concept B** has the significant disadvantages that:

a. Noise levels could increase as mainline traffic would have to stop and start for the signal.
b. According to some community members, a traffic signal would not match the existing rural character of the community.

The primary advantages of **Concept C** would be:

a. Overall speeds at the intersection would be reduced.
b. Morning left-turns into Center Meeting Road would be further eased since motorists making this move would have right-of-way over northbound Kennett Pike traffic.

The major disadvantages of **Concept C** would be:

a. Property acquisition would be required. These would include impacts on historic properties and thus entail a lengthy permitting process, as well as alter the community s historic resources.
b. Costs would be high relative to the other options.

7.3.4 Level-of-Service Observations

EXISTING:
TOP – AM
BOTTOM – PM

SIGNALIZED:
TOP – AM
BOTTOM – PM

ROUNDABOUT:
TOP – AM
BOTTOM – PM

7Y - Level-of-Service Observations for Unsignalized, Signalized, and Roundabout Conditions (Note: Service definitions vary for each of the three conditions.)

Level-of-service is a standard measure of delay that compares the capacity of intersection movements with the volumes of vehicles on the various approaches. Computerized methods are frequently used to analyze levels-of-service of intersection movements for unsignalized, signalized, and roundabout conditions, based on input volumes. Level-of-service is reported on an A (best) through F (worst) scale, with typical acceptable values falling in the C through E range depending on the context. *However, it must be pointed out that the level-of-service labels (A through F) are not directly comparable for different types of intersections, as they are based on different scales.*

While describing the precise definitions and implications of various levels-of-service is beyond the intentions of this report, the diagrams shown in Figure 25 illustrate how the balance of service could be affected through various intersection concepts. The levels-of-service for various scenarios are illustrated above, with four values per intersection, each letter representing the level-of-service from a particular approach direction (including driveways). Under existing conditions (left-most two diagrams), levels-of-service for Kennett Pike are very good, while movements from the minor side streets experience longer delays.

Under the signalization option, the ability to tweak the amount of green time dedicated to each of the movements would enable transportation planners to strike a new balance between levels-of-service to major and minor streets, i.e., intentionally interrupt the flow (and hence lower the service level) on Kennett Pike for the purpose of improving service on the minor streets. The roundabout option, by making it easier for minor street traffic to make left turns, could likewise help improve minor street movements but, as with the signalization option, do so at the expense of the major street. A notable exception to the roundabout s general good performance according to the general analysis presented here is the large turn movement from Center Meeting Road to Kennett Pike in the PM peak.

The purpose of presenting this summary here is to help describe the operational effects of the various intersection options. The overall challenge to be studied in greater detail in later phases of project development is to select a treatment for each of the intersections that optimally balances the goals of the community with regional transportation objectives and design requirements.

7.4 Local Collector Roads

7Z - Typical Centreville Collector Road

Based on the public workshops and meetings, most stakeholders seem to prefer the pristine existing configurations of the numerous local roads that wind their way through tight brush in the areas surrounding Centreville Village. In most cases, the landscape encroaches right up to the edge of the travel lane, creating a sense of narrowness and naturalness unparalleled in the region. Although many motorists drive sensibly through these areas, there are others who engage in unsafe driving practices, endangering themselves and others particularly in locations with blind spots and exceptionally narrow clearances.

Many of these potentially troublesome locations are well-defined and easily identifiable, generally at curves at the bottoms of hills or blind spots at hill crests and tight curves. It is therefore very possible to address these specific locations without changing the roadways overall character. Some sample problem-specific treatments are listed below:

a. Sharp curve, particularly at the bottom of a hill or just over a crested "blind spot": *Decorative short sections of guardrail at the critical locations.* These can be made primarily of timber with steel reinforcement, and need not at all resemble the standard silver metal highway guardrails commonly used to address these issues.
b. Blind spot around a sharp curve or near an intersection: *Careful removal of just enough obstructions to eliminate the visibility problem while not detracting from the overall enclosing qualities of the roadway.* One way to accomplish this would be to replace significant visual obstructions with lower-level vertical elements (such as shrubs or hedges) that define the roadway edges without adversely impacting visibility.
c. Crest of a hill on a road with narrow lanes: *Signs indicating the blind spot and expressing that motorists should take care to stay in their own lanes.* Alternatively, the crest could be removed by shaving the profile, but this threatens to alter the overall character of the roadway and should be employed only if other options prove ineffective.

While the detailed examination of specific problematic locations is beyond the scope of this report, the important point is that further study of any specific trouble spots should include the above noted measures as potential treatment options.

