

Integrating Transportation/Transit Planning in the Overall Planning Process

By

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Preface

As the director of the Institute for Public Administration (IPA) at the University of Delaware, I am pleased to provide this report, *Integrating Transportation/Transit Planning in the Overall Planning Process*. The University of Delaware's Institute for Public Administration worked in collaboration with the Delaware Center for Transportation and the Delaware Department of Transportation in preparing this report. The primary task of this report was to produce recommendations that will foster more transportation and land use integration throughout the overall planning process in Delaware. A matrix highlighting the perceived and realized deficiencies in transportation/land use integration was prepared based on interviews conducted with key stakeholders.

In addition to interviews, an extensive literature review was undertaken and completed. A working group meeting was held in April of 2009 to discuss the draft report. Based upon that meeting and the report, recommendations were made to address integration deficiencies and to chart a path forward.

The Project Manager was Catherine C. Smith (DTC/DelDOT) and the Principal Investigator was Edward J. O'Donnell AICP-(Policy Scientist for the Institute for Public Administration). Theodore A. Patterson was the Graduate Research Assistant who conducted the literature review, research analysis, and wrote the document. Special thanks go to Assistant Policy Specialist Mark Deshon who provided editorial support.

Jerome R. Lewis, Ph.D.
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Acknowledgements

This report covers one of the most important topics to be addressed in Delaware in the 21st century. The decisions we make in the coming years on transportation/land use integration will impact our children and their children. Throughout the course of this project, we were lucky enough to find many public officials who felt the same way, who understood the magnitude of this issue, and who want to work together constructively to broker sustainable solutions in Delaware.

The following are those who provided input on the project through conference calls and a project workshop held during the final stages of project completion. We appreciate the cooperation and feedback received, because it empowers us to provide a more meaningful policy document for Delaware's future.

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Executive Summary

The purpose of this report is to produce recommendations that will foster more transportation and land use integration throughout the overall planning process in Delaware. A trend of population growth and decentralization necessitates a proactive and aggressive approach to transportation/land use integration in Delaware.

This report will accomplish the following objectives:

<p>OBJECTIVE #1:</p> <p>Provide a matrix highlighting perceived and realized deficiencies in transportation/land use integration based on respondent interviews conducted via conference calls.</p>
<p>OBJECTIVE #2:</p> <p>Provide recommendations to address integration deficiencies.</p>
<p>OBJECTIVE #3:</p> <p>Conduct a literature review of possible policy outcomes that will improve land use/transportation integration in Delaware.</p>
<p>OBJECTIVE #4:</p> <p>Examine the current transportation/land use integration practices in Delaware.</p>

OBJECTIVE #1: The matrix was created as a result of in-depth conversations with top policy officials throughout the state of Delaware. The officials interviewed were:

Connie Holland, Director, Office of State Planning Coordination (OSPC)
 David Culver, General Manager, New Castle County Department of Land Use
 George Haggerty, Assistant General Manager, New Castle County Department of Land Use
 Lawrence Lank, Director, Sussex County Planning Department
 Sarah Keifer, Director, Kent County Division of Planning and Zoning
 Juanita S. Wiczoreck, Executive Director, Dover/Kent County Metropolitan Planning Organization (DKCMPO)
 Tigist Zegeye, Executive Director, Wilmington Area Planning Council (WILMAPCO)
 Ralph Reeb, Planning Division, Delaware Department of Transportation (DelDOT)
 Stephen B. Kingsberry, Executive Director, Delaware Transit Corporation (DTC)
 Bill Osborne, Executive Director, Delaware Transportation Management Association (DTMA)

Gary Pusey, Executive Director, Salisbury/Wicomico County MPO (SWCMPO)

Conference calls were conducted throughout October, and respondents were provided questions ahead of time regarding transportation/land use integration issues in Delaware. Listed below are the top interviewee responses for each category.

Current Practices for Land Use/Transportation Integration in the Planning Process

- Intergovernmental coordination
- Preliminary Land Use Service (PLUS) Process Involvement/Consultation
- Involvement in comprehensive planning process
- Local area planning

Deficiencies Regarding Land Use/Transportation Integration

- Lack of funding, staff, resources
- Public/Political Opposition: hinders planning process, Corridor Capacity Preservation Program (CCPP) opposition over property rights outside growth boundary, DelDOT receives pressure not to be stringent, not to allow “those” people through the neighborhood (“Complete Streets”), no long-term perspective, opposition to density/mixed-use/perceived traffic increases/losing front yards

Suggestions on Improvement of Land Use/Transportation Integration

- More intergovernmental cooperation
- Create/continue local area plans/corridor planning
- Need for new state policy/initiative on transportation / land use integration

Feedback on Proposed Recommendations

- Create transit-ready communities
- Complete local area plans
- Traffic Mitigation Agreement (TMA) Improvement: DTC voting/veto power on TMA, include mixed-use communities, make it a requirement for certain employers, more incentives, public education, Kent County lack of employers, proactive use, WILMAPCO coordination

OBJECTIVE #2: Based on general respondent recommendations the following improvements are proposed:

- Foster more intergovernmental cooperation throughout Delaware.

- Support development of local area plans
 - Continue development and implementation of the Southern New Castle County local area plan
 - New Castle County should continue to develop the multiple local area studies that will later develop into unique local area plans
 - Develop local area plans that correspond to corridor areas and major transit areas should occur not only in New Castle County, but statewide. With projected population increases, as highlighted at the beginning of this report, expected to occur mostly in Kent and Sussex Counties, local area planning can serve as a positive tool for these counties to use while absorbing growth
- Initiate an improved state policy on transportation/land use integration
- Create transit-ready communities.
- Re-evaluate and enhance TMAs throughout Delaware to better connect with mass-transit and other transportation systems
 - Integrate mixed-use developments into TMAs
 - Give DTC separate voting/veto power on TMAs
 - Make TMAs a requirement for certain employers either through ordinance changes, internal policy directives, or state codes
 - Provide more incentives to employers for agreeing to and implementing TMAs
 - Expand public outreach and education
 - TMAs should be proactively used. The concern is that initial business development in an area may cause transportation system strains, but normally the businesses locating in the area later on enter into TMAs
 - Improve consultation with MPOs on TMAs
- Develop a transportation-impact fee. Refer to Jaye Pershing Johnson and James B. McDaniel's (December 2008) "TCRP Project J-5: Legal Aspects of Transit and Intermodal Transportation Programs, Legal Research Digest 28 - Uses of Fees or Alternatives to Fund Transit"¹

¹Johnson, Jaye Pershing and James B. McDaniel. TCRP Project J-5 "Legal Aspects of Transit and Intermodal Transportation Programs: Legal Research Digest 28, Uses of Fees or Alternatives to Fund Transit." Transit Cooperative Research Program, Federal Transit Administration, December 2008.

- Addressing memoranda of understanding (MOUs) in the planning process: standardization of MOU’s and development of additional MOU’s regarding implementation and maintenance. We need to re-evaluate MOUs every time comprehensive plans go through the update process.

OBJECTIVE #3: Upon completion of the literature review, supplemental findings are provided within the framework of five key recommendations.

<p><i>RECOMMENDATION #1:</i></p> <p>Foster transit-oriented development (TOD).</p>
<p><i>RECOMMENDATION #2:</i></p> <p>Create patterns of future land development that support transit-ready communities.</p>
<p><i>RECOMMENDATION #3:</i></p> <p>Engage the public.</p>
<p><i>RECOMMENDATION #4:</i></p> <p>Review and implement ordinance changes that create more transit-supportive land use.</p>
<p><i>RECOMMENDATION #5:</i></p> <p>Create an agenda highlighting “low-hanging fruit” and a timeline for action for implementation of study recommendations.</p>

OBJECTIVE #4: An exhaustive inventory was conducted in order to highlight the various strategies that current Delaware officials are implementing to foster transportation/land use integration.

Statement of Problem/Purpose

The purpose of this report is to produce recommendations that will foster more transportation and land use integration throughout the overall planning process in Delaware. The fundamental rationale for improving transportation and land use integration in Delaware are environmental conservation, fiscal responsibility, and reduction in travel costs for citizens. Regarding environmental conservation, the Transit Cooperative Research Program (TCRP) Report #74: “The Cost of Sprawl,” written in 2002, found that the benefits of reducing sprawl between 2000 and 2025 in the US would save four million acres of land.² By decreasing travel distance and providing alternatives to auto-centric transportation systems, land use/transportation integration, serves as a vital instrument for states and localities to address climate change. Regarding fiscal responsibility, the same TCRP report found that, if sprawl was curbed between 2000 and 2025, the United States would save \$109.7 billion in new roadway construction costs.³ Regarding the reduction in travel costs for citizens, the TRCP report indicated that the United States would save \$24.1 billion in personal daily travel costs.⁴

Another rationale for this report is to enhance further transportation and land use integration in Delaware. From 2001 to 2007, one in four recorded residential lots were located outside of designated growth areas, as defined in the “State Strategies for Policy and Spending” (SSPS),⁵ thereby undermining transportation/land use integration in Delaware, since transportation investment is tied to designated growth areas. Interconnectivity and use of multiple transportation systems (biking, walking, rail, and bus) have only improved marginally. A Travel Monitoring System Survey spanning from 2001 to 2006 found that 96.4 percent of Delawareans still drive or ride in a car to work.⁶ The number of workers walking to work dropped from 3.8 percent to 2.5 percent from 1990 to 2000.⁷ The number of those riding a bike to work declined from 0.3 percent to 0.2 percent of the working population in the same time period.⁸ This indicates that even though growth is more directed, it is not correlating with the growth of an integrated and efficient transportation system. Fixed-route bus ridership only increased by 3.2 percent from 2005 to 2007.⁹ However, during the same time, annual rail ridership on the SEPTA R2 line increased 18.5 percent.¹⁰ A key contributing factor to this increase was gas prices. The below graph shows the strong correlation between gas prices and SEPTA R2 ridership.

²Burchell, Robert W., George Lowenstein, William R. Dolphin, Catherine C. Galley, Anthony Downs, Samuel Seskin, Katherine Gray Still, and Terry Moore. *TCRP Report 74: Costs of Sprawl – 2000*. (Washington DC: Transportation Research Board, 2002), 36.

³Ibid., 11.

⁴Ibid., 19.

⁵Office of Management and Budget, State of Delaware, *Report to the Governor and the 144th General Assembly: Cabinet Committee on State Planning Issues*. (January 2008), http://omb.delaware.gov/newsrm/documents/ccspi_rep_01_03_08.pdf, 3.

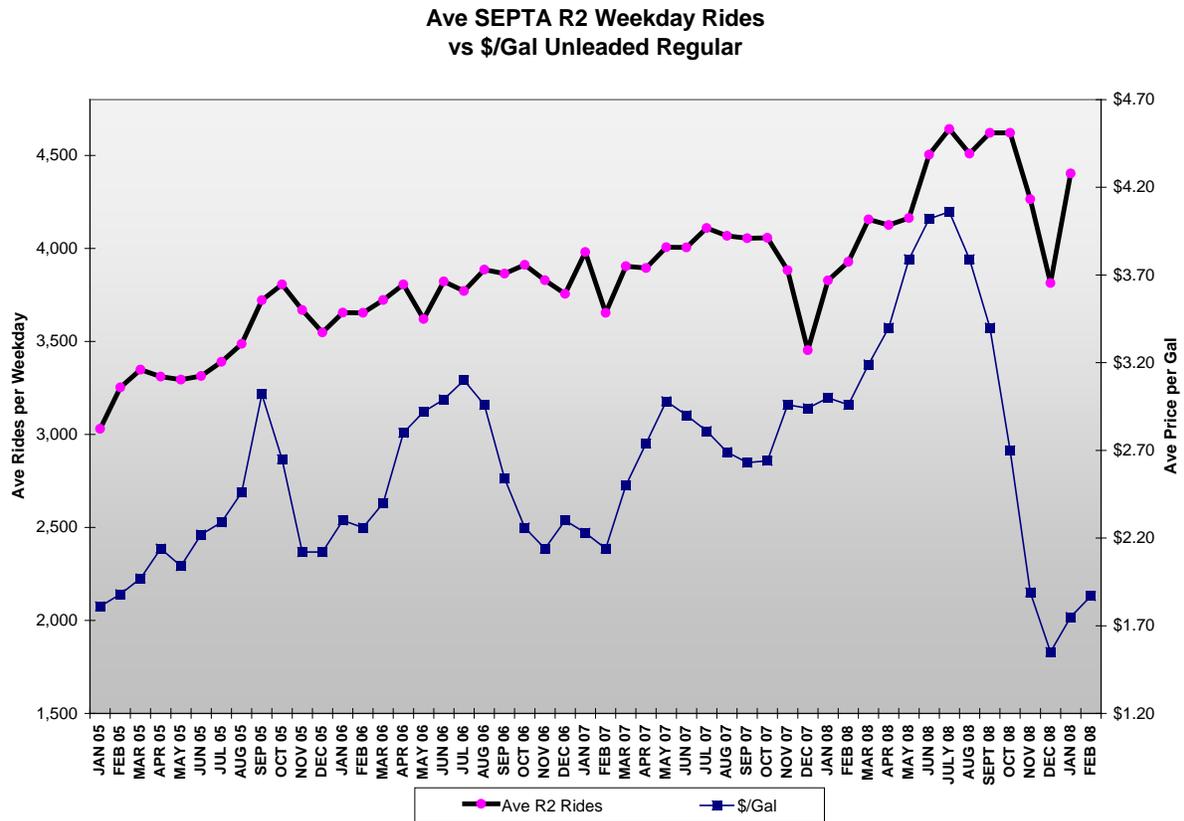
⁶Delaware Department of Transportation, *Delaware Transportation Facts 2007*, (Dover DE: DelDOT Planning, 2007), 11.

⁷Ibid., 19.

⁸Ibid., 23.

⁹Ibid., 23.

¹⁰Ibid., 26.



(Source: Delaware Transit Corporation and the Delaware Department of Transportation)

A trend of population growth and decentralization necessitates a proactive and aggressive approach to fostering transportation/land use integration in Delaware, especially in areas where growth is anticipated. Between the period of 2000 and 2030 Delaware’s population is expected to grow by approximately 260,000 people; many are expected to live in Kent and Sussex Counties rather than the more urban New Castle County.¹¹ Given current economic conditions and the collapse of the housing market, planners have the opportunity to get strong policies in place before the next housing boom.

The backdrop for this report stems from recent public discussion on the need for transportation/land use integration in Delaware. Two panels at the 2007 Transportation Education, Research & Security Forum identified the need to better coordinate planning of transportation/transit and land use (the Administration, Government, and Policy Issues panel and the Local/Towns Issues panel). Since the Delaware Department of Transportation (DelDOT) is responsible for so many roads in Delaware (more than four times the national average¹²), there is a need for transportation/transit planning to be proactive rather than reactive. Several of the recommendations for future action, contained in the “Report to the Governor and the 144th General Assembly” (December 2007), identified the following issues as being vital to the success of the Livable Delaware initiative: efficiently designed transportation systems, development of local area plans, involvement of local governments in transportation planning,

¹¹Ibid., 4.

¹²Delaware Department of Transportation, *Delaware Transportation Facts 2007*, (Dover DE: DelDOT Planning, 2007), 13.

especially with regard to the “complete streets” concept, and development of criteria for the location and design of public facilities, including schools, to maximize all transportation-modes and users. This issue was also a predominant theme of the final report *Framing the Issues of Paratransit Services in Delaware* (December 2007).

Objectives

This report will accomplish the following objectives:

- 1) *Provide a matrix highlighting perceived and realized deficiencies in transportation/land use integration based on respondent interviews conducted via conference calls.* The matrix categories consist of: current practices, deficiencies, suggestions on improvement, and feedback on proposed recommendations.
- 2) *Provide recommendations to address integration deficiencies.* Recommendations are generated from the interviewee feedback regarding proposed recommendations.
- 3) *Conduct a literature review of possible policy outcomes that will improve land use/transportation integration in Delaware.*
- 4) *Examine the current transportation/land use integration practices in Delaware.* State agencies, county agencies, metropolitan planning organizations (MPOs), and the Delaware Transportation Management Association will be examined. The information presented for all organizations is based on general research and interview responses.

Matrix of Perceived/Realized Deficiencies Based on Interviews

The matrix highlighting perceived and realized deficiencies in transportation/land use integration across Delaware was based on respondent interviews conducted via conference calls. Specific tables were created in the categories of: current practices, deficiencies, suggestions on improvement, and feedback on proposed recommendations. In the following section, the general methodological framework of the matrix creation and actual interviewee responses are examined.

The matrix was created as a result of in-depth conversations with top policy officials throughout the state of Delaware. Conference calls were conducted throughout October, and respondents were provided questions ahead of time regarding transportation/land use integration issues in Delaware. The basic questions that all respondents, at a minimum, received were:

- 1) What current practices are used to integrate transportation with the land-use planning process in Delaware?
 - a. How are DelDOT, Office of State Planning Coordination, and the local MPO included in the process?
 - b. If any or all of the above mentioned agencies are involved in the land-use planning process, do you find that their input is generally constructive and useful? If not, how can this be improved?
- 2) Generally, how would you rate your county/department in relation to its ability to successfully integrate functional transportation systems with the land use process generally?
(on a scale of 1 to 5; 5 = Excellent; 4 = Good; 3 = Average; 2 = Poor; 1 = Terrible)
Explain your evaluation.
- 3) What are the current general deficiencies, as you see them, regarding transportation/land use integration in your county? What deficiencies exist within the planning process related to transportation and land use integration?
- 4) How can we improve our transportation/land use integration practices?
- 5) On the project proposal sheet, please comment on the possible recommendations as listed at the end of the Description of Approach and Methodology for Solving the Problem on the Project Proposal sheet.

The officials interviewed were:

Connie Holland, Director, State Planning Office
David Culver, General Manager, New Castle County Department of Land Use
George Haggerty, Assistant General Manager, New Castle County Department of Land Use
Lawrence Lank, Director, Sussex County Planning Department
Sarah Keifer, Director, Kent County Division of Planning and Zoning
Juanita S. Wiczoreck, Executive Director, Dover MPO
Tigist Zegeye, Executive Director, WILMAPCO
Ralph Reeb, Planning Division, DelDOT
Stephen B. Kingsberry, Executive Director, Delaware Transit Corporation
Bill Osborne, Executive Director, DTMA

Gary Pusey, Executive Director, Salisbury/Wicomico County MPO

The combined rating given from respondents was 3.3 for question two. The other question responses are reflected in the below tables. Table 1 shows current land use/transportation integration practices that were defined by respondents interviewed. The “Top Current Practices” listed first in the table were practices that were mentioned frequently enough in the table that it was preferable to place them at the top of the table listed as current practices. The other practices listed were respondent specific current practices based on the categories of DTMA, MPO, state agencies, and counties. This listing is used in all tables.

Table 1: Current Practices

Interviewees	Current Practices for Land Use Transportation Planning/Inclusion in Planning Process
Top Four Current Practices	<ul style="list-style-type: none"> ▪ Intergovernmental coordination ▪ PLUS process involvement/consultation ▪ Involvement in comprehensive-planning process ▪ Local area planning
DTMA	<ul style="list-style-type: none"> ▪ Working to establish a Cecil County Transportation Management Association in conjunction with WILMAPCO
MPOs	<ul style="list-style-type: none"> ▪ Conduct transportation studies for localities. ▪ Use corridor designations to prioritize transportation infrastructure improvements. ▪ Adding transit-ready community elements to local RTP currently. ▪ Assist municipalities in transportation planning. ▪ Give specific help to Wilmington studying downtown neighborhoods. ▪ Conduct research/analysis to determine LOS and recommend road improvements. ▪ Conducting feasibility study for potential Cecil County Transportation Management Association.
State Agencies	<ul style="list-style-type: none"> ▪ Ensure that large-scale developments are more transit-friendly. ▪ Review site plans for all counties (mostly large developments). ▪ Create and implement MOUs with employers regarding Traffic Mitigation Agreements (TMAs). ▪ Develop transportation plans at local and state level. ▪ Study implementation of various types of transportation systems. ▪ Involvement with planning-review processes at local level. ▪ Create transit-friendly or transit-ready communities. ▪ Approve every entrance from public road to private property. ▪ Enforce compliance to ADA standards. ▪ Require developers to make off-site improvements where applicable. ▪ Writing a white paper on improving Delaware's complete streets policy ▪ Delaware Advisory Service (DAS). ▪ State Strategies for Policy and Spending.
Counties	<ul style="list-style-type: none"> ▪ Receive DelDOT LOS classifications, traffic counts, and occasionally Traffic-impact Studies (TISs). ▪ Consider adjacent land uses to development proposals to better connect land uses. ▪ Integrate multi-modal paths into site designs. ▪ Require every subdivision with 20 lots or more have a bus stop for school or a parking lot. ▪ Technical Advisory Committee (TAC) Review (DelDOT sits on TAC) ▪ MOU with OSPC on PLUS process review ▪ Integrate adjacent land uses with one another. ▪ Foster mixed-use development. ▪ Consider bike and pedestrian amenities during planning-review process. ▪ Require all major subdivisions complete TISs.

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| <ul style="list-style-type: none">▪ MOU with DelDOT on review of rezoning requests▪ APFO necessitates early involvement from DelDOT in planning-review process.▪ TISs▪ Multi-modals paths are considered in the planning process; sidewalks required.▪ Encourage high-density/mixed-uses through planned unit development (PUD) policies and transfer of development rights (TDR) ordinances.▪ Give projects phased approval tied to completion of infrastructure improvements.▪ Planning Commission makes OSPC and DAC recommendations conditions of site-plan approval during the planning process.▪ Changed 1988 MOU with DelDOT in 2006 to address issues with Rte. 1 and Western Parkway.▪ Seasonal bus service provided to high-density areas in and around southern Delaware beach areas.▪ Work with DelDOT to establish sufficient pedestrian network in growth areas. |
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Table 2: Deficiencies

Interviewees	Deficiencies regarding Land Use /Transportation Integration
Top 2 Deficiencies	<ul style="list-style-type: none"> ▪ Lack of funding, staff, resources ▪ Public/Political Opposition: hinders planning process, CCPP opposition over property rights outside growth boundary, DelDOT receives pressure not to be stringent, not to allow “those” people through the neighborhood (“Complete Streets”), no long-term perspective, opposition to density/mixed-use/perceived traffic increases/losing front yards
DTMA	<ul style="list-style-type: none"> ▪ The DTMA is not part of the PLUS process. ▪ Disconnect exists between counties, local governments, and state on land use. ▪ TMAs sometimes kick in too late, later developers get TMA, not initial developers.
MPOs	<ul style="list-style-type: none"> ▪ Do not serve on the PLUS review ▪ Coordination is reactive. ▪ Transportation planners are planning over the next 30 years, while land use planners are planning for the next 5-10 years; the plans do not match and often conflict in implementation. ▪ Roads need shoulders, multi-modal paths. ▪ Do not conduct area-wide studies anymore. ▪ Public officials are deterred from taking strong stands due to litigation challenges from special interests. ▪ Everyone is operating on their own way of doing business. ▪ Scoring systems for project prioritization have no enforceability from the state. ▪ Serious lack of commitment at government level to tackle sprawl ▪ No mechanism to deny a project based on transportation impacts ▪ Delaware Economic-development Office does not always attend MPO TAC meetings.
State Agencies	<ul style="list-style-type: none"> ▪ Some developers are resistant to input based on perceived/realized profit impact. ▪ Developers resist interconnectivity, saying that their customers are not “bus people.” ▪ Perception that DelDOT is overreaching, requiring too much of an applicant ▪ DelDOT is criticized for piling on requirements. ▪ Need faster implementation of transportation improvements ▪ Maintenance of complete streets is often the state’s burden by default. ▪ Some believe that the state is trying to take over people’s jurisdiction. ▪ We have all low density. ▪ Need better TDR/PDR ordinance implementation ▪ TISs are taking too long.
Counties	<ul style="list-style-type: none"> ▪ DelDOT cannot keep up with needed road improvements. ▪ Poorly written zoning ordinances of the past lacked long-term vision, resulting in sprawl development that we cannot change now. ▪ Developers resist interconnectivity based on property rights/traffic. ▪ Transit systems are limited within Sussex County.

- DelDOT TIS letters need to have more specific improvements listed, better timing in planning process.
- DelDOT may not be doing adequate future planning for other transportation systems.
- Need greater integration of stakeholders early in the planning process
- DelDOT should give more consideration to DART.
- PLUS Process could be cut down to sub-groups who meet initially and then go to a larger PLUS conference with more stakeholders.
- We are still planning for single-family, automobile-centered development.
- TMAs have been used as a defense mechanism by a developer in order to get the proposal passed.
- Ten percent of the time the road system is in failure.
- School traffic causes lots of problems to TMAs and peak-hour traffic.
- Regional interconnectivity is limited by toll located between Harford and Cecil Counties in Maryland, by lack of rail transit connection in Cecil County to SEPTA Newark.
- MARC is not interested in rail connection in Cecil County with SEPTA for 8-10 years.
- Not many mixed-use developments are going through the planning process.
- Maintenance of bike/pedestrian facilities
- DelDOT caves to public opposition on interconnectivity.
- Developers resist interconnectivity if it slows down the project.
- Density is a problem regarding TOD, because areas are either not dense enough or do not have capacity to be dense enough.
- Counties have the land use control, whereas the state of Delaware has transportation control, which causes conflict
- Coordination problems with DelDOT in planning-review process
- There is a disconnect between DelDOT and DART on capturing the idea of a workable county-wide transit system.
- We do not have clear employment hubs to connect transportation.
- Issue of road width and emergency-response vehicles (Fire Marshall)
- Problems of mixing young school children with older adults on buses based on the idea of using DART to move students rather than yellow buses
- Developer mentalit—build standard block housing and say “This is what the people want”
- We just don’t have the density to support TOD/mass-transit, etc.
- Quality of comments we get from PLUS process are not good, very vague, not in depth, no concrete input from DelDOT and other agencies
- DelDOT has a tendency to be noncommittal until the last minute. We approve a land use, and then DelDOT has additional requirements added at the last minute. One project has been held up six months waiting on an alternative-transportation strategy.
- PLUS process is not taken seriously by developers.
- Need to create local area plans for the U.S. Rt. 13 Corridor, the Delmar area, the Milton area, the Seaford/Blades/Laurel area, the Millville-Ocean View area, and the Greenwood-Bridgeville area
- Planning commissioners at the local level have a high turnover rate, which decreases their ability to get educated on land use/transportation integration

	policies in enough time to implement effective integration policies.
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Table 3: Improvement Suggestions

Interviewees	Suggestions on Improving of Land Use/Transportation Integration
Top Three Suggestions	<ul style="list-style-type: none"> ▪ More intergovernmental cooperation ▪ Create/continue local area plans/corridor planning. ▪ Need for new state policy/initiative on transportation/land use integration
DTMA	<ul style="list-style-type: none"> ▪ Foster greater involvement from major employers in Cecil County. ▪ Draft executive orders for next governor regarding transportation/land use integration ▪ Convene a summit in Dover with key legislators, counties, administrators, etc. to focus on transportation/land use integration and present solutions. ▪ Evaluate effectiveness of TMAs statewide and strengthen/improve them accordingly. ▪ Provide technical support to the localities on land use. ▪ Involve emergency responders with this issue/smart-growth advocacy. ▪ Take more holistic approach/proactive approach to TMAs. ▪ Foster greater interconnectivity between existing and future communities. ▪ DTMA must demonstrate value, grow membership, impact the political process, and increase recognition—generally it must expand statewide in conjunction with regional agreements with neighboring states/counties. ▪ Incorporate more DEDO involvement with transportation/land use integration issues, since the department can provide transportation money to certain economic projects. ▪ Work with state Fire Commission to review road and access standards. ▪ Possibly give DTC voting power or veto power on TMAs.
MPOs	<ul style="list-style-type: none"> ▪ MPOs should serve on PLUS review. ▪ Take into account the cumulative impact of development. ▪ DelDOT should make informal agreements with developers to decide who pays for transportation infrastructure. ▪ Need the ability to assess fees for bigger transportation improvements based on current, proposed, future, development. ▪ Transit facilities must be included in development-review process. ▪ Need to put in more transit stops with developments ▪ Small MPO arrangements work better when they are a part of a larger planning office (e.g., - in Virginia, regional planning district commissions exist, and MPOs are incorporated into the commissions with other land use planning officials). ▪ Need more enforcement and implementation of transportation/land use integration ▪ We need to have a policy for transportation project prioritization tied to investment areas. ▪ Need to follow MOUs better ▪ Need APFO and impact fees ▪ Require developers of a certain size to prepare a traffic-impact analysis prior to plan approval.

State Agencies	<ul style="list-style-type: none"> ▪ Sussex and Kent Counties need Unified Development Codes like New Castle County. ▪ DART needs to be part of local government. ▪ Need fast track approval processes , credits, incentives ▪ Need to be stronger in walking away from what we don't like and helping what we do like ▪ Need to be more opportunist instead of determinist ▪ Require developers to put in pedestrian/bike facilities as applicable into every plan. ▪ Hold meetings at various locations around the state each month to talk about all current and future transportation projects - the meeting would use a workshop format where two-way communication can exist between audience and transportation officials. ▪ Explore what the proper role is for private-sector residential, commercial, mixed-use, etc. in providing transit service. ▪ Need more education and communication in order to foster more transparency ▪ Offer more options in living styles. ▪ Get away from car-oriented design. ▪ Improve PDRs and TDRs at county level with banking provisions/other improvements. ▪ The PLUS Process must have “teeth.” ▪ Strengthen DelDOT Road Design Manual bicycle and pedestrian facilities element to require bicycle and pedestrian facilities with all new developments, unless physically or fiscally impossible as determined by the Secretary of Transportation.
Counties	<ul style="list-style-type: none"> ▪ Need a new MOU as required by comprehensive plan approval ▪ Explore implementation of design standards. ▪ Need more fiscal responsibility to outline exactly where we want our resources to be spent and where we won't spend ▪ Need to be planning 50 years from now and not just three years from now ▪ Need good smart-growth-type development in southern area of New Castle County ▪ Need to continue efforts through WILMAPCO, MPA, DelDOT, SEPTA, and MARC on Cecil County bus system connectivity, interjurisdictional issues, BRAC, and commuter rail-line-connection ▪ Work with MARC on express bus service to People's Plaza. ▪ Need better incentives for mixed-use developments ▪ Improve “complete streets” policy. ▪ Need better timing regarding DelDOT recommendations in planning-review process ▪ DelDOT must make better commitments. ▪ Need increased funds to implement Dover/Kent County MPO TIP ▪ Strengthen connectivity percentages and create more lot brackets as enumerated in Article XI, 187-58-F. ▪ Need a circulation plan to be created and implemented ▪ Need to receive Letter of No Objection from DelDOT, prior to recordation of plan. ▪ When we receive a TIS letter back from DelDOT we need specific

	<p>improvements listed.</p> <ul style="list-style-type: none">▪ DelDOT should look at road standards: are they doing adequate future planning for other transportation systems?▪ Rights-of-way/land adjacent to road systems could be used for dual purposes; we have been able to make environmental improvements in private road areas, where we would not have been able to do anything on public roads.▪ Create greenway plan to integrate pathways/greenways into development projects.▪ DelDOT should give more consideration to DART.
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Table 4: Feedback on Proposed Recommendations

Interviewees	Feedback on Proposed Recommendations
Top Three Comments on Proposed Recommendations	<ul style="list-style-type: none"> ▪ Create transit-ready communities. ▪ Complete local area plans. ▪ TMA Improvement: DTC voting/veto power on TMA, include mixed-use communities, make it a requirement for certain employers, more incentives, public education, Kent County lack of employers, proactive use, WILMAPCO coordination
DTMA	<ul style="list-style-type: none"> ▪ Cooperation needed from municipalities for recommendations to work ▪ Need MOUs with “teeth”
MPOs	<ul style="list-style-type: none"> ▪ All recommendations are appropriate and acceptable. ▪ Consider a multi-modal LOS. ▪ Use Florida Complete Streets policies as model for Delaware. ▪ Comprehensively look at all transportation options.
State Agencies	<ul style="list-style-type: none"> ▪ Need to establish common definitions on recommendation terms ▪ Educate people about transit-friendly development to realize density is not a bad word. ▪ Create new TOD site at Newark Station. ▪ Need to foster a behavioral change throughout this process ▪ Improve state Complete Streets policy to make it sustainable and solvent - we need to bring stakeholders to the table on this to define it. ▪ Get developers on board with recommendations. ▪ MOUs: we need to re-evaluate MOUs every time comprehensive plans go through update process. ▪ Meet every year with the state agencies to see what we can do to improve things. ▪ Need more coordination between agencies ▪ Need fast track approval processes ▪ TODs: no regulations in place to implement idea ▪ Need to assure the public that we have good transit systems ▪ Create pattern books.
Counties	<ul style="list-style-type: none"> ▪ Continue to study rural community districts with mixed-uses. ▪ Take MOU process further through implementing local area plans and having support from DelDOT. ▪ Local area plans should focus on traffic flow and counts in urban environments. ▪ Create TIDs and pedestrian plans. ▪ MOU needs to be clearer, better elaborated. ▪ Continue implementation of APFO. ▪ We need to explore incentives for businesses to change work hours to relieve peak-hour congestion.

Recommendations

Project recommendations are segregated into three categories: 1) general respondent recommendations, 2) specific respondent recommendations, and 3) supplemental research recommendations. The respondent recommendations, both general and specific, originate largely from matrix responses located in Tables 3 and 4. The general recommendations are those mentioned by multiple respondents that seem to have respondent support across the board. The supplemental research recommendations originated from a literature review of transportation and land use-integration practices.

General Respondent Recommendations

- Foster more intergovernmental cooperation throughout Delaware.
- Support development of local area plans.
 - Continue development and implementation of the Southern New Castle County Local Area Plan.
 - New Castle County currently has multiple local area studies that will later develop into unique Local Area Plans. These processes should be continued and come to fruition.
 - Develop local area plans that correspond to corridor areas, and major transit areas should occur not only in New Castle County, but statewide. With projected population increases expected to occur mostly in Kent and Sussex Counties, as highlighted at the beginning of this report, local area planning can serve a positive tool for these counties to use while absorbing growth.
- Initiate an improved state policy on transportation/land use integration.
- Create transit-ready communities.
- Re-evaluate and enhance traffic-mitigation agreements (TMAs) throughout Delaware to better connect with mass-transit and other transportation systems.
 - Integrate mixed-use developments into the TMAs.
 - Give DTC separate voting/veto power on TMAs.
 - Make TMAs a requirement for certain employers either through ordinance changes, internal policy directives, or state codes.
 - Provide more incentives to employers for agreeing to and implementing TMAs.
 - Expand public outreach and education.

- TMAs should be proactively used. The concern is that initial business development in an area may cause transportation-system strains, but normally the businesses locating in the area later on enter into TMAs.

- Improve consultation with MPOs on TMAs.

- Develop a transportation-impact fee. Refer to Jaye Pershing Johnson and James B. McDaniel's (December 2008) "TCRP Project J-5: Legal Aspects of Transit and Intermodal Transportation Programs, Legal Research Digest 28 - Uses of Fees or Alternatives to Fund Transit"¹³ A tiered impact fee could be applied that incentivizes development in growth areas rather than agricultural and environmental resource areas.

- Addressing memoranda of understanding (MOUs) in the planning process: standardization of MOUs and development of additional MOUs regarding implementation and maintenance. MOUs: we need to re-evaluate MOUs every time comprehensive plans go through update process

- Formulate clear protocol that assigns responsibility for maintenance of Complete Streets between the state, counties, and municipalities. One strategy to remedy this problem is to integrate this issue into municipal training courses administered through the University of Delaware (special attention should be given to attracting Planning Commissioners from around the state to attend and Georgetown and other southern training locations should be used to make attendance by down state planners more convenient).

- Municipal training courses facilitated by the University of Delaware should specifically incorporate land use-law elements that assist Planning Commissioners and other public officials in addressing the legal issues relates to land use policies.

- Municipal training courses facilitated by the University of Delaware should be conducted in the evenings adding convenience for Planning Commissioners who hold full-time jobs during the day. Furthermore, specific training exercises should be designed for county and municipal officials in order to more fully address the unique conditions that both entities face.

- Economic-development officials from state and local levels must be crucial stakeholders in the transportation/land use-integration discussion, especially given the economic downturn we face.

Specific Respondent Recommendations

DTMA

- Foster greater involvement from major employers in Cecil County, Md., with regard to the northern Delaware regional planning process.

- Draft executive orders for next governor regarding transportation/land use integration.

¹³Johnson, Jaye Pershing and James B. McDaniel. TCRP Project J-5 "Legal Aspects of Transit and Intermodal Transportation Programs: Legal Research Digest 28, Uses of Fees or Alternatives to Fund Transit." Transit Cooperative Research Program, Federal Transit Administration, December 2008.

- Provide technical support to municipalities on land use.
- Involve emergency responders in the overall policy discussion.
- Foster greater interconnectivity among communities.
- Encourage buy-in from municipalities regarding land use/transportation recommendations.
- Convene a “Transportation/Land Use Integration Summit” in Dover with the new governor, state legislators, the University of Delaware, the League of Women Voters, state agencies, county officials, MPOs, the DTMA, and other relevant stakeholders to talk about this issue and address policy proposals for implementation at the state level. The summit could serve as a springboard for exploration of executive orders as remedies to the land use/transportation issue.
- The Department of Natural Resources and Environmental Control (DNREC) should be included into the land use/transportation-integration equation. How are DNREC data incorporated into the overall planning process.
- DNREC should be involved in TMA decision-making and in complete streets initiatives.
- TMAs must be predictable and transparent, with all stakeholders coming to consensus in advance of the final agreement.

MPOs

- Create ordinance changes and internal policy changes that further include and strengthen the involvement of local MPOs in the development-review process.
 - MPO representatives should be included on the front end of local planning processes
 - An MPO representative should serve on local Planning Commissions TACs. Such representatives would not have voting powers but should serve the Planning Commissions through consultation. MPO representatives should give recommendations on development proposals and issue support or disapproval statements regarding development proposals. MPOs should serve on PLUS review.
- Take into account the cumulative impact of development.
- DelDOT should make informal agreements with developers to decide who pays for transportation infrastructure.
 - Needed is the ability to assess fees for bigger transportation improvements based on current, proposed, and future development.
- Transit facilities must be included in development-review process.
- Need to put in more transit stops with developments

- Small MPO arrangements work better when they are a part of a larger planning office (e.g., - in Virginia, regional planning district commissions exist, and MPOs are incorporated into the commissions with other land-use planning officials).
- Need more enforcement and implementation of transportation/land use integration
- Need to have a policy for transportation project prioritization tied to investment areas
- Need an Adequate Public Facilities Ordinance (APFO) and impact fees
- Require developers of a certain size to prepare a traffic-impact analysis prior to plan approval.
- Consider a multi-modal LOS.
- Use Florida Complete Streets policies as model for Delaware policy.
- Need to incorporate the judicial branch into this conversation to create a mechanism for working with judges on land use law. We need to reassess enabling legislation with assistance from practicing lawyers with expertise in land use law.
- Staying with the OSPC “Better Models for Development” report, a “Better Models for Transit-Supportive Development and Design” should be created in order to provide specific components and examples for planners and developers alike to use to build better communities in Delaware.

State Agencies

- Sussex and Kent Counties need Unified Development Codes like New Castle County
- DART needs to be part of local government.
- Need fast-track approval processes, credits, incentives
- Need to be stronger in walking away from what we don't like
- Need to be more opportunist instead of determinist
- Require developers to put in pedestrian/bike facilities as applicable into every plan.
- Hold meetings at various locations around the state each month to talk about all current and future transportation projects - the meetings would use a workshop format where two-way communication can exist between audience and transportation officials.
- Examine what the proper role is for private-sector residential, commercial, and mixed-use developers in providing transit service.
- Offer more options in residential living styles.