7.5 Long-Term Traffic Scenarios

7.5.1 Local Traffic

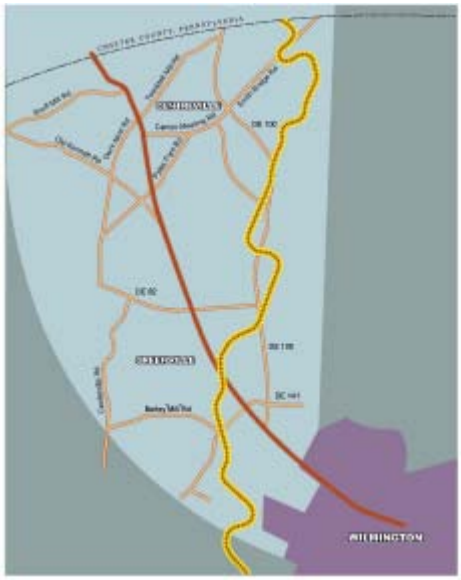
7EE - Road Systems with (right) and without (left) Supporting Local Streets

In general, it is important that new local connections are made wherever possible to ensure the long-term ability of residents to connect with local businesses without being held hostage to Rt. 52. These could take the form of a consistently interconnected local street system (through the minimization of cul-de-sacs in new developments) or simply short connectors between adjacent commercial parking lots. Where existing pieces of roadway are linked with new connections, neighborhood traffic calming measures could be applied to control speeds on existing links and to discourage long-distance cut-through traffic, as high speeds are more important to regional commuters than to local travelers.

In the absence of a well-connected supporting local network, it is conceivable that there could eventually be local pressure as well as regional pressure to expand Rt. 52, due to the absence of alternate routes to and between Centreville residences and businesses. This condition of outward pressure is denoted conceptually on the first diagram of Figure 27 with the series of black arrows. With adequate supplemental local connections, however, as demonstrated in the second diagram, it is far more likely that local residents would continue to support the maintenance of their main street as a two-lane roadway with controlled through-speeds.

Rebuilding the village segment of Kennett Pike with bulb-outs, wider sidewalks, and other features that support the creation of a comfortable walking environment (see Section 7.2) would, if successfully implemented, remove the future impetus to create a four-lane thoroughfare through town (which could comfortably fit within the existing paved width), provided that local traffic circulation is accommodated. The sketches of village design scenarios presented in the Land Use and Urban Design section include provisions for circulation of local traffic, specifically connections between village parking lots and connections to collector roadways.