- Get away from car-oriented design.
- Improve PDRs and TDRs at county level with banking provisions/other improvements.
- Need to establish common definitions on recommendation terms
- Educate people about transit-friendly development to realize density is not a bad word.
- Create new TOD site at Newark Station.
- Need to foster a behavioral change throughout this process.
- Improve state Complete Streets policy to make it sustainable and solvent - we need to bring stakeholders to the table on this to define it.
- Get developers on board with report recommendations.
- Meet every year with the state agencies to see what we can do to improve things.
- Need TOD regulations in place to implement idea
- Need to assure the public that we have good transit systems
- Create pattern books.
- The areas in and around our airports and shipping ports must have land use policies in place that encourage commercial and industrial growth. The connections between the private-sector and key shipping areas are crucial for the future growth of Delaware. Preservation of rights of way in such priority areas should be pursued. Prioritized sites must be selected to receive zoning and infrastructure improvements. Local economic-development officials then have the ability to market a “shovel ready” site to commercial and industrial interests, thereby, keeping such important shipping areas sustainable. These pre-qualified sites should also have transportation-infrastructure issues addressed on site. For example, traffic-impact studies (TISs) should already be completed for the area to alleviate obstacles to redevelopment.

Counties

- Explore implementation of design standards.
- Need more fiscal responsibility to outline exactly where we want our resources to be spent and where we won't spend
- Rights-of-way and land adjacent to road systems could be used for dual purposes; we have been able to make environmental improvements in private road areas where we would not have been able to on public roads.
- Need to be planning 50 years from now and not just three years from now

- Need good smart-growth-type development in southern area of New Castle County
- Need to continue efforts through WILMAPCO, MPA, DeIDOT, SEPTA, and MARC on Cecil County bus system connectivity, interjurisdictional issues, BRAC, and commuter-rail-line connection
- Work with MARC on express bus service to People's Plaza.
- Need better incentives for mixed-use developments
- Improve Complete Streets policy.
- Need better timing regarding DeIDOT recommendations in planning-review process
- DeIDOT must make better commitments.
- Need increased funds to implement Dover/Kent County MPO TIP
- Need a circulation plan to be created and implemented
- Need to receive Letter of No Objection from DeIDOT prior to recordation of plan
- When we receive a TIS letter back from DeIDOT, we need specific improvements listed.
- Continue to study Rural Community Districts with mixed-uses.
- Focus on traffic flow and counts in urban environments.
- Create TIDs and pedestrian plans.
- Continue creation and implementation of APFOs.
- Regarding Kent County, Article IV, 187-58(F)(2) could be strengthened by increasing the interior access percentages for varying development sizes (measured by number of lots).

Supplemental Research Recommendations

Recommendation #1: Foster transit-oriented development (TOD).

Transit-oriented development (TOD) in Delaware would allow for better transportation and land use integration. To start, one must remember the three D's of transit-oriented development: density, design, and diversity. The following TOD implementation strategies focus on these principles. TOD is fully defined as follows:

a mix of residential, retail and office uses and a supporting network of roads, bicycle and pedestrian ways focused on a major transit stop designed to support a high level of transit use. The key features of TOD include (a) a mixed-use center at the transit stop, oriented

principally to transit riders and pedestrian and bicycle travel from the surrounding area; (b) high-density of residential development proximate to the transit stop sufficient to support transit operations and neighborhood commercial uses within the TOD; and (c) a network of roads, and bicycle and pedestrian paths to support high levels of pedestrian access within the TOD and high levels of transit use.¹⁴

Schneider (2004) states that TOD is “absolutely essential” to the long-term viability of transit investments.¹⁵ If Delaware land development occurs away from transportation infrastructure, large amounts of state investment will be wasted. Not only does the state get a return on investments from implementing TOD, studies show that private-sector benefits occur at TOD sites too.

Weinstein and Clover (1999) found that every study conducted in Toronto, Canada, reported a positive impact of a metro system on the transit corridor’s land values.¹⁶ In Dallas, Tex., Weinstein and Clover (1999) found that, immediately after the opening of a transit system, land values around transit stations increased by an average comparative rate of 10 percent.¹⁷ In 1981 another study was conducted by the U.S. House of Representatives “determining that homes within 1,000 feet of a transit station, had a property value premium of \$12,300.”¹⁸ Fejarang (1994) reported that properties near rail lines were worth 30.35 percent more per square foot than non-rail properties.¹⁹ A Federal Transit Administration (FTA) study (1996) examining cities such as San Francisco, Calif., and Portland, Ore., found that property value is worth an additional \$15.78 for every foot closer a property is to a station.²⁰ Based on this projection, if a house were moved 1000 feet closer to a transit station the value could potentially go up \$15,000.²¹ Proximity to major highways did not show the same correlation. The (1996) FTA study found that “homes further from a highway interchange are worth \$7.94 more on average for every foot further from the freeway interchange [than from their original location].”²² Schneider also favors rail over bus, concluding that “urban rail-transit generally can influence urban development (much more than bus service).”²³

If we move beyond the land-value question to the benefit to commercial office value, we find the same result for TOD sites. Office space value in CityCenter Englewood, Colo., a 55-acre TOD mixed-use town-center site, averaged \$21 to \$25 per square foot with a 100 percent occupancy

¹⁴Transit Cooperative Research Program and Federal Transit Administration. *Transit-Oriented Development and Joint Development in the United States: A Literature Review*. Number 52. Subject Area: VI Public Transit. Responsible Senior Program Officer: Gwen Chisholm. (October 2002).

http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rrd_52.pdf, 6.

¹⁵Schneider, Joachim. *Public Private Partnerships for Urban Rail Transit: Forms, regulatory conditions, participants*. Deutscher Universitäts-Verlag, 2004, 300.

¹⁶Ibid.

¹⁷Ibid., 301.

¹⁸Ibid., 300.

¹⁹Ibid. 301.

²⁰Ibid.

²¹Ibid.

²²Transit Cooperative Research Program and Federal Transit Administration. *Transit-Oriented Development and Joint Development in the United States: A Literature Review*. Number 52. Subject Area: VI Public Transit. Responsible Senior Program Officer: Gwen Chisholm. (October 2002).

http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rrd_52.pdf, 6.

²³Schneider, Joachim. *Public Private Partnerships for Urban Rail Transit: Forms, regulatory conditions, participants*. Deutscher Universitäts-Verlag, 2004, 301.

rate vs. \$17 per square foot value with a 90 percent occupancy rate for elsewhere in the market area.²⁴ Retail rents at the same site averaged \$18 to \$20 per square foot with a 90 percent occupancy rate, while others in the market area only averaged \$8 to \$14 per square foot with only an 80 percent occupancy rate.²⁵ Apartment rents at CityCenter averaged \$1,005 to \$1,735, while other market rents only averaged \$550 to \$750.²⁶

The following implementation strategies provide general input on how to better encourage TODs in Delaware. An additional thorough analysis of TOD opportunities in Delaware is *Transit-Oriented Design: Illustrations of TOD Characteristics, A Working Paper* by William DeCoursey and Lorene Athey.

Implementation Strategies

1. Integrate strong TOD policies into WILMAPCO, DKCMPO, and SWCMPO Regional Transportation Plans.

2. Conduct regulatory audits at the state, county, and municipal levels on how best to encourage TOD.

3. Integrate TOD with school-oriented development (SOD).

- The strategic placement of schools throughout Delaware is key to establishing walkable, bikable, downtown community hubs primed for integrated transportation systems. Schools often generate large amounts of traffic at key times throughout the day; if smart locations are chosen for schools, traffic congestion could decrease as a result of use of multiple transportation systems.
- SOD is difficult to implement since local school systems have budgetary constraints that often force the purchase of cheaper land located in isolated areas away from large student populations. School officials should choose school sites that support SOD objectives wherever possible. If schools are located in densely populated residential areas, transportation investment can be better coordinated to serve the needs of the area.
- SOD could be enhanced by appointing a representative from the school system to serve on municipal or county planning commissions.

4. Create local improvement districts (LIDs) to support TOD development.

- LIDs have been created “to finance the local share of public amenities that support transit use and transit-oriented development.”²⁷ Property owners located in an LID can vote to tax themselves in order to fund infrastructure to make LIDs transit friendly.²⁸ LIDs would be best located in station areas or at major transit hubs. LIDs might also be used

²⁴Urban Land Institute. *Creating Walkable Places: Compact Mixed-Use Solutions*. (Washington DC: Urban Land Institute, 2006), 65.

²⁵Ibid.

²⁶Ibid.

²⁷Schneider, Joachim. *Public Private Partnerships for Urban Rail Transit: Forms, regulatory conditions, participants*. (Deutscher Universitäts-Verlag,2004), 341.

²⁸Ibid.

in densely developed mixed-use hubs that are prime locations for transportation investment in the future. Schneider (2004) reports that LIDs have not been used to fund transit service specifically.

5. Consider streamlining/incentivizing planning-review processes at all levels of government for TOD projects.

- Create fast-track approval processes.
 - The City of Boulder, Colo., promotes TOD fast-track approval processes by minimizing discretionary review of projects “conforming to design and development standards”²⁹ within mixed-use districts. Dittmar (2004) reports that approval processes in Boulder were cut down from 3-4 years to 4-6 months.³⁰
 - In Denver, Colo., a 15-day approval process was implemented for projects that met standards through planning staff review.³¹ The city also had a second process taking no more than 45 days that allowed for a negotiation process to occur between the developer and the planning staff regarding any aspects of a project that did not conform to city code. Instead of going through an exhaustive process of various hearings and planning meetings to bring the project in compliance with the code, the two sides get together, hash out an agreement, and move the project forward.³² This method cuts red tape for developers and allows the planning staff to get concessions from the developer quickly on non-compliance issues.
- Allow developers to forego traffic-impact studies (TISs).
- Reduce or eliminate fees and taxes where applicable to promote TOD.
 - “Tax incentives may include simple tax abatement (forgiving the property tax altogether for a certain period of time), freezing the tax for a certain period of time at a low rate, or tying the tax rate to the project’s income stream rather than its assessed value.”³³ Additionally, tax abatements could be granted in conjunction with the developer agreeing to invest in certain improvements and repairs to the property³⁴ that would benefit the public good. Tax exemptions were passed in Oregon in 1995 for TOD districts.³⁵ Schneider (2004) states that “through tax exemption thousands of housing projects with affordable prices have been attracted to transit-oriented locations.”³⁶

²⁹Dittmar, Hank and Gloria Ohland. *The New Transit Town: Best Practices in Transit-Oriented Development*. (Washington: Island Press, 2004), 65.

³⁰Ibid.

³¹Ibid., 66.

³²Ibid.

³³Schwanke, Dean, Project Director – Urban Land Institute, *Mixed-use Development Handbook (Second Edition)*, (Washington DC: Urban Land Institute, 2003), 158.

³⁴Schneider, Joachim. *Public Private Partnerships for Urban Rail Transit: Forms, regulatory conditions, participants*. Deutscher Universitäts-Verlag, 2004, 314.

³⁵Ibid., 344.

³⁶Ibid.

- “The city of Portland, Ore., offers property tax exemptions for multi-unit residential developments located within designated TOD areas. Developments with ten or more units are eligible for the ten-year property tax exemption, provided they meet the following affordability requirements set by the Portland city code:
 - Twenty percent of rental units should be affordable to households earning no more than 60 percent of the area median income (AMI) or 10 percent should be affordable to households earning no more than 30 percent of the AMI.
 - The rental units are to remain affordable for the duration of tax exemption plus an additional five years thereafter.
 - For-sale units should be sold to households earning no more than 100 percent of the AMI for a family of four.”³⁷
- Reduce minimum parking requirements.
 - “The city of Minneapolis, Minn., zoning code allows reduced parking (up to 10 percent) for multifamily dwellings located within 300 feet of a transit stop.”³⁸
 - Los Angeles County, Calif., allows a “40 percent reduction in parking requirements for new residential developments in certain TOD districts.”³⁹
- Provide density bonuses for TOD projects.
 - Robert Cervero, a transportation expert at University of California, finds that density is the most crucial aspect to TODs because “it brings the number of riders that is necessary to ensure the viability of public transit.”⁴⁰
 - One calculation guideline proposed by the Urban Land Institute (2006) is that at least 200,000 square feet of retail/commercial space and at least 2,000 dwelling units should be located within a ten-minute walk of each other.⁴¹ A ten-minute walk is defined as a distance of six blocks.⁴² Storefronts must also occur on both sides of a six-block stretch (ten minute walk) in order to ensure success; the author states that no one-sided retail streets have ever succeeded.⁴³
 - “The city of Woodinville, Wash., allows a ten percent increase above the zoning district's base density for developments located within one-quarter mile of transit routes with frequent service.”⁴⁴

³⁷Regulatory Barriers Clearinghouse, “Transit-Oriented Affordable Housing,” *Breakthroughs* Volume 8, Issue 1, (Jan 2009). http://www.huduser.org/rbc/newsletter/vol8iss1_1.html.

³⁸Ibid.

³⁹Ibid.

⁴⁰Urban Land Institute. *Creating Walkable Places: Compact Mixed-Use Solutions*. (Washington DC: Urban Land Institute, 2006), 27-28.

⁴¹Ibid., 31.

⁴²Ibid.

⁴³Ibid.

⁴⁴Regulatory Barriers Clearinghouse, “Transit-Oriented Affordable Housing,” *Breakthroughs* Volume 8, Issue 1, (Jan 2009). http://www.huduser.org/rbc/newsletter/vol8iss1_1.html.

- Regarding transfer of development rights (TDR) and purchase of development rights (PDR) ordinances, high-density receiving areas located in and around transit areas (train stations, bus terminals, etc.) make land and transportation integration far more efficient.

6. Create station-area plans.

- Station-area plans “function as scripts for guiding public and private investments in and around transit stops.”⁴⁵
- Key components of TOD-friendly station-area plans, as defined in a literature review conducted by Gwen Chisholm, include the following:
 - *Results of a market feasibility study.* According to the Puget Sound Regional Council (1999), local governments are usually best positioned to perform station-area market analysis, though transit agencies sometimes are able to conduct such assessments just as well.
 - *A physical plan for streets, pathways, utilities, mitigations and community enhancement.* Some observers recommend establishing a capital-improvements program that clearly denotes public commitments and responsibilities for physically supporting TODs.
 - *A land use plan.* In addition to being prescriptive, the plan should identify specific steps that need to be taken to create the densities and land use mixes necessary to support and sustain future transit services.
 - *A staging plan.* Land use planning tends to be spatial in nature; however, attention must also be given to the phasing of major improvements over time, specifying who will do what and when.
 - *Regulatory and fiscal incentives.* Good station-area plans not only lay down the rules but also offer incentives, such as tax abatement or density bonuses that reward developers for actions that support TOD.⁴⁶
- Locate station areas ¼ to ½ mile around a station. Griffin (2004) finds that people will walk 5-15 minutes to or from a transit station, which equates to between a ¼ to ½ mile walk.⁴⁷ If other types of transit systems are available in the area such as local buses, shuttles, park-n-rides, and bike-n-rides, the “catchment area” could be extended to 4 ½ miles.⁴⁸
- Griffin outlines three station-area zones—the core area, the neighborhood ring, and the support area.⁴⁹ The core area is within a five-minute walk of the station, the neighborhood ring area is within a 10-15-minute walk, and the support area is

⁴⁵Transit Cooperative Research Program and Federal Transit Administration. *Transit-Oriented Development and Joint Development in the United States: A Literature Review*. Number 52. Subject Area: VI Public Transit. Responsible Senior Program Officer: Gwen Chisholm. (October 2002). http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_rrd_52.pdf, 16.

⁴⁶Ibid., 16-17.

⁴⁷Griffin, Kenneth W. *Building Type Basics for Transit Facilities*. (New Jersey: John Wiley & Sons Inc., 2004), 55.

⁴⁸Ibid.

⁴⁹Ibid.

approximately a 20-minute walk or greater.⁵⁰ The table below shows the residential and commercial density needs for various types of transportation as defined by New Jersey Transit. It also shows that residential densities are approximately twice in core areas what they are in neighborhood areas.

Intensity of Land Use and Transportation Relationship

Residential Use	Commercial Use	Transportation Compatibility
15+ units/acre	50+ employees/acre	Supports rail or other high-capacity service
7-14 units/acre	40+ employees/acre	Supports local bus service
1-6 units/acre	2+ employees/acre	Supports cars, carpools, and vanpools

(Source: New Jersey Transit⁵¹)

Residential Minimum Housing Densities: Core vs. Neighborhood Area (units/acre)

Core	Neighborhood
10	4
15	7
22	10
45	15

(Source: Triangle Transit Authority⁵²)

7. Include TOD policies in county and municipal comprehensive plans.

- DeCoursey and Athey in *Transit-Oriented Design: Illustration of TOD Characteristics* (2007) highlight key concepts that comprehensive plans should reflect:
 - Express a commitment to a regional vision of high-capacity transit connections between regional centers or in development corridors (Greater Cleveland Regional Transit Authority).
 - Direct development along transit corridors to create stronger TODs (Smart Growth Network, 2003).
 - Increase transit-oriented development by adding infill stations on existing transit lines and retrofitting existing stations (Smart Growth Network, 2003).
 - Encourage appropriate new office development to locate in transit-supportive areas through the amendment of land use classifications and the provision of infrastructure, etc. (City of Calgary).

⁵⁰Ibid.

⁵¹Ibid., 57.

⁵²Ibid.

- Promote land use efficiency and convenience by encouraging new housing close to transit facilities and within mixed-use centers (City of Calgary).
- Support high-quality transit services that attract riders (Greater Cleveland Regional Transit Authority).
- Preserve and reinvest in established residential neighborhoods adjacent to the transit corridor (Leach).
- Use TOD to help achieve regional growth goals. TOD can be used to help address the regional jobs/housing balance and to encourage economic and community development. It can function as a key component of regional transportation and traffic-management programs and can be a basic element of a regional mobility program by helping to move people to jobs, schools, and recreation (Urban Land Institute).
- Incorporate by-right smart-growth redevelopment into existing communities' master plans (Smart Growth Network, 2002).⁵³

8. Modify ordinances to promote mixed-use zoning in TOD areas.

- Cervero, Seskin, Zupan, et al. (1996) state that “with areas served by transit, land use mix and urban design can encourage transit use, balance directional flows along transit lines, and reduce automobile use.”⁵⁴
- The city of Beaverton, Ore., has a transit-oriented, mixed-use zoning system that is worth review. Beaverton has 13 Multiple Use Districts defined in the Zoning Map for the city.⁵⁵ Seven districts are designated transit-oriented or station-oriented.⁵⁶ Many of the defined districts are station areas or station communities zoned around train stations, others are town-centers defined to varying densities.⁵⁷ The Development Code can be viewed at the Beaverton website: www.beavertonoregon.gov/departments/cdd/). This code outlines the various land uses that contribute to the mixed-use/transit-oriented environment public officials are aiming continually to create in Beaverton. An example ordinance for a Station Area – Medium Density Residential District is listed in Appendix 1.

⁵³Institute for Public Administration (William J. DeCoursey and Lorene Athey) and the Delaware Department of Transportation. *Transit-Oriented Design: Illustrations of TOD Characteristics, A Working Paper*. (November 2007). <http://dspace.udel.edu:8080/dspace/bitstream/19716/3103/1/TODworkingpaper.pdf>, 51.

⁵⁴*Ibid.*, 302.

⁵⁵Beaverton Government. *City of Beaverton Zoning Map*. (October 1, 2008). http://www.beavertonoregon.gov/departments/gis/maps/current_zone_11x17.pdf.

⁵⁶*Ibid.*

⁵⁷*Ibid.*

- For additional reference, the city of Gresham, Ore., has 19 mixed-use districts that include transportation specific districts such as Transit Development Districts of varying densities, a Station Center District, and a Downtown Transit District.⁵⁸

9. Lead by example on TOD.

- Construct local and state government buildings at TOD sites as much as possible.

10. Identify characteristic requirements for TOD sites to create future evaluation framework.

- Establish methodological framework for TOD site evaluation.
- Create baseline evaluation variables and weighted-scoring methodology for identifying TOD opportunities with the highest potential for success.

Recommendation #2: Create patterns of future land development that support transit-ready communities.

Future land development in Delaware must correspond with future transportation investments. Even in areas where transportation infrastructure is not yet in place, land development must occur in a way that easily integrates into a larger transportation network.

Implementation Strategies

1) Develop transit-supportive zoning districts.

- Create Multimodal Transportation Districts (MMTD). Williams and Seggerman's "Model Regulations and Plan Amendments for Multimodal Transportation Districts" provides sample comprehensive plan and ordinance language for local planners to review when contemplating creation of MMTD policies.⁵⁹
- Transit-supportive zoning districts should be corridors that follow major transit lines such as rail lines, bus lines, and any future BRT lines.

2) Connect the Perryville station of the Maryland Area Regional Commuter (MARC) rail system to the Newark station of the Southeastern Pennsylvania Transit Authority (SEPTA) commuter-rail system and connect the northern Delaware commuter rail service to Dover, Del., This may also be accomplished through the establishment of Bus Rapid Transit (BRT) systems between northern Delaware and Dover, Del.

⁵⁸Gresham, Oregon City Government. *The City of Gresham, Oregon: Land Use District Definitions*. (Accessed 10/15/08). <http://greshamoregon.gov/city/city-departments/planning-services/development-planning/template.aspx?id=3588#cmu>.

⁵⁹Williams, Kristine M. and Karen E. Seggerman, National Center for Transit Research, *Model Regulations and Plan Amendments for Multimodal Transportation Districts*, Tampa, FL: Center for Urban Transportation Research, University of South Florida, April 2004.

- This is an ambitious and costly endeavor that is still in the planning stages, but this would be the best incentive for TOD in northern Delaware. Such an interstate connection would finally connect a multi-state network of rail transportation systems extending from Philadelphia and areas north to Washington, D.C., and areas extending as far west as Martinsburg, W.Va.⁶⁰
- Currently, one of the hurdles to constructing rail infrastructure expansion in Delaware is demand assessment. For example, studies show that the total population numbers and land use patterns in Kent County are not sufficient to support a Dover-line extension.⁶¹ In the same way that infrastructure placement can encourage use; transit infrastructure placement is dependent on existing need, not projected need. Often, demand projections are grossly inaccurate.⁶² Therefore, this necessitates decisive action on the part of local land use-planning departments in order to spur high-density, mixed-use development within current and projected transit corridors. To use the Kent County example again, the DKCMPO already mapped ¼-mile transit corridors on either side of current transit lines, perhaps this could be applied to potential future transit lines such as the current rail line running through the center of the county. Special zoning, incentive packages, and fast-track approval processes for transit-oriented corridors can prepare the way for future transportation investment.
- President Obama has outlined an aggressive policy focused on infrastructure that will encourage projects such as the Perryville-Newark connection and the Dover connection based on the availability of significant federal funding. The White House statement on transportation infrastructure reads:

President Obama and Vice President Biden will make strengthening our transportation systems, including our roads and bridges, a top priority. As part of this effort, Obama and Biden will create a National Infrastructure Reinvestment Bank to expand and enhance, not supplant, existing federal transportation investments.⁶³

- A January 16, 2009 *Time* magazine article places the total infrastructure investment at \$65 billion as part of the current economic-stimulus package.⁶⁴ This funding will be spent on highways and bridges, transit, rail, aviation, environmental infrastructure, Army Corps of Engineers, brownfields, federal buildings, and Coast Guard and maritime administration.⁶⁵ Top Democrat Congressman James Oberstar reports that “all the

⁶⁰McGrath, Michael H, Chief of Planning, Delaware Department of Agriculture. “Expand Regional Public Transit Network to Power the Future” *Delaware News Journal*, (January 11, 2008), <http://www.delawareonline.com/apps/pbcs.dll/article?AID=/200901110345/OPINION14/90110004>.

⁶¹Dover/Kent County Municipal Planning Organization. *Long Range Transportation Plan*. (May 4, 2005). <http://www.doverkentmpo.org/indexmpo.html>.

⁶²Flyvberg, Bent, Mette Skamris Holm and Søren L. Buhl. "How (In)accurate Are Demand Forecasts in Public Works Projects? The Case of Transportation." *Journal of the American Planning Association*, vol. 71, no. 2, Spring 2005, pp. 131-146.

⁶³The White House. *The Agenda: Urban Policy, Strengthen Core Infrastructure*. http://www.whitehouse.gov/agenda/urban_policy/.

⁶⁴Newton-Small, Jay. “Congress’s Point Man on Infrastructure Spending”. *Time Magazine*. (January 16, 2009). <http://www.time.com/time/nation/article/0,8599,1872051,00.html>.

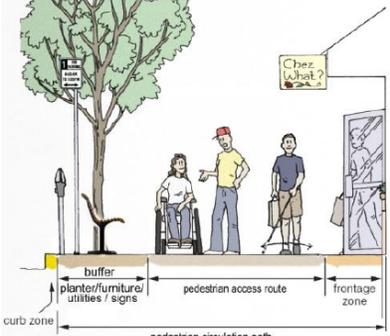
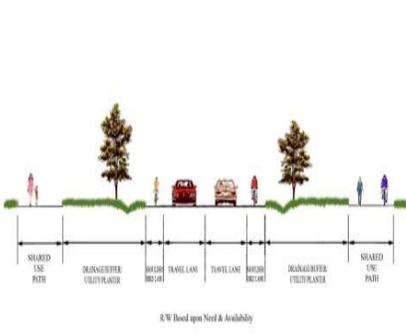
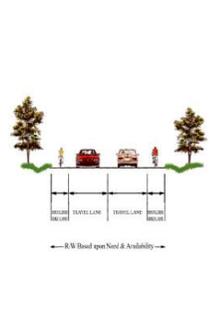
⁶⁵Ibid.

money will go to projects that are shovel-ready — meaning they've completed their environmental-impact studies, the engineering and design plans have been approved and certified, and in the case of roads, the rights of way have been acquired.”⁶⁶ Therefore, Delaware public officials must use all deliberate speed to ensure that all state projects applicable to the economic-stimulus package are “shovel ready.”

- In order to increase cost efficiency, the Dover project connections could occur in phases with the first connection being made at Middletown, Del., the second at Smyrna/Clayton, Del., and the third at Dover, Del.

3) Strengthen DelDOT “Complete Streets” Policy.

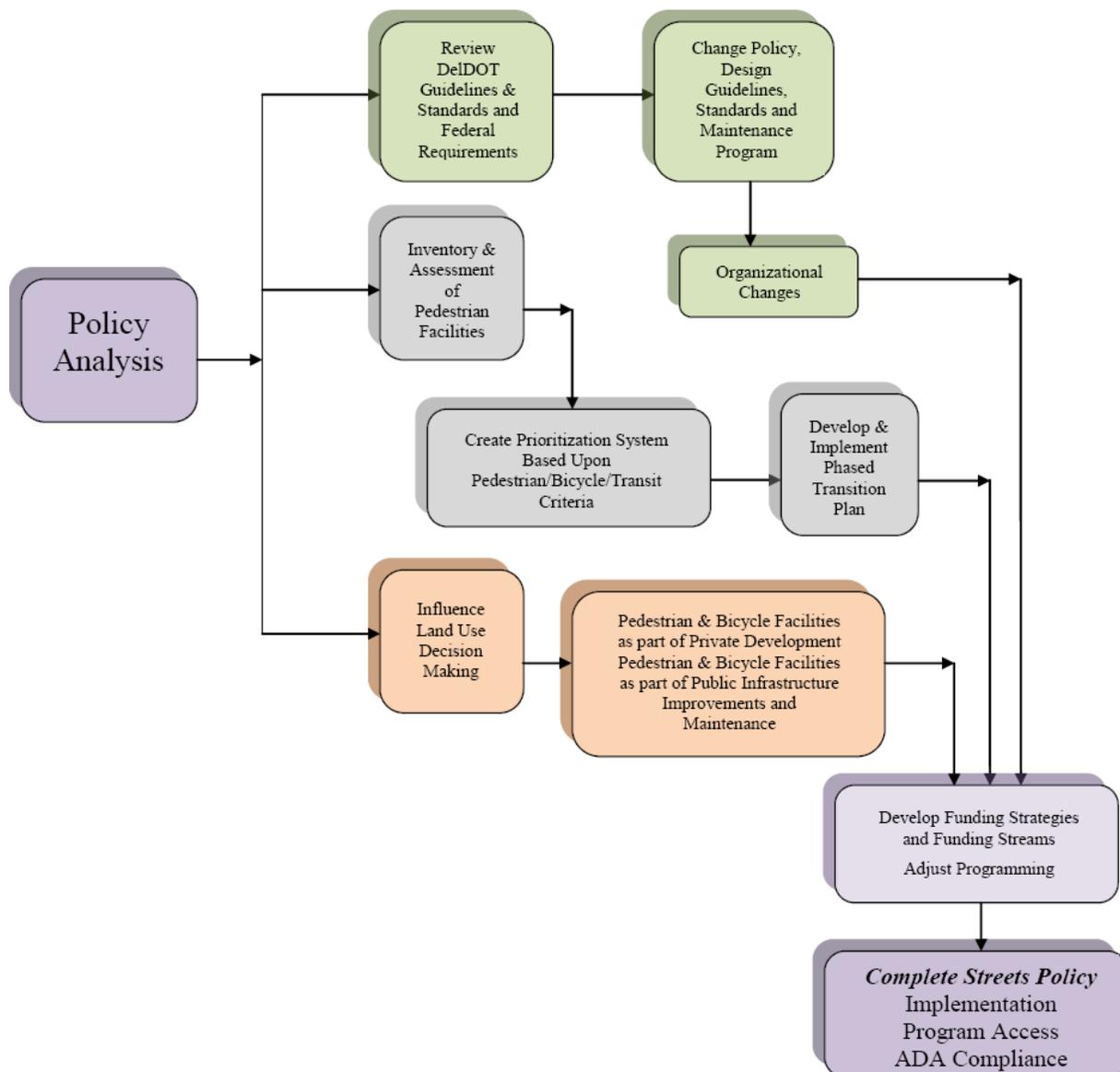
- “Complete Streets” integrate multi-modal paths, roadways, bike lanes, and mass-transit stops into one balanced transportation route. Currently, DelDOT officials are writing a white paper on how to improve Delaware’s “Complete Streets” policy. This is a very positive development, and the recommendations from the analysis should be implemented. Below is an excerpt from the policy initiative depicting complete-street classifications for differing land uses.

Urban Landscapes <i>(highest volume of pedestrian activity)</i>	Suburban Landscapes <i>(medium volume of pedestrian activity)</i>	Rural Landscapes <i>(lowest volume of pedestrian activity)</i>
<ul style="list-style-type: none"> • Bicycle Lanes or Share the Road Signage • Accessible Sidewalks with an Adequate Pedestrian Access Route and ADA Compliant Curb Ramps • Crosswalks • Medians with Pedestrian Refuge Areas • Bus Pull-off Areas as Warranted • Special Bus Lanes as Warranted • Accessible Bus Shelters • Accessible Pedestrian Signals with Count-Down Clocks • Streetscape Amenities – Landscaping, Shaded Areas, Seating, Bike Storage 	<ul style="list-style-type: none"> • Bicycle Lanes or Shoulders (5 to 6 feet) • Share the Road Signage • Accessible Sidewalks with an Adequate Pedestrian Access Route and ADA Compliant Ramps • Crosswalks as Needed & Appropriate • Bus Pull-off Areas as Warranted • Accessible Bus Shelters as Warranted • Accessible Shared Use Pedestrian/Bicycle Paths or Trails • Bike Storage at Activity Centers 	<ul style="list-style-type: none"> • Shoulders, 5 to 6 feet wide, to accommodate both pedestrians and Bicyclists • Share the Road Signage
		

(Source: Delaware Department of Transportation Complete Streets Policy Paper, March 2009)

DelDOT also developed a policy-analysis flow chart that depicts the process in which complete-streets elements are incorporated into a broader planning process framework.

⁶⁶Ibid.



(Source: Delaware Department of Transportation Complete Streets Policy Paper, March 2009)

- A starting point is to declare an intention to create “Complete Streets.” For instance, a South Carolina Department of Transportation Commission simply passed a resolution with language that states “...bicycling and walking accommodations should be a routine part of the Department's planning, design, construction, and operating activities.”⁶⁷ This resolution allows wiggle room for public officials but, nonetheless, states an intention to implement a positive goal.
- The National Complete Streets Coalition hosts “Complete Streets” workshops that allow for effective public participation in the process. If “Complete Streets” policies are to be enacted, public approval and education is of vital importance. DeIDOT should consider

⁶⁷Thunderhead Alliance. *Guide to Complete Streets Campaigns*. (March 2006). <http://www.thunderheadalliance.org/pdf/Guide%20Excerpts.pdf>, 8.

hosting such public workshops or soliciting the National Complete Streets Coalition for assistance in hosting the workshops after the completion of the internal white paper.

- Complete Streets funding can be tied to other project funding such as new road projects, road resurfacing projects, or other transportation infrastructure projects. This could be enacted by new ordinances, internal DelDOT policy changes, or changes to the Delaware state code.
- The next step is to pass an implementation requirement. An Oregon statute has stronger language stating, “Footpaths and bicycle trails (bikeways and walkways) including curb cuts or ramps as part of the project, shall be provided wherever a highway, road or street is being constructed, reconstructed or relocated.”⁶⁸ In response to such a stringent statute, certain exceptions to the policy must be considered as well. For instance, one exception to implementing Complete Streets policies is excessive cost. Most ordinances or policies set the limit at 20 percent.⁶⁹ This means that Complete Streets enhancements cannot be made if the cost of such measures exceeds 20 percent of the project cost. Policy makers must give special attention to exactly what “total project cost” means. The *Guide to Complete Streets Campaigns* rightly states that “sidewalks may be a significant cost if the project is defined as paving of a one-mile road subsection, but may make up a smaller portion when the project is defined more broadly to include all improvements in the whole corridor.”⁷⁰ Indeed, “total project cost” calculations could either hinder or encourage more use of Complete Streets. Other exceptions might be that Complete Streets policies are unnecessary in the area of concern or that bicycle and pedestrian movement is prohibited in a given area do to a potentially dangerous environment.⁷¹
- Consult emergency medical staff on Complete Streets implementation. Complete Streets policies often favor narrower streets in order to decrease auto-centric transportation systems. Often local emergency medical officials and the state Fire Marshal are against such street narrowing measures because they are not conducive to high speed emergency vehicles such as fire trucks. Any Complete Streets policies must be reviewed by emergency medical professionals so that maximum safety can be ensured as public policy makers convert auto-centric transportation systems to fully integrated transportation systems.
- Create “Walkable Districts” at the county and municipal level.⁷² Such districts would give “highest priority [. . .] to pedestrian/bike/transit movement, vehicular [movement would be] secondary.”⁷³ Such districts would be located at town-centers and within high-density, mixed-use zones.
- Create and implement a Walkable Town/City Plan. Such a plan could include an inventory of current walkability and an identification of key areas for walkability

⁶⁸Ibid.

⁶⁹Ibid., 10.

⁷⁰Ibid.

⁷¹Ibid., 9.

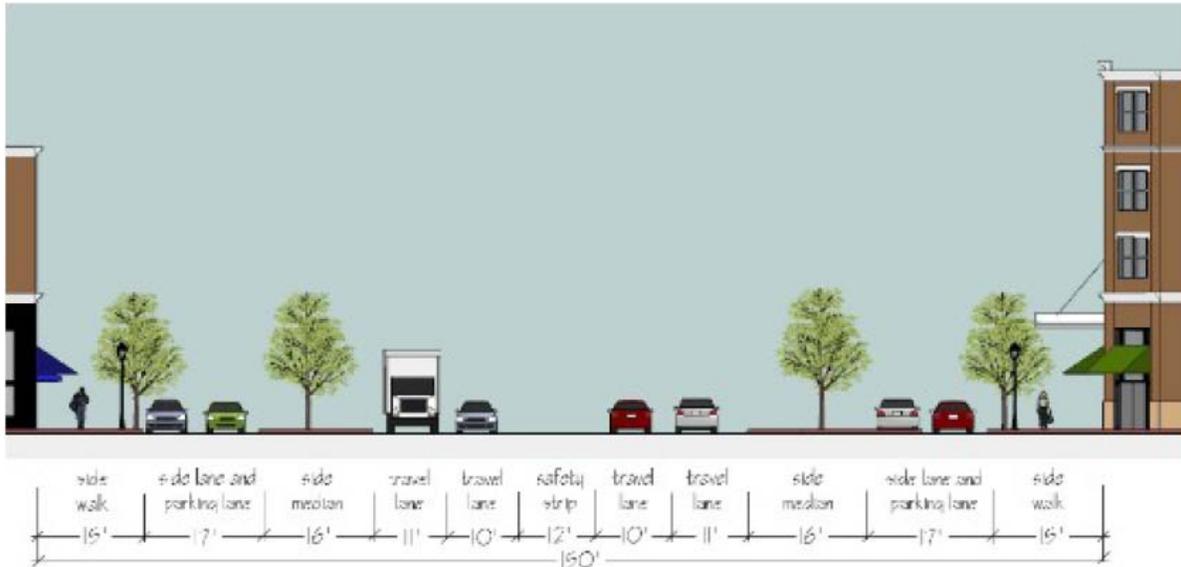
⁷²Sirota, Stuart and TND Planning Group. *Achieving Complete Streets in Maryland and Delaware, Maryland/Delaware APA Conference*. (November 21, 2008).

<http://www.delawareapa.org/Images/Conf%20Presentations/Sirota%20Complete%20Streets.pdf>, 18.

⁷³Ibid.

improvement. For example, the city of Towson, Md., has a walkability plan that focuses on specific roads, streetscaping, intersection design, signage and way-finding, a bicycle plan, and implementation strategies with clear benchmarks for progress.

- Use Multi Way Boulevards in downtown-centers. Below is a graphic showing an example of Multi Way Boulevard width and layout.



(Source: www.delawareapa.org/Images/Conf%20Presentations/Sirota%20Complete%20Streets.pdf, 26.)

The graphic below is a topical view of a Multi Way Boulevard.

Multi-way Boulevard

- 4 lanes of through traffic in the center, plus a textured median and turning pockets at intersections.

- Side medians with trees, landscaping, and transit stops.

- Side lanes for access to businesses, parking, and local streets.

- Pedestrian friendly streetscape with wide sidewalks, street trees, landscaping, and pedestrian-scale lighting.

(Source: www.delawareapa.org/Images/Conf%20Presentations/Sirota%20Complete%20Streets.pdf, 26.)



4) Foster pedestrian-oriented development.

- Pedestrian-oriented development (POD) provides vibrant pedestrian facilities that enhance the local transit system efficiency. Characteristics of POD include sidewalks, crosswalks, street lighting, street-trees, and high-density, mixed-use development.
- Use POD for economic-development. PODs have great private-sector advantages. Gary M. Cusumano, of Newhall Land, says:

A pedestrian-oriented, mixed-use town-center brings together everything people want in one attractive, interesting place, often generating two to three times the draw of a traditional shopping center. . . Second, many people are hungry for homes in a town-center that allows them to walk to stores, restaurants, entertainment, even work. Third, many employers want the wide mix of uses—all within walking distance—that a town-center provides, because that turns their office location into an amenity workers particularly value, which aids in their recruitment and retention efforts.⁷⁴

Projects (with a focus on walkability) offer greater development flexibility, premiums for both the value of housing and the location, and higher projected long-term returns—all positive economic features that can make a project more feasible and more appealing to lenders.⁷⁵ “Although this finding only relates to housing projects, similar advantages exist for compact, high-density, mixed-use retail, office, and town-center projects.”⁷⁶ Winter Springs Town-center, a 240-acre project started in 2002 in Winter Springs, Fla., had retail rents averaging \$18 to \$23 per square foot, compared with \$16.50 per square foot at the nearest competing shopping center.⁷⁷ “Despite higher rents, 90,000 out of 135,000 square feet of retail space [2/3 of all retail space] was leased before the first building had been completed.”⁷⁸ Residential housing units also sold 10 to 15 percent above comparable housing in the market area, averaging \$325,000.⁷⁹ The Keller Town-center located in Keller, Tex.; Easton Town-center located in Columbus, Ohio; Southlake Town Square located in Southlake, Tex.; and Reston Town-center located in Reston, Va., all have similar private-sector advantages that include higher annual rents per square foot, higher apartment rents, and higher hotel occupancy rates.⁸⁰

The Canada Mortgage and Housing Corporation found that “most public-sector costs were 48 percent lower in a nonresidential pedestrian-oriented development than in a nonresidential conventional development.”⁸¹ The same study found that public-sector

⁷⁴Urban Land Institute. *Creating Walkable Places: Compact Mixed-Use Solutions*. (Washington DC: Urban Land Institute, 2006), 65.