7.5.2 Regional Traffic: Alternatives



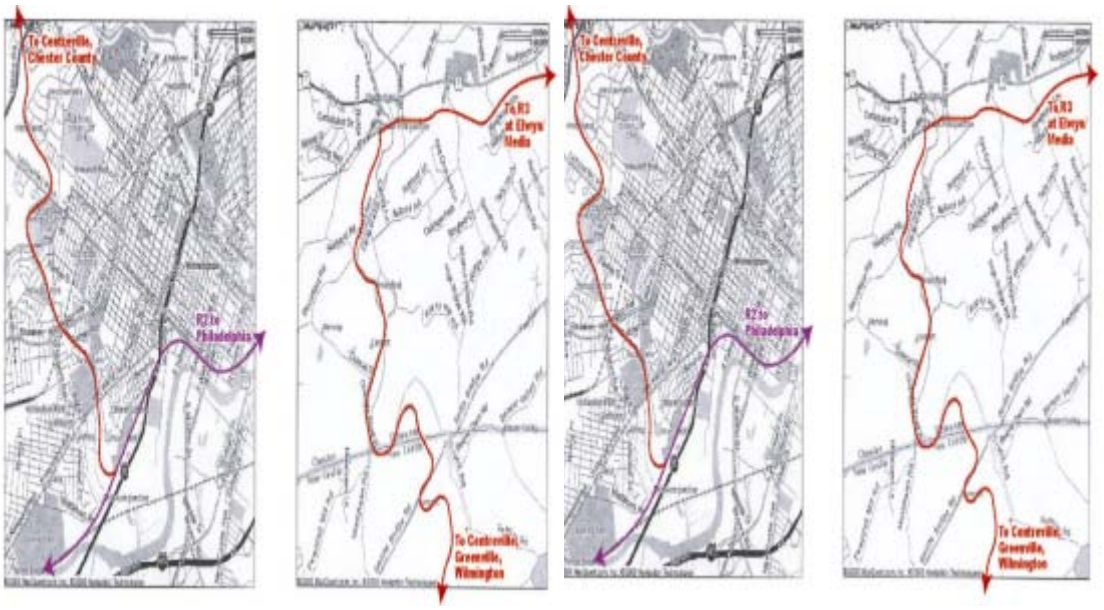
7FF - Rail Corridor

In order to ensure that regional travel demand can in some way be accommodated, it is necessary to explore both alternate *routes* and *modes* for regional travel. Although there exist some roughly parallel roadway corridors that could absorb additional traffic, these roadways are mostly very scenic and subject to the same community sensitivities as are present in Centreville. Resultantly, as regional roadways begin to reach their ultimate capacities, it is very reasonable to expect *transit* to absorb an increased share of regional commute trips, but only if new and improved services offer measurable benefits to commuters.

Express bus service between Chester County and Wilmington with limited stops at activity centers near the corridor could begin to appeal to commuters as traffic worsens. However, this appeal would be limited since there would be no *travel time* advantage of riding the bus over driving a car, due to the fact that the bus would sit in the same traffic. Vanpooling and carpooling, likewise viable shorter-term alternatives that should be explored and tested, are subject to the same constraint. The only perceivable benefits would be that the commuter could spend his travel time engaging in productive activities rather than operating his vehicle, and he would not have to pay for parking (or would share the cost). Unfortunately, these benefits are often not large enough to entice a significant share of commuters off the roadways.

To truly make transit competitive with driving, a travel time advantage is imperative, meaning that transit vehicles must in some way be separated from automobile traffic. The opportunities for this type of separation the main component of what is referred to as premium transit are: buses in dedicated travel lanes or on new busway facilities; or, rail service along an existing or assembled railway corridor. Since Kennett Pike and parallel roadways through Centreville are too constrained for dedicated lanes and since the terrain is too rugged for the construction of new bus-only roadways only the existing north-south rail corridor east of the community (see Figure 28) would remain as an option. However, this line winds through hills and has many geometric constraints compared with typical transit corridors, and is only single-tracked. Hence, it would be a significant challenge, though not necessarily impossible, to achieve running times sufficiently fast to attract commuters away from their cars. This, along with property impacts, ownership implications, road

crossing configurations, noise, potential station locations, and environmental constraints, would have to be studied in detail before it could be officially denoted as a future transit corridor.



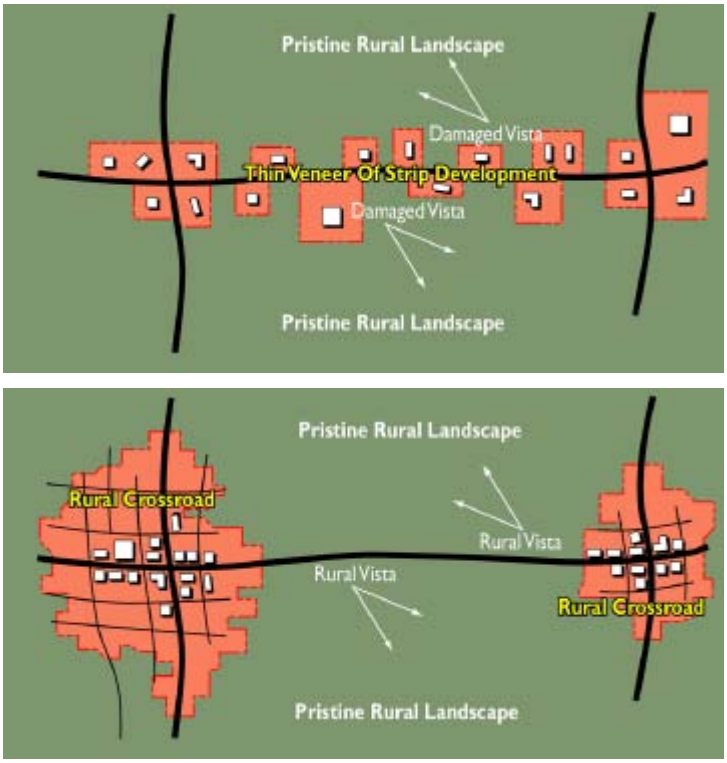
Potential Future Transit Connections: South **Potential Future Transit Connections: North**