⁷⁵*Ibid.*, 68.

⁷⁶*Ibid.*

⁷⁷*Ibid.*, 65.

⁷⁸*Ibid.*

⁷⁹*Ibid.*

⁸⁰*Ibid.*

⁸¹*Ibid.*, 69.

costs for residential pedestrian-oriented development are five percent lower than conventional developments.⁸²

Private-sector advantages exist with POD. Studies show that home value is greater for POD and that consumers pay more for such types of development. An Urban Land Institute publication (1999) found that, among the New Urbanist communities examined, PODs on average are worth \$20,189 more than homes in surrounding communities.⁸³ Another study focused on 48,000 home sales in Washington, Ore.⁸⁴ Homebuyers were found to spend on average \$24,255 more for “design elements that make walking easier, such as smaller block sizes, more street connectivity, and pedestrian access to commercial uses, and proximity to parks and transit.”⁸⁵ Overall, pedestrian-friendly town-centers outperform traditional suburban real estate.

- Take every feasible opportunity to locate government buildings such as libraries, schools, civic centers, city hall, performing arts centers, a convention center, parks, open spaces, or museums in or around POD. Public investment in development that supplements communities rather than becoming a detriment to the community encourages private investment. Often, pedestrian-friendly developers provide parks and open spaces in their projects; public investment will offset the costs for public infrastructure as provided by the private-sector.
- Streamline local site-review processes in order to fast-track approval and limit regulatory red tape on POD. Examples and specific strategies are listed under the fifth Implementation Strategy in the TOD Section of this document.
- Create a Pedestrian Level of Service (LOS) to use during the development-review process. Below is a sample LOS calculation published by a pedestrian advocacy group in San Francisco, Calif., that could serve as a starting point for discussion in Delaware:

Pedestrian Level of Service (LOS) Definition

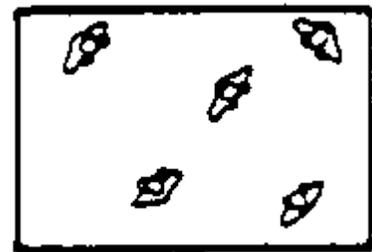
(Note that the definition of Pedestrian LOS does not include anything about mobility (except for the possibility of running into another pedestrian) or safety. This is an inherent bias of the LOS that strongly favors automobiles over pedestrians.)

LEVEL OF SERVICE A

Average Pedestrian Area Occupancy: 13 sq. ft./ person or more

Average Inter-Person Spacing: 4 ft., or more

Description: Standing and free circulation through the queuing area is possible without disturbing others within the queue.

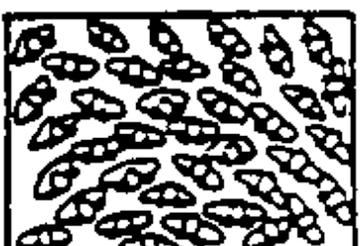


⁸²Ibid.

⁸³ Urban Land Institute. *Creating Walkable Places: Compact Mixed-Use Solutions*. (Washington DC: Urban Land Institute, 2006), 61.

⁸⁴Ibid.

⁸⁵Ibid.

<p style="text-align: center;">LEVEL OF SERVICE B</p> <p><i>Average Pedestrian Area Occupancy:</i> 10 to 13 sq. ft./person <i>Average Inter-Person Spacing:</i> 3.5 to 4.0 ft. <i>Description:</i> Standing and partially restricted circulation to avoid disturbing others within the queue is possible.</p>	
<p style="text-align: center;">LEVEL OF SERVICE C</p> <p><i>Average Pedestrian Area Occupancy:</i> 7 to 10 sq ft/person <i>Average Inter-Person Spacing:</i> 3.0 to 3.5 ft <i>Description:</i> Standing and restricted circulation through the queuing area by disturbing others within the queue is possible; this density is within the range of personal comfort.</p>	
<p style="text-align: center;">LEVEL OF SERVICE D</p> <p><i>Average Pedestrian Area Occupancy:</i> 3 to 7 sq. ft./ person <i>Average Inter-Person Spacing:</i> 2 to 3 ft. <i>Description:</i> Standing without touching is possible; circulation is severely restricted within the queue and forward movement is only possible as a group; long-term waiting at this density is discomforting.</p>	
<p style="text-align: center;">LEVEL OF SERVICE E</p> <p><i>Average Pedestrian Area Occupancy:</i> 2 to 3 sq. ft./ person <i>Average Inter-Person Spacing:</i> 2 ft. or less <i>Description:</i> Standing in physical contact with others is unavoidable; circulation within the queue is not possible; queuing at this density can only be sustained for a short period without serious discomfort.</p>	
<p style="text-align: center;">LEVEL OF SERVICE F</p> <p><i>Average Pedestrian Area Occupancy:</i> 2 sq. ft./ person or less <i>Average Inter-Person Spacing:</i> Close contact with persons <i>Description:</i> Virtually all persons within the queue are standing in direct physical contact with those surrounding them; this density is extremely discomforting; no movement is possible within the queue; the potential for panic exists in large crowds at this density.</p>	

(Source: www.walksf.org/pedestrianLOS.html)

- In order to encourage POD people must answer “yes” to the following questions:
 - Is this place interesting?
 - Would I like to spend time here?
 - Are there things to do?
 - Is it safe to walk or lounge around?
 - Can I relax among trees, parks, or open spaces?

- A POD should include
 - Street-trees:
 - This provides shade for pedestrians and a separation between the auto-centric street and pedestrian space. The general ambiance of an area can be supplemented with street-trees.
 - Multiple factors impact selection of street-trees. These include, but are not limited to: 1) the community's recommended tree list, 2) the overall aesthetic value, 3) climatic concerns, 4) potential for disease and pests, 5) maintenance requirements, 6) the space available for root growth, and 7) the size of a mature tree crown and canopy.⁸⁶ Development of a tree list provides guidance to site developers so that when they are required to put trees in or if they choose to, they have a reference to utilize. Trees have various aesthetic qualities, and the citizens along with public officials and the private-sector must think about what aesthetic qualities of trees are most desirably to the community. Predictably, climatic concerns play into the street-tree equation since certain trees are more acclimated to certain environmental conditions than others. Governments should attempt to find the most durable trees that grow naturally in the local climate. If trees selected are from the climate that the local government body is in, usually they have more resistance to disease and insect infestation. Maintenance requirements must be addressed; if not, the trees could become detriments to walkability by blocking part of the walkway, obstructing the walkway with fallen limbs or above-ground roots. One way to avoid problems related to surface-root growth is to correctly assess what root growth will actually occur before the tree is planted. Lastly, actual canopy and crown size must be calculated in order to allow for adequate spacing of trees in relation to the street, nearby buildings, and the pedestrian pathway.
 - High-density:
 - Multiple uses must be located in close proximity. If development is low density, the ability for people to walk from place to place decreases because the distance between places increases.
 - Vertical Mixed-uses:
 - Ground Level: retail shops, restaurants, entertainment, convenience stores, etc.
 - Upper Level: office space, residential, apartments
- Create *dedicated pedestrian streets* where applicable. Key requirements for successful dedicated pedestrian street implementation are the following:

⁸⁶American Planning Association. *Planning and Urban Design Standards*. (Hoboken, New Jersey: John Wiley & Sons, Inc.), 2006, 492.

1) [addition of] new activity generators to draw more people to the central area, establishing a new base of market support, 2) a merchandising mix that is more competitive with suburban centers, 3) links among all the city center's major generators to foster market synergy among uses, and 4) street access and visibility, which are eliminated when a mall is created.⁸⁷

The best application of dedicated pedestrian streets in Delaware would be its most urban area, Wilmington. Future opportunities may exist in Dover and some coastal beach areas in southern Delaware.

The Barcelona example shown below highlights a typical dedicated pedestrian street dominated by pedestrian traffic with mixed land uses. Residential housing is above while commercial businesses are located at street level. Commercial office space might be mixed in with residential uses located above. The residential component can create a community atmosphere within the area, adding "local flavor." Open space or park areas might be located adjacent to dedicated pedestrian areas. The Barcelona photo shows street-tree canopies that provide shade to pedestrians. Mixed-uses provide a variety of 'things to do' which decides the success or failure of a dedicated pedestrian street. If people come to the street to live, work, and relax, the system will be more effective. If all or most people drive to get to the pedestrian street, parking becomes an issue. This may discourage a tourist population from traveling to a vibrant cultural hub that a dedicated pedestrian street can help to create. Integrating dedicated pedestrian streets with adjacent roadways with street-side parking would help alleviate the problem. As mentioned above, use of multi-way boulevards could provide adequate parking and mass-transit connections for dedicated pedestrian streets. The Barcelona street is wide enough to handle heavy pedestrian traffic and bicycle traffic. Dedicated pedestrian street-width must be carefully calculated. If a street is too narrow, crowding will occur. If a street is too wide, the area may look abandoned or deserted. Both factors may discourage pedestrian activity.

A Dedicated Street: Las Ramblas, Barcelona, Spain



(Source: http://depts.washington.edu/open2100/pdf/2_OpenSpaceTypes/Open_Space_Types/pedestrian_bike_streets.pdf)

⁸⁷Paumier, Cy, Urban Land Institute. *Creating a Vibrant City Center: Urban Design and Regeneration Principles*. (Washington DC: Urban Land Institute, 2004), 88.

The New York City example (below) shows a dedicated pedestrian side street concept with a bike lane and pedestrian lane divided by planted buffer. The pedestrian street is separated from the automobiles with post barriers.

New York City Dedicated Pedestrian Side Street



(Source: http://depts.washington.edu/open2100/pdf/2_OpenSpaceTypes/Open_Space_Types/pedestrian_bike_streets.pdf)

5) Create “Transit-Supportive Design Guidelines.”

- “Transit-Supportive Design Guidelines” promote “the physical development of properties and sites (and, to a lesser degree, subdivisions and corridors) in a manner that supports transit services.”⁸⁸ These guidelines can be provided to private-sector developers, planning officials, public policy-makers, and other relevant organizations so as to provide a framework for improving future development in Delaware.
- As with any guidelines created by government to persuade the private-sector to implement certain actions, incentives are key to success. Without proper incentives provided to developers for using “Transit-Supportive Design Guidelines,” the guidelines will be rendered useless. Possible incentive packages should be contemplated by local economic-development staff, planning officials, and private-sector developers. Tax incentives, regulatory incentives, fast-track planning-review processes, and fee reductions could all be considered to boost the use of design guidelines.
- The Canadian Institute of Transportation Engineers (July 2003) published *The Canadian Guide to Promoting Sustainable Transportation through Site Design*, which serves as an excellent reference for creating “Transit-Supportive Design Guidelines.”⁸⁹ The paper provides example guidelines, key principles, and case studies for the following categories: 1) land use planning, 2) site accessibility, 3) site layout and building design, 4) pedestrians, 5) bicycles, 6) transit, and 7) high occupancy vehicles.⁹⁰

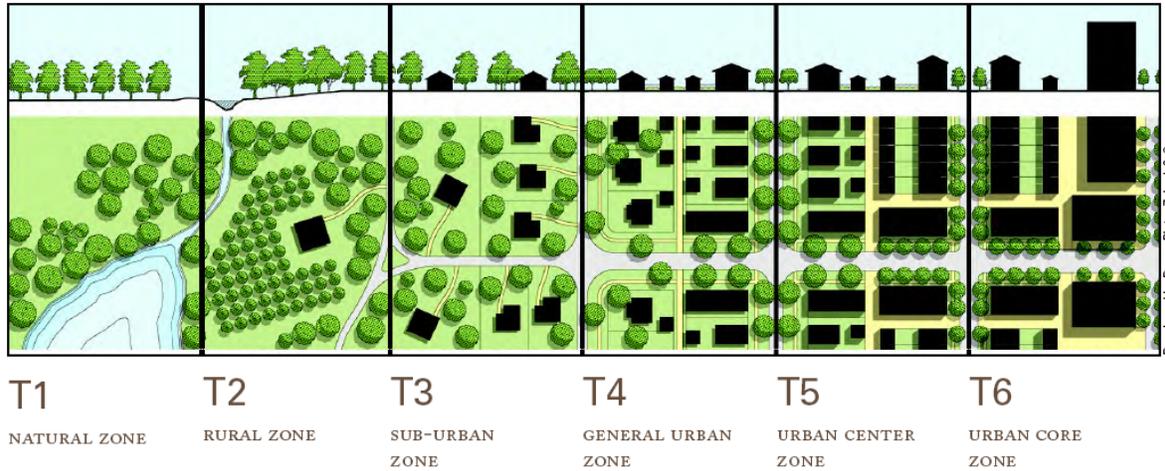
⁸⁸Transportation Research Board and National Research Council, *TRCP Report 55: Guidelines for Enhancing Suburban Mobility Using Public Transportation*, (Washington DC: National Academy Press, 1999), 19.

⁸⁹IBI Group, Noxon Associates, and DPL Consulting. Canadian Institute of Transportation Engineers. Interim Research Report – Needs Assessment and Best Practices: *The Canadian Guide to Promoting Sustainable Transportation through Site Design*. Canadian Institute of Transportation Engineers, July 2003.

⁹⁰Ibid.

- The town of Denton, Md., created a pattern book to guide development toward certain aesthetic styles and site layout. Some transportation interconnectivity guidelines are included.

For instance, the first graphic shows the development of a street grid pattern in conjunction with higher densities:



The below graphic shows various street types based on land use designations:



(Source: <http://rja-ltd.com/Denton%20Pattern%20Book%20March%202007.pdf>, pg 7)

- *A Guide to Land Use and Public Transportation for Snohomish County, Washington* (ntl.bts.gov/DOCS/GL.html) outlines various policy recommendations relating to zoning provisions for transit, subdivision/site design, Transportation Systems Management (TSM) for businesses, pedestrian facilities, and park-n-ride/carpooling facilities for suburban areas.
- The Ontario Ministry of Transportation created guidelines to direct development of all kinds to transit stops. The Ontario Ministry of Transportation Guideline states:

Official plans, or subdivision guidelines adopted by the municipality, should state that a significant majority of residence, jobs, or other activities/uses should be located within 400 (1/4 mile) meters of a transit stop. [Examples of possible implementation criteria include]:

90 percent of residences, jobs, or other activities/uses should be located within 400m (1/4 mile) walking distance of a transit stop or;

65 percent of residences, jobs, or other activities/uses should be located within 200m (1/8 mile) walking distance of a transit stop.⁹¹

This language should be applied to specific urban or rapidly growing suburban districts where growth in and around transit would support long-term public transportation priorities.

5) Create mixed-use zoning policies and incentives in future transportation priority areas.

- By fostering mixed-uses in future transportation investment areas, high-density transportation hubs are created which set the stage for successful transportation systems with high usage.
- The state of Oregon, a leader on mixed-use zoning ordinances, published the *Commercial and Mixed-use Development Code Handbook* to serve as “a guide to encouraging ‘smart’ commercial and mixed-use development through public policy and land use ordinances, including a model ordinance.”⁹²
- In Hong Kong, the City Planning Board embraced a package of proposals that included use of broad terms to provide greater flexibility to change land use.⁹³ A Hong Kong spokesman for the Planning Board stated, “Although ‘retail shop’ and ‘barber shop’ have similar planning implications, they are regarded as two types of uses at present because they are separately listed in the [ordinance]. With the introduction of broad terms—e.g. ‘shops and services’—all uses in the same broad use could be interchangeable, which would significantly reduce the need to apply for planning permission”⁹⁴
- Create fast-track approval policies for mixed-use development proposals. The *Mixed-use Development Handbook* states that “whatever zoning is in place, the approval process for mixed-use projects in many jurisdictions is often difficult and time-consuming, often discouraging rather than encouraging mixed-use development.”⁹⁵
- In Montgomery County, Md., county government officials have implemented a “Green Tape Program.”⁹⁶ The “Green Tape Program” is designed to create fast-track approval processes for development proposals located within the downtown Silver Spring district defined by county government as an area in need of mixed-use, transit-ready

⁹¹Morris, Marya, *Creating Transit-Supportive Land-Use Regulations*, Chicago, IL: American Planning Association, 1996, 4.

⁹²Schwanke, Dean, Project Director – Urban Land Institute, *Mixed-use Development Handbook (Second Edition)*, (Washington DC: Urban Land Institute, 2003), 146.

⁹³*Ibid.*, 147.

⁹⁴*Ibid.*

⁹⁵*Ibid.*, 151.

⁹⁶US Environmental Protection Agency. *Smart Growth Illustrated: Green Tape Program, Silver Spring, Maryland*. <http://www.epa.gov/dced/case/greentap.htm>.

revitalization.⁹⁷ The “Green Tape Program” consists of a “Green Tape Team” of members covering site design issues like fire, building, electrical, mechanical, accessibility, zoning, and signage. This team provides extra help with specified revitalization projects.⁹⁸ The objective of the program is to issue permits within two weeks of receiving the application.⁹⁹ Some developers receive permits in as little as two days, dependent on whether the developer took advantage of pre-design consultations.¹⁰⁰ The “Green Tape Program” reviewed or is reviewing more than 20 major developments and numerous small projects.¹⁰¹

- Public officials should also address the issue of multiple uses within the same building because “mixing uses within the same building places different uses in the closest possible proximity”¹⁰² thereby greatly encouraging multiple transportation uses within a given area. Mixed-use zoning regulations must be flexible enough to allow vertical mixed-use as well as horizontal mixed-use.

Recommendation #3: Engage the public.

The only way to implement ambitious transportation and land use integration policies is to engage and educate the public at every step along the way. The public may include citizens, public officials, community groups, business communities, politicians, and many others.

Implementation Strategies

1) DelDOT should hold meetings at various locations around the state each month to discuss all current and future transportation projects.

- Meetings should use a workshop format where two-way communication can occur between the audience and transportation officials.

2) Foster the use of design charrettes as often as possible.

- A design charrette is defined as:

a collaborative process for empowering people who are important to a project to work together and support the results; a rigorous and inclusive process that produces the strategies and implementation documents for complex and difficult design and planning projects . . . It is a continuous effort of at least four days long and uses continual feedback loops as leverage for change. The charrette is one of the most effective methods of getting public support for . . . increasing density and integrating a mix of uses and a diversity of residences.¹⁰³

⁹⁷Ibid.

⁹⁸Ibid.

⁹⁹Ibid.

¹⁰⁰Ibid.

¹⁰¹Ibid.

¹⁰²Morris, Marya, *Creating Transit-Supportive Land-Use Regulations*, Chicago, IL: American Planning Association, 1996, 30.

¹⁰³Schwanke, Dean, Project Director – Urban Land Institute, *Mixed-use Development Handbook (Second Edition)*, (Washington DC: Urban Land Institute, 2003), 155-56.

- Walters also outlines five key factors for successful design charrettes: “1) involve everyone from the start to foster a shared community vision, 2) manage the process effectively to build trust between the team and the public, 3) work across disciplines to maximize group learning and productivity, 4) work in short feedback loops to test ideas and stimulate public participation, and 5) work in detail to test the feasibility of alternative concepts.”¹⁰⁴
- A basic design charrette usually includes the following deliverables:
 - Master plan map
 - Three-dimensional renderings
 - Project report
 - Detailed presentation (usually in PowerPoint)
 - Digital files of all major drawings and recommendations ready for uploading to the client’s website.¹⁰⁵
- Other additional deliverables resulting from a charrette may include the following:
 - Marketing posters/brochures
 - Supplementary PowerPoint presentations for technical or economic details
 - Form-based codes/design guidelines
 - Market feasibility analyses
 - Traffic-impact analysis/modeling
 - Physical site models or computer simulations¹⁰⁶
- Significant variability in cost exists, depending on what type of design charrette a community wants. To hold a four-day design charrette that includes pre-charrette analysis and creation of post-charrette deliverables, depending on the scope of the project, the cost is estimated to be between \$80,000 - \$180,000.¹⁰⁷ For a charrette that includes publicity materials, plans, recommendations, traffic analyses and calculations, physical presentation models, and high-quality dimensional computer simulations, the cost is approximately \$150,000.¹⁰⁸ For 7-10-day charrettes conducted by well-respected

¹⁰⁴Ibid., 167.

¹⁰⁵Ibid., 175.

¹⁰⁶Ibid., 176.

¹⁰⁷Ibid., 175.

¹⁰⁸Ibid., 176.

national or international firms, the cost can rise to \$250,000.¹⁰⁹ Post-charrette deliverables alone can cost an additional \$10,000-\$15,000.¹¹⁰

- During the community planning workshops, officials should use the Google Sketch-Up program. Officials can use the program to create quick site plan ideas that reflect what the community members are visualizing at the workshop in real time. Citizens could explain the ideas they have, get a planning official to sketch it out, analyze how it looks, and change it as they see fit. This real-time technology will allow citizens to be instrumental in the planning process and help officials to better educate the public on various planning strategies. Often citizens are opposed to higher-density, mixed-uses, or interconnectivity, but if they see visual representations of these policies in an appealing and workable way their opinions may change.

Recommendation #4: Review and implement ordinance changes that create more transit-supportive land use.

By engaging in a process of vibrant debate and idea-sharing public officials can use tools that can foster greater transit-supportive land use in Delaware. The following recommendations serve as a spring board for discussion.

Implementation Strategies

1) Add interconnectivity language to ordinances at the local level.

- The city of Eugene, Ore., has the following language as part of its decision criterion for subdivisions:

The proposed subdivision is laid out to provide safe, convenient, and direct bicycle and pedestrian access to nearby and adjacent residential areas, transit stops, neighborhood activity centers such as schools and parks, commercial areas, and industrial areas, and to provide safe, convenient, and direct transit circulations. At a minimum, nearby is interpreted to mean uses within ¼ mile that can reasonably be expected to be used by pedestrians and uses within 1 to 2 miles that can reasonably be expected to be used by bicyclists.¹¹¹

- Municipalities and county governments should review cul-de-sac policies and lower cul-de-sac length to 500 ft. or less. Nozzi states “. . . for pedestrians and bicyclists, cul-de-sacs-particularly those greater than 500 feet long-create substantial travel barriers.”¹¹² Article IV, 187-58(G)(1) of the Kent County Code sets a cul-de-sac length limit at 600 ft. Article III, 99-17(G) of the Sussex County Code reads that all cul-de-sac streets shall not exceed 1,000 ft.

¹⁰⁹Ibid.

¹¹⁰Ibid.

¹¹¹Morris, Marya, *Creating Transit-Supportive Land-Use Regulations*, Chicago, IL: American Planning Association, 1996, 4.

¹¹²Nozzi, Dom. *Road to Ruin: An Introduction to Sprawl and How to Cure It*. (Westport, Connecticut: Praeger, 2003), 30.

- Add language to limit the use of cul-de-sacs such as the following:

Cul-de-sacs, dead end streets or alleys, and flag lots* shall only be permitted when the following conditions are met:

- One or more of the following conditions prevent a required street connection: excess slope (20 percent or more); presence of a wetland or other body of water that cannot be bridged or crossed; existing development on adjacent property that prevents a street connection; presence of a freeway or railroad.
 - A street pattern that either meets standards for connection and spacing or requires less deviation from standards is not possible.
 - An access way is provided consistent with the standards for access ways.
 - Cul-de-sacs shall be as short as possible and shall not exceed 400 feet in length.
 - *Note: Flag lots are lots that do not front on or abut a public street that are accessed via a narrow, private right-of-way. They can result in an increased number of curb cuts.¹¹³
- Another example reads: “Cul-de-sacs shall be permitted only where there is no feasible connection with an adjacent street. If cul-de-sac streets represent more than 10 percent of the total lane miles in a development, the subdivider shall be required to demonstrate that alternative internal circulation systems that would minimize use of cul-de-sacs are infeasible.”¹¹⁴
 - Add language to create allowances for future street extensions. For example, a provision could state: “Where the subdivision or partition is adjacent to land likely to be divided in the future, streets, bicycle paths, and access ways shall continue through to the boundary lines of the area under the same ownership as the subdivision or partition, where the planning or public works director determines that such continuation is necessary to provide for the orderly division of such adjacent land or the transportation and access needs of the community.”¹¹⁵
 - Another provision could read: “Where the subdivision or partition includes only part of the area owned by the applicant, the planning director or public works director may require a sketch of a tentative layout of streets, bicycle paths, and access ways in the remainder of said ownership.”¹¹⁶
 - Alleyway creation provides more interconnectivity between land uses and off-street parking. San Diego, Calif., implemented language on alleyway requirements that reads: “For wholly new developments or any redevelopment designed to increase existing gross

¹¹³Morris, Marya, *Creating Transit-Supportive Land-Use Regulations*, Chicago, IL: American Planning Association, 1996, 5.

¹¹⁴*Ibid.*

¹¹⁵*Ibid.*, 7.

¹¹⁶*Ibid.*

floor area by 50 percent or more on a lot or premises abutting an improved alley, the required off-street parking area shall be so located that the abutting alley may be utilized for vehicular access to and from said lot or premises.”¹¹⁷

- The city of Minneapolis, Minn., defines streets in terms of land use type served rather than specific road type created. For example, the Access Minneapolis: Ten-Year Transportation Action Plan (2008) defines eight place types: 1) Activity Centers, 2) Commercial Corridors, 3) Community Corridors, 4) Neighborhood Commercial Nodes, 5) Transit Station Areas, 6) Growth Areas, 7) Major Retail Centers, and 8) Industrial Employment Districts.¹¹⁸ The Minneapolis streets organizational chart is listed in Appendix 2.
- Ensure *integrated access-management* to reduce traffic conflicts. Public officials can ensure that adjacent unsignaled commercial driveways do not necessarily result in two access points, but one access point in order to create interconnectivity between the commercial uses.¹¹⁹ This is a simple policy to enact during the planning process that can improve interconnectivity throughout Delaware. In order to provide incentive to the private-sector, *comprehensive access-management codes* should be adopted that tie density allowances to access-point consolidation.¹²⁰
- Encourage short walking distances by limiting block length. Nozzi states, “if our goal is short walking distances, our community is going to want short, walkable blocks, not longer than 300 to 500 feet.”¹²¹ He further states that “if long blocks are unavoidable, they can be shortened with shortcut alleys or arcades or sidewalk paths that run from street to street in the middle of a block.”¹²²

2) Create minimum, rather than maximum, densities.

- Often density requirements attached to zoning classifications are used as a way to limit density in a given area, such as an agricultural area or a suburban district. On the other hand, minimum-density requirements could be used to encourage higher-density development in designated growth corridors, future growth corridors, transit corridors, and urban areas.

3) Eliminate or reduce minimum setbacks.

¹¹⁷Ibid., 17.

¹¹⁸City of Minneapolis. *Access Minneapolis: Ten-Year Transportation Action Plan, Design Guidelines for Streets and Sidewalks*. (February 22, 2008). http://www.ci.minneapolis.mn.us/public-works/trans-plan/DesignGuidelines_StreetsSidewalks_022708.pdf, 2-1 – 2-5.

¹¹⁹Miller, John S., Roger W. Howe, Ryan P. Hartman, and Arkopal K. Goswami. *Options for Improving the Coordination of Transportation and Land Use Planning in Virginia*. (Charlottesville, VA: Virginia Transportation Research Council, March 2004), 32.

¹²⁰Ibid.

¹²¹Nozzi, Dom. *Road to Ruin: An Introduction to Sprawl and How to Cure It*. (Westport, Connecticut: Praeger, 2003), 117.

¹²²Ibid.

4) Eliminate or reduce minimum parking standards in favor of maximum parking standards for specific districts (Central Business Districts, downtowns, sites near a high capacity transit station).

- A San Mateo County (Calif.) District study advocated that “for small-scale infill development to occur, on-site parking requirements must be no higher than 1.3 spaces per housing unit.”¹²³
- If automobile-centric parking standards are eliminated or reduced, non-automobile transportation standards need to be established to ensure that with decreased automobile parking, other transportation facilities are adequate. Excessive parking requirements and regulations can inhibit a planner’s ability to adequately assess actual parking needs at a given site. The one-size-fits-all approach eliminates a more effective case-by-case parking-evaluation process.
- Bicycle facilities, pedestrian facilities, transit services, or transit-supportive plazas can substitute for automobile parking standards during the preliminary stages of site-review. Although Chapter 33.266.110 Minimum Required Parking Spaces of the Portland, Ore., Code defines minimum parking requirements, there are exceptions tied to other transportation systems. The purpose of the ordinance section sets the tone:

The purpose of required parking spaces is to provide enough on-site parking to accommodate the majority of traffic generated by the range of uses that might locate at the site over time. Sites that are located in close proximity to transit, have good street connectivity, and good pedestrian facilities may need little or no off-street parking. Transit-supportive plazas and bicycle parking may be substituted for some required parking on a site to encourage transit use and bicycling by employees and visitors to the site. The required parking numbers correspond to broad use categories, not specific uses, in response to this long-term emphasis. Provision of carpool parking, and locating it close to the building entrance, will encourage carpool use.¹²⁴

Later in the ordinance, exceptions based on alternative transportation systems are defined. First, the mass-transit element:

Exceptions for sites well served by transit. There is no minimum parking requirement for sites located less than 500 feet from a transit street with 20-minute peak-hour service. Applicants requesting this exception must provide a map identifying the site and TriMet schedules for all transit routes within 500 feet of the site.¹²⁵

Second, the bicycle element:

¹²³San Mateo County District. Strategies for Advancing TOD. San Mateo County: San Mateo County Transit District, September 2007.

¹²⁴City of Portland, Oregon. Chapter 33.266 Parking and Loading, City of Portland Code. (Last updated 1/16/09). <http://www.portlandonline.com/auditor/index.cfm?c=28197&a=53320>, 2-3.

¹²⁵Ibid., 3-4

Bicycle parking may substitute for up to 25 percent of required parking. For every five non-required bicycle parking spaces that meet the short or long-term bicycle parking standards, the motor vehicle parking requirement is reduced by one space. Existing parking may be converted to take advantage of this provision.¹²⁶

Not only does the bicycle element provide a parking substitution standard, it provides incentivized substitution. Any successful substitution language should include a baseline standard *and* incentivized allowances.

Third, the plaza element:

Substitution of transit-supportive plazas for required parking. Sites where at least 20 parking spaces are required and where at least one street lot line abuts a transit street may substitute transit-supportive plazas for required parking, as follows. Existing parking areas may be converted to take advantage of these provisions. Adjustments to the regulations of this paragraph are prohibited.

Transit-supportive plazas may be substituted for up to ten percent of the required parking spaces on the site;

The plaza must be, adjacent to and visible from the transit street. If there is a bus stop along the site's frontage, the plaza must be adjacent to the bus stop;

The plaza must be at least 300 square feet in area and be shaped so that a 10 ft. x10 ft. square will fit entirely in the plaza; and

The plaza must include all of the following elements:

- A plaza open to the public. The owner must record a public-access easement that allows public access to the plaza;
- A bench or other sitting area with at least five linear feet of seating;
- A shelter or other weather protection. The shelter must cover at least 20 square feet. If the plaza is adjacent to the bus stop, TriMet must approve the shelter; and
- Landscaping. At least ten percent, but not more than 25 percent of the transit-supportive plaza must be landscaped to the L1 standard of Chapter 33.248,
- Landscaping and Screening. This landscaping is in addition to any other landscaping or screening required for parking areas by the Zoning Code.¹²⁷

Fourth, the motorcycle element:

Motorcycle parking may substitute for up to five spaces or five percent of

¹²⁶Ibid.

¹²⁷Ibid.

required automobile parking, whichever is less. For every four motorcycle parking spaces provided, the automobile parking requirement is reduced by one space. Each motorcycle space must be at least four feet wide and eight feet deep. Existing parking may be converted to take advantage of this provision.¹²⁸

5) Implement transportation-mode integration policies.

- Complete the establishment of a Cecil County Transportation Management Association (CCTMA). Since private-sector employers in Cecil County, who are located close to the Delaware state line, contribute to the regional transportation network, WILMAPCO is currently completing a study on the feasibility of a CCTMA.¹²⁹ The report focuses on TMA structure, development, and overall feasibility with emphasis on creating a business model for effective CCTMA development.¹³⁰ The report is expected to be released in June 2009.¹³¹
- Some localities have required a certain level of bicycle facilities be installed with each new development or with relevant land uses. Poulsbo, Wash., has language on bicycles that reads:

With the approval of the Director, developers may receive credit in the form of a decrease in required vehicle parking. By providing at least five covered bicycle parking facilities, one vehicle parking space will be eliminated. No more than ten percent of the required vehicle parking for that land use shall be replaced with covered parking facilities.¹³²

- Some localities will simply tie bicycle parking to required automobile parking.¹³³ The bicycle parking requirement is reflected as a percentage of required vehicles spaces.¹³⁴ Austin, Tex., and Salem, Ore., chose 5%; Boulder, Colo., and Madison, Wis., chose 10 percent, while Deschutes County, Ore., and Ashland, Ore., each chose 20 percent.¹³⁵ Each county or municipality must make an independent decision regarding this idea that factors in the goal of transportation integration while also realistically assessing the actual amount of cyclists who would make use of facilities.
- A provision written like the one above was intended for mass-transit linkages and reads:

An existing use (within 400 feet of a transit route) may reduce the number of required parking spaces by up to ten percent to provide a transit stop and related amenities, including a public plaza, pedestrian sitting areas, and additional

¹²⁸Ibid.

¹²⁹Zegeye, Tigist, Executive Director, WILMAPCO. Interview conducted 4/28/09.

¹³⁰Ibid.

¹³¹Ibid.

¹³²Morris, Marya, *Creating Transit-Supportive Land-Use Regulations*. (Chicago, IL: American Planning Association, 1996), 18.

¹³³Ibid, 25.

¹³⁴Ibid.

¹³⁵Ibid.

landscaping (however such landscaping shall not exceed 25 percent of the total area dedicated for transit-oriented uses).¹³⁶

- Another example, with different methodology, regarding transit reads:

The director may reduce the number of required off-street parking spaces when one or more scheduled transit routes provide service within 660 feet of the site. The amount of the reduction shall be based on the number of scheduled transit runs between 7:00-9:00#a.m. and 4:00-6:00#p.m. each business day up to a maximum reduction as follows: 1) Four percent for each run serving land uses in the (Government/Business Services) section and the (Manufacturing) section up to a maximum of 40 percent; and, 2) Two percent for each run serving land uses in the (Recreation/Culture) section, (General Services) section, and the (Retail/Wholesale) section up to a maximum of 20 percent.¹³⁷

Recommendation #5: Create an agenda highlighting “low hanging fruit” and a timeline for action for implementation of study recommendations.

Implementation Strategies

1) Create an agenda highlighting “low hanging fruit.”

- Policy makers and public officials must agree upon the possible and the impossible, the relevant and the irrelevant. Important questions must be answered:
 - What study recommendations can be easily implemented?
 - Which recommendations are most important? Which are most necessary at the current time?
 - Upon which recommendation(s) can everyone agree?

2) Create a timeline for action.

- Once attainable recommendations are agreed upon, a timeline for implementation must be created in order to keep government officials on a schedule of action. Benchmarks and periodic goals should be set so that progress can be made with all deliberate speed.

3) Use podcasts/web conferencing/teleconferencing to conduct meetings periodically to assess progress on project implementation strategies.

- Respondents in discussions during a project workshop highlighted, as a result of budget constraints, the inability for many to continue to attend frequent meetings on this topic

¹³⁶Ibid, 18.

¹³⁷Ibid.

around the state, so the general consensus of those in attendance was to use alternative communication strategies when possible.

Review of Current Transportation/Land Use Integration Practices in Delaware

The following is an examination of policies, ordinances, comprehensive plans, and regulations to find out what Delaware officials are currently doing to better integrate transportation with land use. The following organizations and government bodies will be examined:

Delaware Office of State Planning Coordination (OSPC)
 Delaware Department of Transportation (DelDOT)
 Delaware Transit Corporation (DTC)
 New Castle County Government
 Kent County Government
 Sussex County Government
 Wilmington Area Planning Council (WILMAPCO)
 Dover/Kent County Municipal Planning Organization (DKCMPO)
 Salisbury/Wicomico County Municipal Planning Organization (SWCMPO)
 Delaware Transportation Management Association (DTMA)

Office of State Planning Coordination (OSPC)

The Office of State Planning Coordination (OSPC) currently facilitates transportation/land use integration in Delaware through: 1) the Livable Delaware Initiative, 2) Strategies for State Policies and Spending, 3) Preliminary Land Use Service (PLUS) Process, and 4) the “Better Models for Development in Delaware” strategies.

OSPC administers the Livable Delaware initiative, the guiding principles of which are to

- guide growth to areas that are most prepared to accept it in terms of infrastructure and thoughtful planning
- preserve farmland and open space
- promote infill and redevelopment
- facilitate attractive, affordable housing
- protect our quality of life while slowing sprawl¹³⁸

The first principle focuses on encouraging development in and around transportation infrastructure. The third and fifth principles relate to the first in that both principles focus land use toward growth areas with infrastructure, thereby decreasing sprawl development. The Livable Delaware initiative is implemented by the Governor’s Livable Delaware Advisory Council (LDAC), grant funding programs, and state agency Livable Delaware implementation plans. The LDAC is made up of officials from all levels of government, business associations, community-interest groups, and natural resource-conservation groups who create subcommittees to address issues such as the following:

- Community design, which developed the “Better Models for Development in Delaware” publication.

¹³⁸Ibid.

- Green infrastructure, which created the Green Infrastructure Strategy added to the Strategies for State Policies and Spending.
- Affordable housing
- Annexation
- Dispute resolution
- Infill & redevelopment
- Livability indicators
- Transfer of development rights (TDR)¹³⁹

By fostering infill and redevelopment as well as implementing TDR ordinances, the LDAC subcommittees encourage high-density development in designated growth areas. Thirty-five studies of local land use patterns found that “in dense mixed-use environments . . . walking and transit use are more prevalent.”¹⁴⁰ Frank and Pivo (1995) found that commercial density is just as important, if not more so, than residential density on transportation-mode choice.¹⁴¹ A Cervero study found that “for low density environments, it does not matter whether the land uses are mixed or not; the probability of transit use is about the same. When the density goes up, so does the probability of transit use.”¹⁴² This highlights the real importance of the infill/redevelopment component toward integrating land use and transportation integration.

Aside from the subcommittee assignments, LDAC plays a role in the county and municipal comprehensive plan certification processes. After a draft comprehensive plan is reviewed through the PLUS process, local government officials and LDAC members meet to discuss any changes made as a result of the PLUS review.¹⁴³ If LDAC is satisfied with the final draft plan, the plan is sent to the Governor’s office with a recommendation for certification.¹⁴⁴ The LDAC review provides yet another opportunity for ensuring that land use plans match short and long-term transportation infrastructure priorities.

OSPC also implements the Livable Delaware initiative through the “Livable Delaware Grant Program.” The grant funding provides 50 percent matching funds up to \$10,000 for counties and municipalities to address issues related to development, transportation, land use regulation, and planning.¹⁴⁵ The grant application outlines the following types of aid that qualify for approval:

- Pre-planning organization such as training of planning commission and local officials
- Post planning for implementation of comprehensive plan
- Annexation plans
- Zoning, subdivision, and other land use regulations
- Community design projects
- Main Street planning

¹³⁹Ibid.