7GG - Potential Regional Rail Transit Connections

That being said, the fact that it directly connects Wilmington and surrounding activity centers with Chester County, via Elsmere and Greenville, makes it an intriguing possibility worthy of further study. Freight operations on the line are limited, and thus it could potentially be shared with a transit provider. Technologically, such a service could be similar to SEPTA s regional rail lines, or, since maneuverability would be an issue, SEPTA s suburban trolley lines. Diesel light rail vehicles such as those to be used on the Southern New Jersey Regional Light Rail Line (Camden to Trenton) could potentially be operated on the freight line if the freight and passenger services were completely time-separated (i.e., freight service in overnight hours only). Passenger service in this corridor could be operated as an extension of, or a connection to, the R2 Wilmington line or the R2 Media/Elwyn line (via Chadds Ford Junction). The success of recent commuter rail extensions into Delaware, particularly the R3 to Newark, sets a good precedent for examining this option in detail.

Although this would be a longer-term action, it is important to recognize this option through this visioning effort. In effect, a commuter rail connection would serve as a north-south bypass of downtown Centreville, reserving additional passenger capacity in the corridor while preserving the valuable historic, aesthetic, and environmental qualities of the Centreville area.

7.5.3 Importance of Coordination with Growth Vision



Top: Uncontrolled Conventional Growth
Bottom: Town and Country Growth

7HH - Alternative Growth Scenarios

Because of the transportation implications of different forms of development, it is critical that transportation impacts are taken into account in the generation of land use plans and design guidelines. For instance, standard strip development and conventional subdivision design tend to encourage a high relative volume of local automobile travel. Without strict attention to cross-access connections or interconnected subdivision streets, this would threaten the vision of Kennett Pike as a two-lane, low-speed country road.

Each potential growth scenario has its own implications for the future of transportation in Centreville. Although it seems that less local growth would mean less future traffic congestion, this is not necessarily the case. The ultimate congestion levels on Kennett Pike would likely be comparable for no-growth or low-growth scenarios as compared with other scenarios, but with additional *regional* traffic consuming the majority of corridor capacity. Therefore, ensuring adequate supplemental local roadway and pathway connections is important for all potential scenarios.

Through good land use and design planning, including supplementary local connections, the village of Centreville could limit the projected amount of future *local* traffic on Route 52. Because alternate circulation routes would be available for local traffic, there would exist a perpetual assurance of strong local support for controlling the behavior of regional through-traffic on Route 52 in a manner consistent with residents vision for their town, i.e., relatively slow-speed and properly channeled so as to avoid dangerous passing-on-right and other illegal maneuvers that presently detract from the village s valued character.

7.6 Next Steps and Implementation

The process by which roadway and intersection modifications are made must take into account a wide variety of planning factors. The Federal and State governments employ a series of steps in order to identify worthy projects and fairly disseminate roadway improvement funds throughout the entire community. The culmination of this process is the State Capital Improvement Program (CIP), which is a list of projects to be funded and undertaken by the State highway department within a six year period. Before projects are earmarked for the CIP, however, they must be identified on a longer-range Regional Transportation Plan (RTP), which lists a coordinated program of planned projects and studies.

In order to be listed as part of the TIP, all projects must meet the State requirements with respect to performance and need. This determination entails a variety of technical analyses as well as a mandated public input and information process. These steps would build upon what has been done as part of this visioning process, and would be initiated by DelDOT once a conceptual vision has been reviewed and accepted.

The purpose of this vision plan has been to establish a general consensus on the issues at hand and on a conceptual approach to addressing them. Technical details of the various scenarios have not yet been explored in detail. These would, instead, be evaluated by DelDOT as the planning process continues. For example, with respect to intersections, DelDOT would perform a warrant analysis to determine if the addition of traffic signals at certain locations meets accepted national criteria for these types of expenditure, or if an alternate method of addressing the stated issues would be more suitable. In effect, the series of conceptual alternatives developed by the community and presented in this report will be verified or narrowed down by a more detailed DelDOT study.

Further study must also be conducted to determine the specific impacts of the various options on historic properties and environmental quality. Furthermore, the design of these intersections, as well as of the bulbouts and other recommended mainline elements, would need to be refined by DelDOT to ensure that all geometric arrangements meet DelDOT s safety, aesthetic, and operational standards. The public will be given numerous opportunities to comment on specific design elements before a final design adopted.

This vision serves as a guide for the future development and implementation of measures which address the concerns of Centreville s residents and commercial interests. It serves as an initial articulation of issues and ideas generated by the community that establishes direction for continued evaluation. Most importantly, it serves as a coordinated guiding framework for future decisions by all parties that could have a dramatic impact on Centreville s landscape.