¹⁴⁰Maryland State Highway Administration et al. *Smart Growth and Transportation: Issues and Lessons Learned, report of a conference, September 8-10, 2002, Baltimore, Maryland.* (Washington DC: Transportation Research Board of the National Academies, 2005), 30

¹⁴¹Ibid., 30.

¹⁴²Ibid.

¹⁴³Livable Delaware Advisory Council. *Meeting Summary.* (January 7, 2007). http://stateplanning.delaware.gov/livedel/ldac/20070130_ldac_minutes.pdf

¹⁴⁴Ibid.

¹⁴⁵Office of State Planning Coordination, Livable Delaware Grant Funding, <http://stateplanning.delaware.gov/services/grants.shtml>.

- Other projects needed to comply with the Livable Delaware laws¹⁴⁶

The grants can be used with infrastructure-planning grants, thereby providing localities with more assistance, given the predicament of limited planning staff and budgetary constraints.¹⁴⁷ Funds are also available through the Limited Funding Pool of the Infrastructure Planning Account for municipal comprehensive plan updates.¹⁴⁸

Pursuant to Executive Order #14 (March 2001), 15 state agencies have created Livable Delaware implementation plans that outline what they will do to support the Livable Delaware initiative.¹⁴⁹ For example, one goal of the DelDOT's Livable Delaware implementation plan is to improve the transit-planning process. To achieve this goal, the following actions are recommended: 1) foster more cooperation among all levels of government, 2) require that local ordinances include language that addresses and facilitates transit use, 3) require that developers and public agencies incorporate transit planning into the initial phases of the development-review process, and 4) establish transit overlay zones.¹⁵⁰

Another method used by OSPC to integrate land use and transportation is through the "Strategies for State Policies and Spending" (SSPS). SSPS is a comprehensive framework for encouraging growth in areas with infrastructure or projected for infrastructure investment. The map below shows the SSPS map. The map defines four priority levels for state spending on infrastructure. Level 1 represents the highest priority for infrastructure investment. Level 4 represents the lowest priority for infrastructure investment.

¹⁴⁶Office of State Planning Coordination, State of Delaware. *Livable Delaware Funding: Application Guidelines for Livable Delaware Assistance to Municipalities and Counties*.

http://stateplanning.delaware.gov/livedel/services/livable_delaware_grants.pdf, 2.

¹⁴⁷Ibid.

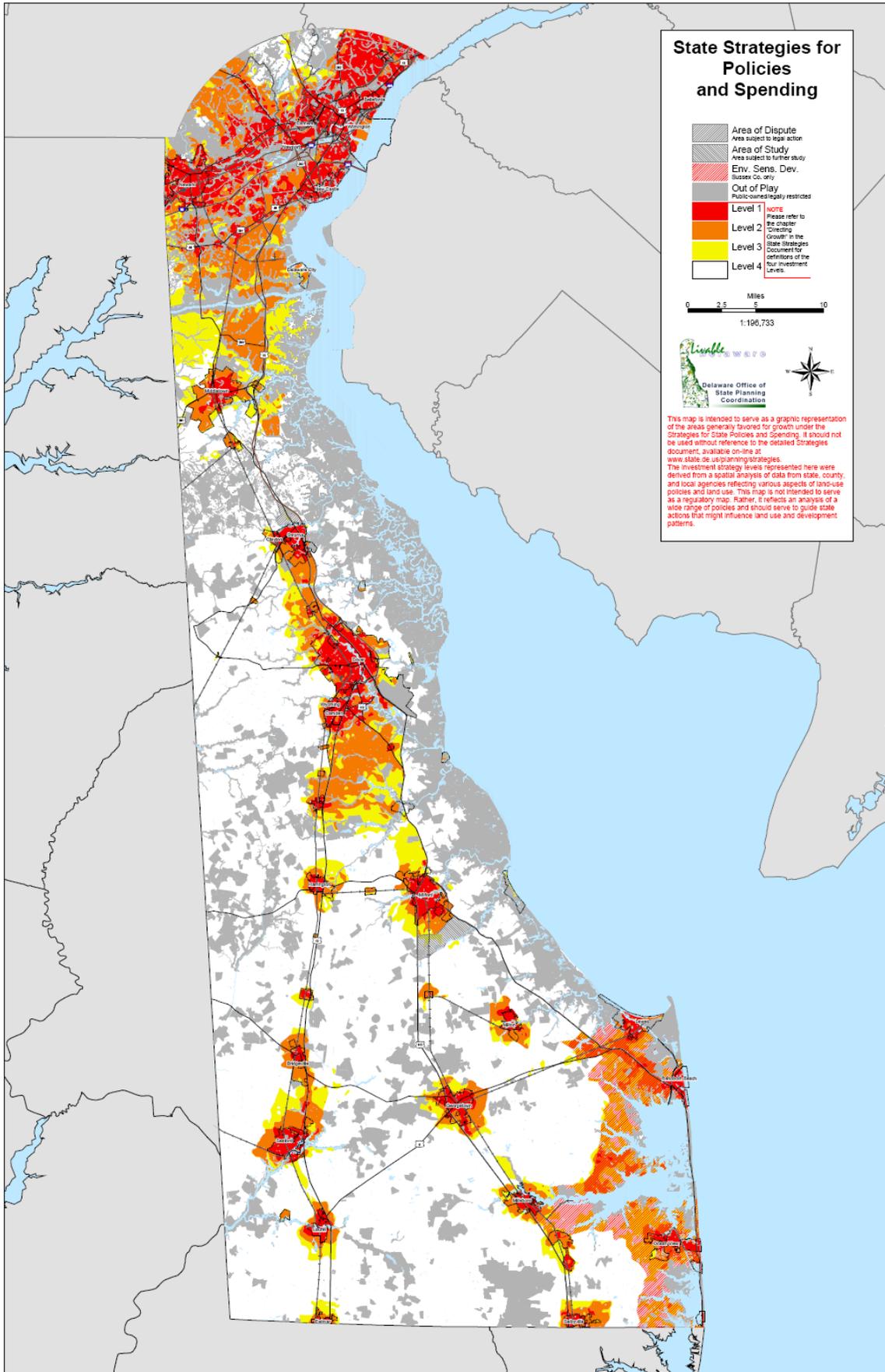
¹⁴⁸Ibid.

¹⁴⁹Office of State Planning Coordination, State of Delaware. *An Overview of Livable Delaware*.

<http://stateplanning.delaware.gov/livedel/aboutagency.shtml>.

¹⁵⁰Delaware Department of Transportation. *Livable Delaware Implementation Plan*.

http://DelDOT.gov/information/pubs_forms/manuals/livable_delaware/index.shtml, 2.



OSPC also conducts the PLUS Review process, which mandates that major land use changes throughout the state of Delaware be reviewed by the state before submission to local government planning-review processes.¹⁵¹ Major land use proposals reviewed by OSPC include specific site-development proposals, comprehensive plan amendments, or comprehensive plan drafts. Title 29, Chapter 92. Subchapter II: Pre-application Reviews of the Delaware State Code sites specific conditions that mandate preliminary project review by OSPC:

§ 9203. Local land use planning actions subject to review process.

(a) All projects meeting any 1 of the following criteria shall undergo a pre-application meeting and review process as set forth in this chapter:

(1) Major residential subdivisions with internal road networks and more than 50 units, excluding previously recorded residential subdivisions of any size which have not been sunsetted.

(2) Any non-residential subdivision involving structures or buildings with a total floor area exceeding 50,000 square feet, excluding any previously approved and recorded non-residential subdivision regardless of floor area size, or any site plan review involving structures or buildings with a total floor area exceeding 50,000 square feet, excluding any previously approved and recorded non-residential site plan review regardless of floor area size.

(3) Rezoning, conditional uses, site plan reviews and/or subdivisions, within environmentally sensitive areas, as identified within any local jurisdiction's comprehensive plan as certified under § 9103 of this title.

(4) Annexations inconsistent with the local jurisdiction's comprehensive plan as certified under § 9103 of this title.

(5) Applications for rezoning if not in compliance with the local jurisdiction's comprehensive plan as certified under § 9103 of this title.

(6) Any other project which is required to be referred to the State for pre-application review by local jurisdiction regulations.

(7) Any local land use regulation, ordinance or requirement referred to the Office of State Planning Coordination by a local jurisdiction for the purpose of providing the jurisdiction with advisory comments. The land use regulations, ordinances or requirements that are to be referred to the Office of State Planning Coordination may be specified in a jurisdiction's Memorandum of Understanding.

(8) County and municipal comprehensive plans as required by Titles 9 and 22.

¹⁵¹Office of State Planning Coordination. Preliminary Land Use Service. <http://stateplanning.delaware.gov/plus/plus.shtml>.

(b) Any applicant may voluntarily request to participate in the pre-application review process and shall make such requests in writing to the Office of State Planning Coordination. (74 Del. Laws, c. 186, § 1.)

The PLUS review committee includes representatives from the Department of Natural Resources and Environmental Control, DelDOT, State Housing, State Fire Marshal's Office, Department of Agriculture, Department of Education, and Department for Historic Preservation¹⁵², although any applicable state agency is provided the opportunity to submit comments on a project.¹⁵³ Of significant importance, the Delaware Transit Corporation gives comments on proposals to further connect these developments with transportation planning. For example, a 2007 development proposal called Chickberry Farms in Sussex County received comments from ten government agencies.¹⁵⁴

Regarding specific development proposals, rezonings, and substantial commercial or industrial-use expansions, the PLUS review application consists of 45 questions.¹⁵⁵ In addition to answering questions, applicants also submit detailed site maps that give more information about the development's location. These maps show SSPS levels in the area showing whether a proposed development occurs in a high priority state investment level or not. Additional maps outline environmental, land use, and topographical attributes of the site.

The PLUS review has eight questions specifically related to transportation issues.¹⁵⁶ The first deals with Delaware SSPS, asking the applicant in which SSPS level the development proposal is located.¹⁵⁷ The OSPC recommendation regarding the application review will be impacted by the level designation. If the development is located in a Level 4 area, the chances for state investment in transportation infrastructure are very low to none. For example, the Vessels project located in Sussex County¹⁵⁸ consisted of 213 residential units to be built on 162.95 acres of Level 4/Environmentally Sensitive land.¹⁵⁹ As a result of the designation, the OSPC stated "because of its location in a Level 4 area and the negative impacts to the environmental features on this site, the State objects to the development of this parcel and respectfully requests that this site plan be denied."¹⁶⁰ By doing so OSPC, forces the localities to absorb the government services and infrastructure costs.

The second question asks if the developer will fund any transportation infrastructure improvements. The third question asks about the general traffic-impact of the development, how many vehicle trips will be generated, and how many truck (excluding vans/pick-up trucks) trips will be generated.¹⁶¹ The fourth question asks whether the development will connect with public

¹⁵²Livable Delaware Advisory Council. *Meeting Summary*. (January 30, 2007). http://stateplanning.delaware.gov/livedel/ldac/20070130_ldac_minutes.pdf.

¹⁵³Ibid.

¹⁵⁴Office of State Planning Coordination. *PLUS Review – PLUS 2007-05-07; Chickberry Farms*. (June 8, 2007). http://stateplanning.delaware.gov/plus/comments/2007-05-07_response.pdf.

¹⁵⁵Ibid.

¹⁵⁶Ibid.

¹⁵⁷Ibid.

¹⁵⁸Office of State Planning Coordination, State of Delaware. *PLUS Review – 2008-01-05; Vessels*. http://stateplanning.delaware.gov/plus/comments/2008-01-05_response.pdf, 1.

¹⁵⁹Ibid.

¹⁶⁰Ibid., 2.

¹⁶¹Office of State Planning Coordination. *PLUS Review – PLUS 2007-05-07; Chickberry Farms*. (June 8, 2007). http://stateplanning.delaware.gov/plus/comments/2007-05-07_response.pdf.

roads and, if so, how many connections will there be.¹⁶² The fifth asks whether the rights-of-way will be public, private, or town.¹⁶³ The sixth asks whether street frontage will be applicable to the Corridor Capacity Preservation Program (CCPP).¹⁶⁴ If the development is applicable to this program, then specific transportation infrastructure improvements have to be addressed in order for the development to move forward. The CCPP is designed to keep certain roadway corridors free of congestion and traffic. The seventh question asks whether the developer would be willing to connect the site proposal with other developments in the area.¹⁶⁵ If developers are willing to create interconnectivity between developments, this provides for more mobility and transit integration. The last question relates to sidewalk provisions and bike/pedestrian network connections.¹⁶⁶

Regarding comprehensive plan reviews, a normal PLUS review consists of what is called a Comprehensive Plan Checklist.¹⁶⁷ Every comprehensive plan requires the inclusion of certain elements, without which the project is incomplete. From community design to historic preservation, the required elements are thorough and many. Although transportation issues tend to be a recurring theme within many comprehensive plans, the PLUS comprehensive plan review process checks for the inclusion of a separate transportation-mobility element in every plan.¹⁶⁸ Once the PLUS comprehensive plan review is completed, the checklist and comments from state agencies are sent to the applicant.¹⁶⁹ The county or municipal applicants are required to review the comments and checklist, make improvements to the comprehensive plan draft, and resubmit the plan with comments to the PLUS review committee.¹⁷⁰ OSPC, upon completion of the PLUS review, submits the comprehensive plan draft with a recommendation to LDAC for final review and possible certification.¹⁷¹ As stated previously, the LDAC-recommended plan is sent to the Governor for final review and certification.

Additional PLUS review processes are in place for amendments to municipal or county comprehensive plans. This application normally consists of a thorough explanation of the amendment and the reasoning for it.¹⁷² Upon review of the submitted amendment, state agencies have the ability to submit recommendations and certification comments.¹⁷³ Recommendations are suggestions that state agencies ask the applicants to follow. Certification comments are demands that, if not met, will result in a rejection of the application and a denial of certification approval for the amendment.¹⁷⁴

OSPC also published a report called “Better Models for Development in Delaware” in conjunction with the Conservation Fund and the LDAC Community Design Committee. The

¹⁶²Ibid.

¹⁶³Ibid.

¹⁶⁴Ibid.

¹⁶⁵Ibid.

¹⁶⁶Ibid.

¹⁶⁷Office of State Planning Coordination. *PLUS Review – 2008-02-07; Kent County Comprehensive Plan*. <http://stateplanning.delaware.gov/plus/projects/2008/2008-02-07.pdf>.

¹⁶⁸Ibid.

¹⁶⁹Ibid.

¹⁷⁰Ibid.

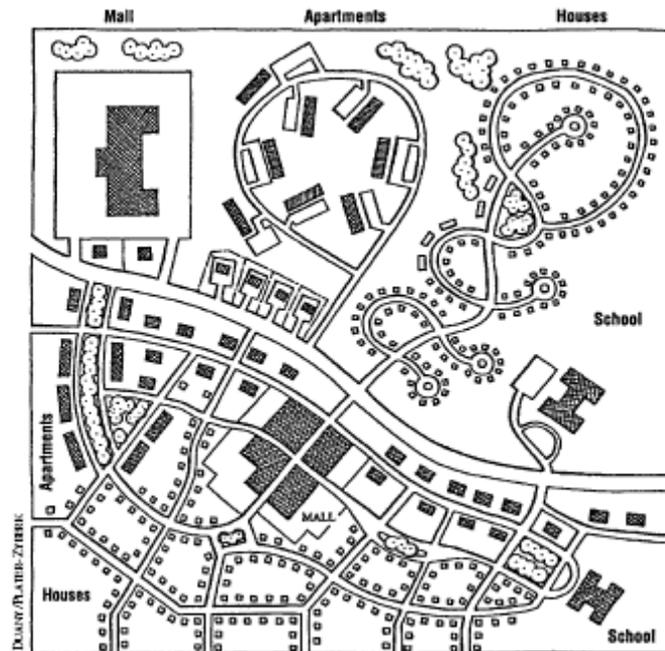
¹⁷¹Ibid.

¹⁷²Office of State Planning Coordination. *PLUS Review – 2008-01-06; Town of Ellendale Comprehensive Plan Amendment*. http://stateplanning.delaware.gov/plus/comments/2008-01-06_response.pdf.

¹⁷³Ibid., 2.

¹⁷⁴Ibid., 2.

report promotes traditional neighborhood development, which is defined by walkability, multi-modal transportation, and integration of mixed-uses into development design.¹⁷⁵ The report emphasizes creation of “streetscapes,”¹⁷⁶ which incorporate Complete Street concepts with a strong focus on “creating place.” This includes the introduction of street-side facades, historic street lamps, and wide pedestrian side walks. “Creating place” means that people are attracted to a location based on its aesthetics, prevalence of things to do, and its unique character as a public attraction. One of the key problems with establishing walkability and bicycle facilities in communities is the question of whether or not they will be used. Creating streetscapes encourages more use of these forms of transportation because individuals have more incentive to enjoy a place and walk around. The below map of a mixed-use development pattern embodies the goals of the report:



(SOURCE: Better Models for Development in Delaware, pg. 100)

The lower development follows a street grid pattern of dense housing and apartments, with a mall centrally located within the community and a school located adjacent to residential areas. The upper development is separated by use. The mall is detached from the housing, and the apartment complexes and the school are separated from the residential uses. This pattern of development increases the travel time for residents to take their children to school and for residents to shop at the mall. It is a less-efficient land use since it fragments what could be contiguous natural habitats or open spaces. Inclusion of graphics like this within the report provide private and public-sector actors with visual guidance for successful transportation and land use integration.

¹⁷⁵Office of State Planning Coordination and Livable Delaware Advisory Council Community Design Subcommittee, The Conservation Fund. *Better Models for Development in Delaware: Ideas for Creating More Livable and Prosperous Communities*. (March 2004).

http://www.conservationfund.org/sites/default/files/BetterModels_DE_low_res.pdf, 53.

¹⁷⁶*Ibid.*, 62.

Delaware Department of Transportation (DelDOT)

DelDOT is involved with transportation and land use integration during the earliest stages of the planning process. The following examination will cover these DelDOT land use/transportation integration policies: 1) intergovernmental cooperation, 2) the Council on Transportation, 3) “Statewide Rails-to-Trails/Rail-with-Trail System Master Plan,” 4) Corridor Capacity Preservation Program, and 5) Local Area Planning. DelDOT is included in the preliminary stages of almost every development-review process at the local, county, and state level. DelDOT is charged with developing mobility elements for county and municipal comprehensive plans.¹⁷⁷ DelDOT is consulted on the development and review of regional transportation plans as well as various other transportation related research conducted by all three MPOs in Delaware. Mobility elements of comprehensive plans become the regional transportation plans for local MPOs and counties.¹⁷⁸ These county-wide transportation policies are integrated into one state transportation plan that is also developed by DelDOT. At the local level, DelDOT has the responsibility of evaluating every entrance from a public road to private property¹⁷⁹ in order to ensure that entrances include bicycle and pedestrian facilities where applicable, especially in areas near mass-transit.¹⁸⁰

At the state level through the PLUS process, DelDOT input and comment on various development proposals, comprehensive plan updates, comprehensive plan amendments, and rezonings is given before the proposal reaches local planning-review processes. DelDOT makes recommendations in order to create transit-friendly and transit-ready communities that provide adequate transportation capacity. This includes bike connections and pedestrian connections.¹⁸¹ Furthermore, DelDOT is currently working on a white paper regarding Complete Streets in order to improve Delaware’s current Complete Streets policy. DelDOT recommendations to applicants or government officials become functional requirements since DelDOT, through state law, is given power to put in place proper regulations and policies that support safe and smooth flow of transportation in Delaware.¹⁸²

DelDOT also has the responsibility to enforce compliance with the federal Americans with Disabilities Act (ADA) regulations.¹⁸³

DelDOT implements federal regulations that help incorporate regions of Delaware that are not fully served by MPOs into the transportation-planning process. The 1998 federal Transportation Equity Act for the 21st Century (TEA-21) “required the states to give “non-metropolitan” locally elected and appointed officials a stronger role in statewide long-range transportation planning and capital improvement programming.”¹⁸⁴ Since Delaware is served by two established MPOs located in New Castle and Kent Counties, with one MPO still in the development stages, Sussex County is the only county relevant to the TEA-21 regulations. As mandated by TEA-21

¹⁷⁷Reeb, Ralph, Director of Planning, DelDOT, Interview conducted 10/16/08.

¹⁷⁸Ibid.

¹⁷⁹Ibid.

¹⁸⁰Ibid.

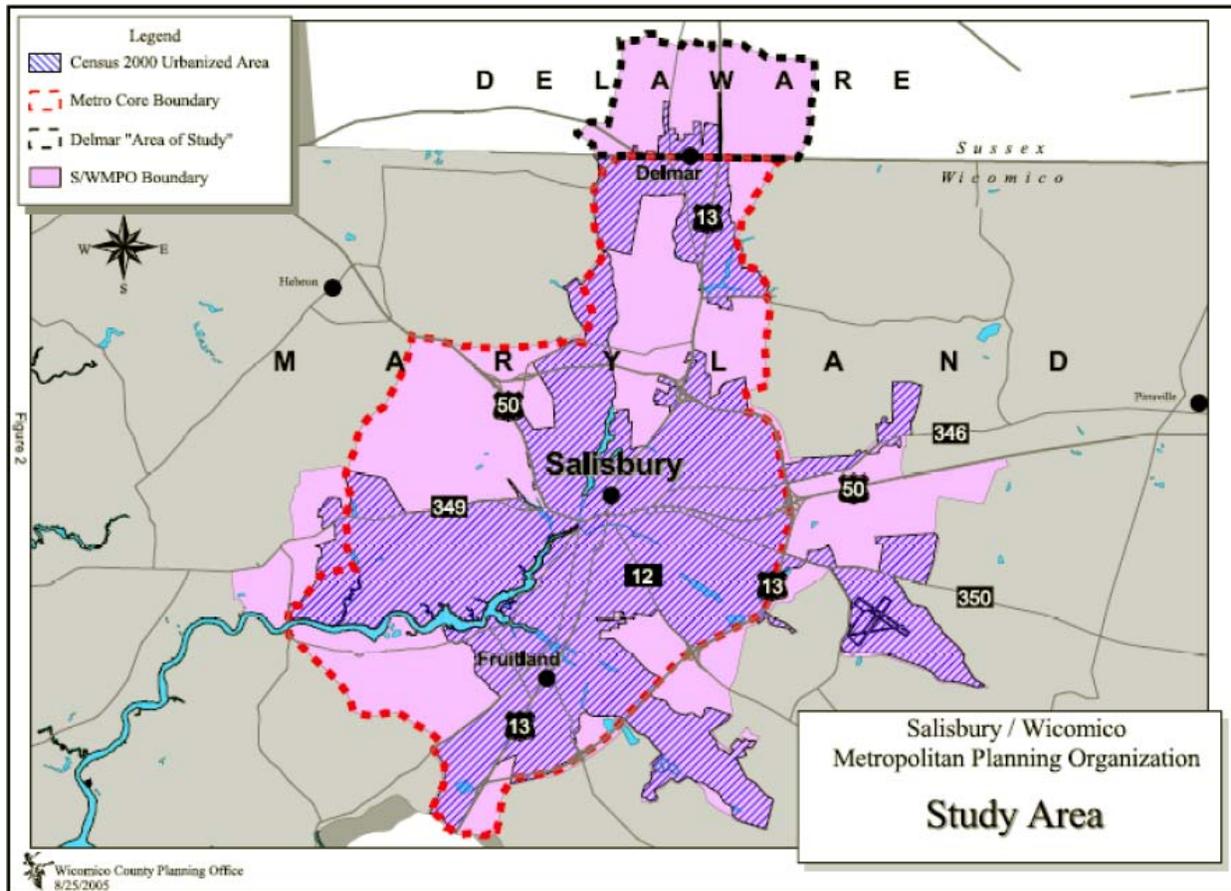
¹⁸¹Ibid.

¹⁸²Ibid.

¹⁸³Ibid.

¹⁸⁴Delaware Department of Transportation, *Consultation Process for Non-metropolitan Locally Elected and Appointed Officials*, (June 12, 2006), http://www.DelDOT.gov/information/pubs_forms/fhwa_consultation_process/pdf/fhwa_rural_consultation.pdf, 1.

DelDOT created a *Consultation Process for Non-metropolitan Locally Elected and Appointed Officials* in 2004¹⁸⁵. The consultation process includes local officials in the creation of the Capital Transportation Program (CTP).¹⁸⁶ Involvement in the CTP planning process is crucial since the CTP defines transportation infrastructure priorities and funding schedules for the short-term and long-term future. After the 2010 census is completed, the Salisbury/Wicomico County MPO (SWCMPO) may expand further into Sussex County based on population growth. It is unclear whether all of Sussex County will be included in the current MPO. The map listed below shows the current size of the Salisbury/Wicomico County MPO. First, notice that the MPO is very small and second notice that only a very small section of the MPO is located in Delaware, namely the Delmar area.



(Source: <http://SWCMPO.org/3Content&Pics/LRTP%20Adopted%2010-06.pdf>, pg. 1-6)

In Delaware, the Governor has the power to appoint and specifically approve a nine-member Council on Transportation (COT), which is charged with advising officials on issues related to transportation.¹⁸⁷ Each county in Delaware is given equal representation on the council.¹⁸⁸ Special consideration is also made to include individuals from inside and outside incorporated areas of Sussex County.¹⁸⁹ Additional inclusionary measures are taken during the process of revising and improving the CTP in order to include Sussex County citizens, government

¹⁸⁵Ibid.

¹⁸⁶Ibid., 2.

¹⁸⁷Ibid.

¹⁸⁸Ibid.

¹⁸⁹Ibid.

officials, and elected officials.¹⁹⁰ Taking the extra steps toward including the non-metropolitan areas of Delaware enables DelDOT and other agencies to better plan for growth and transportation infrastructure needs. DelDOT also consults heavily with Sussex County officials during the review process for the Statewide Long-Range Transportation Plan.¹⁹¹ Minimum outreach efforts as indicated in the consultation-process document published by DelDOT include:

- Introductory letter mailed directly to locally elected and appointed officials at the county and local levels. The purpose of these mailings is to let officials know what the department is doing, to distribute draft products for review, and to let them know when and how they can provide their comments.
- Interviews with briefings for locally elected and appointed officials. This includes interviews and/or briefings with the Sussex County Administrator, the Sussex County Council, and with the managers, mayors, and councils of local governments throughout the county. The purpose of these interviews and briefings is to solicit comments on the current plan and how it should be updated to reflect new or changing needs within the county or particular municipality.
- Extensive mailings to other agencies and organizations. These include social service agencies, public libraries, associations of towns (e.g., the Sussex County Association of Towns and the Association of Coastal Towns), and other agencies and organizations engaged with local government officials in the decision-making process.¹⁹²

DelDOT also creates and maintains a Sussex County specific Long-Range Transportation Plan¹⁹³ in order to afford Sussex County some of the same advantages that Kent and New Castle Counties receive through their respective MPOs.

DelDOT is working with government officials at all levels to improve the statewide walking and biking system through the creation of the “Statewide Rails-to-Trails/Rail-with-Trail System Master Plan.” The goal of the plan, as the title explains, is to use old railways and current functional railways as areas for public trails and multi-modal paths. The Plan focuses on multiple rail corridors within all three counties in Delaware totaling 44 miles of off-road trail facilities.¹⁹⁴ One advantage of this plan is that, aside from creating more walkable and interconnected communities, the public-sector is simultaneously preserving rail-line corridors for possible future use as actual rail lines. State Senator Harris McDowell, speaking about the Rail-to-Trail program, said:

I believe that it is important to keep in mind what the intended purpose of the Rails-to-Trails program really is. The program was originally set up as a way for states to hold onto rail lines in the event that they might be used again as a rail/mono-rail system in the future. The idea of future rail development in the state hinges on our ability to use this

¹⁹⁰Ibid.

¹⁹¹Ibid., 3.

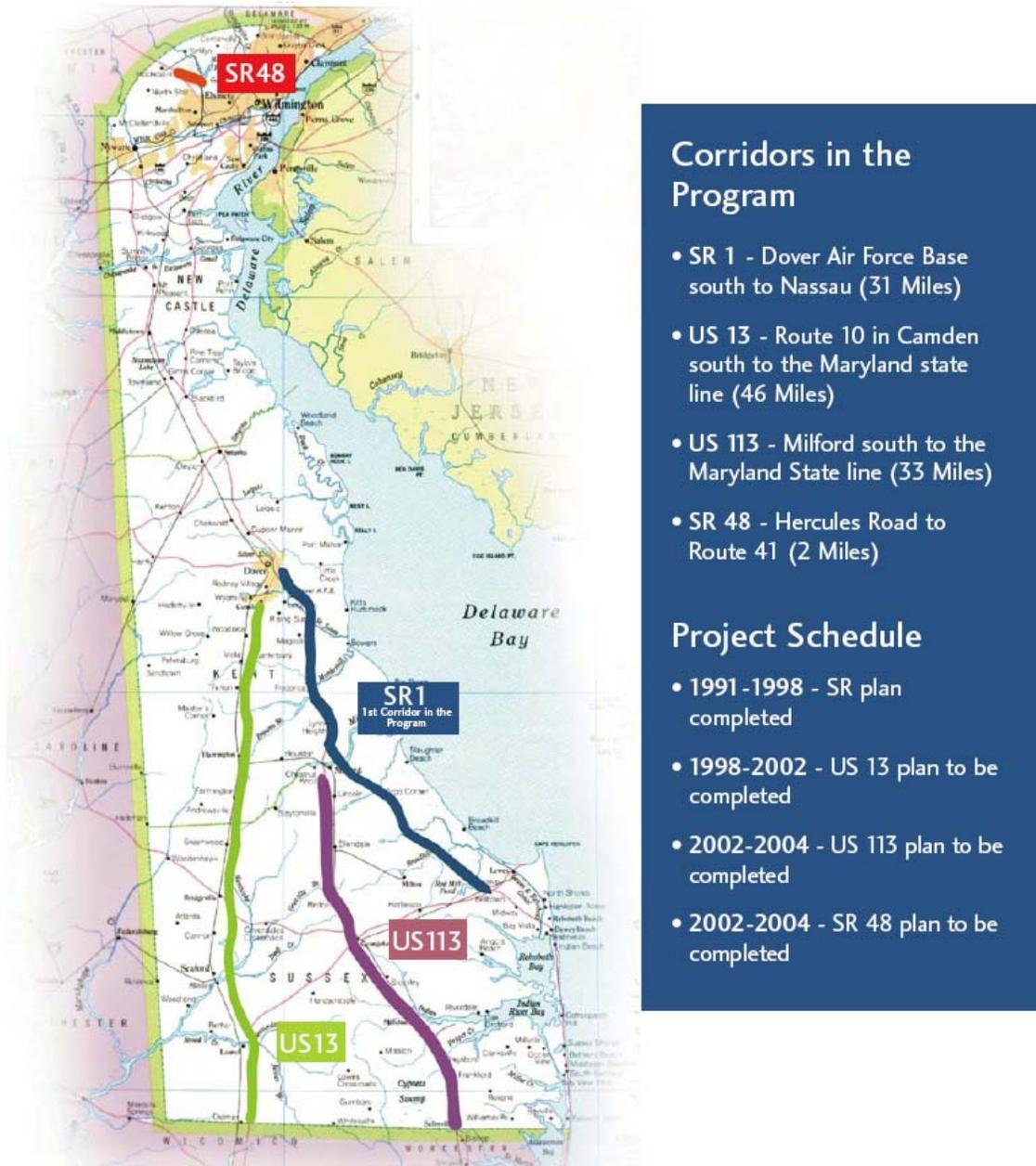
¹⁹²Ibid.

¹⁹³Ibid.

¹⁹⁴Delaware Department of Transportation, *Statewide Rails-to-Trails/Rail with Trail System Master Plan*, http://www.DelDOT.gov/information/projects/rails_to_trails/pages/MASTER_PLAN_FINAL/MAIN_BODY/REPORT_MAIN_BODY_FINAL.pdf, 1.

land, because having to re-purchase land would make future rail/mono-rail development virtually impossible.¹⁹⁵

DelDOT implements the Corridor Capacity Preservation Program (CCPP), which has four main goals: 1) maintain a road's ability to handle traffic efficiently and safely, 2) minimize the transportation impacts of increased economic growth, 3) preserve the ability to make future transportation-related improvements as needed, and 4) prevent the need to build an entirely new road.¹⁹⁶ The current corridor areas are shown in the map below.



(Source: http://www.DelDOT.gov/information/pubs_forms/manuals/corr_cap/pdf/intro.pdf, pg. 1-3)

¹⁹⁵Ibid., 9.

¹⁹⁶Delaware Department of Transportation. *CCPP*.

http://www.DelDOT.gov/information/pubs_forms/brochures/pdf/ccpp_fyi.pdf, 2.

DelDOT aims to curb direct road connection between new developments and highway corridors designated in the map. DelDOT encourages alternative access for such developments in order to reduce traffic and congestion on major corridor highways.¹⁹⁷

CCPP requires that “counties and local governments refer applications for rezoning, subdivision, and entrance permits to DelDOT to review for consistency with the CCPP.”¹⁹⁸ The Development Coordination Section of the DelDOT Division of Planning provides comments on all rezoning requests for properties located in corridor areas.¹⁹⁹ The Development Coordination Section also assesses whether adequate conditions exist in order to approve a site project in a corridor area.²⁰⁰ Technical review and preliminary conferences are to take place early in the review process of a development proposal, in order to allow the participant to take adequate action regarding mitigating excessive traffic-impacts on corridor areas.²⁰¹ The CCPP also states that “development along a designated corridor that will exceed the capacity of the road will only be approved subject to mitigating improvements being made by the developer that may include roadway improvements and/or traffic management agreements.”²⁰² DelDOT also coordinates with local government bodies to ensure that comprehensive plans are consistent with the goals and implementation strategies of CCPP.²⁰³

DelDOT works with landowners, municipal officials, and county government officials to develop local area master plans. Local area master plans bridge the gap between county-level planning and municipal planning by covering mid-level regional areas that are usually larger than towns, but smaller subsets of a county. Examples of these efforts are the West Town Plan for Middletown, the Southern New Castle County Master Plan, and the Churchman’s Crossing Master Plan.²⁰⁴ These plans examine all forms of transportation opportunities from walking to driving to mass-transit.²⁰⁵

Delaware Transit Corporation (DTC)

The following examination of DTC transportation/land use integration policies will include: 1) the *Wilmington-to-Newark Commuter Rail-Improvement Project*, 2) Coordinated Transit/Transportation Plans (CTTP), and 3) intergovernmental cooperation. Currently, DTC is working on the Wilmington to Newark Commuter Rail Improvement Project. Since northern

¹⁹⁷Delaware Department of Transportation, *The CCPP Manual: Strategies to Delay System Expansion, Focus Development, and Preserve Quality of Life*, http://www.DelDOT.gov/information/pubs_forms/manuals/corr_cap/pdf/DelDOT_ccpp_manual.pdf, 2.2.

¹⁹⁸Delaware Department of Transportation. *CCPP*. http://www.DelDOT.gov/information/pubs_forms/brochures/pdf/ccpp_fyi.pdf, 4.

¹⁹⁹Delaware Department of Transportation, *The CCPP Manual: Strategies to Delay System Expansion, Focus Development, and Preserve Quality of Life*, http://www.DelDOT.gov/information/pubs_forms/manuals/corr_cap/pdf/DelDOT_ccpp_manual.pdf, 3.2.

²⁰⁰Ibid.

²⁰¹Ibid.

²⁰²Ibid.

²⁰³Delaware Department of Transportation. *CCPP*.

http://www.DelDOT.gov/information/pubs_forms/brochures/pdf/ccpp_fyi.pdf, 4.

²⁰⁴Reeb, Ralph, Director of Planning, DelDOT, Interview conducted on 10/16/08.

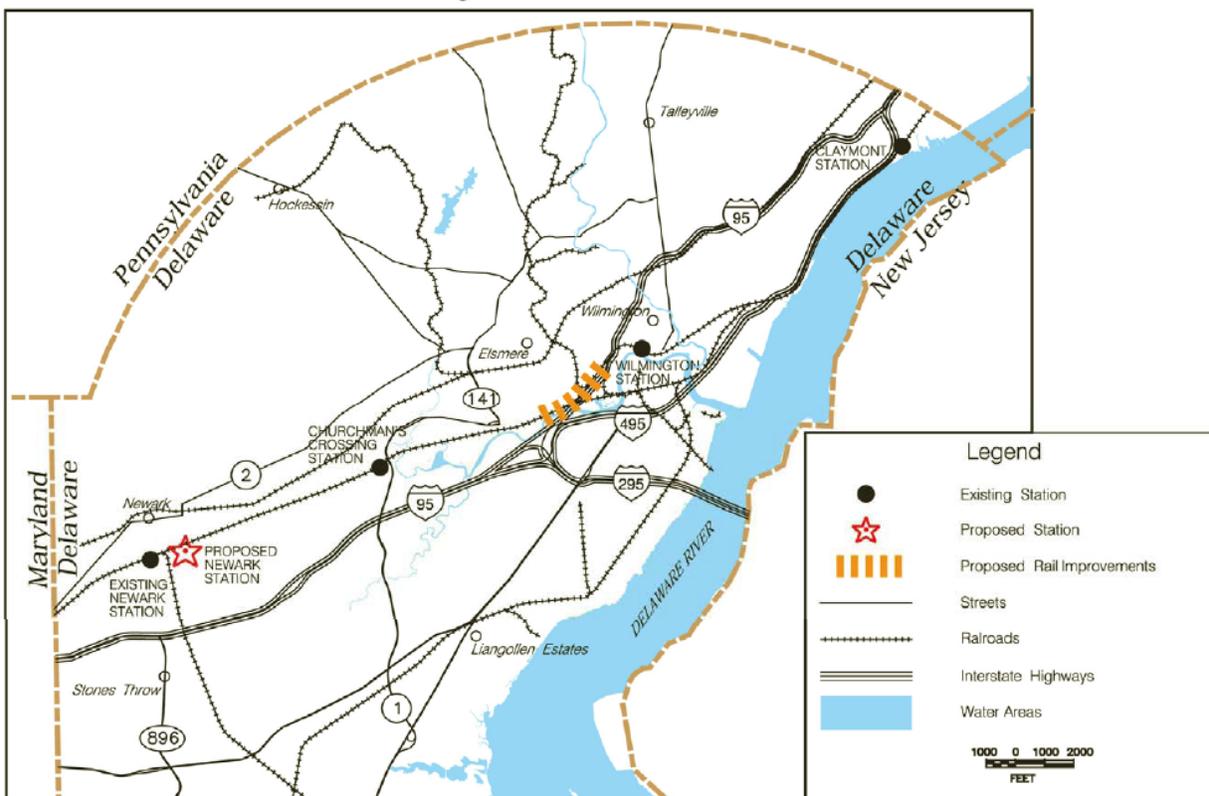
²⁰⁵Ibid.

New Castle County growth in the Newark-to-Wilmington corridor is expected in the future²⁰⁶, a third rail line is proposed between Newport and Wilmington to remove a choke point that exists in that area.²⁰⁷ This will allow for greater trip frequency for the SEPTA commuter rail service. Currently, the service averages approximately 4,000 trips per day, after the improvements are completed, the service should produce approximately 7,840 trips per day.²⁰⁸

A new Newark Train Station will be constructed that can handle two operating trains at a time while also providing rail-storage capacity.²⁰⁹ The new train station usurp the current Route 896 location and be located off Route 72 in Newark. By moving the station up the line, freight-train traffic near the Chrysler Plant can more easily maneuver without delay in operation caused by SEPTA commuter rail service.²¹⁰ DTC also plans on coordinating construction of a pedestrian bridge across the railway in order to provide better access to the new train station at Route 72.²¹¹ Below is the map that identifies where improvements will be located in the northern New Castle County region.

Wilmington to Newark Commuter Rail Improvements

Wilmington, Delaware



(Source: http://www.dartfirststate.com/information/programs/wilm_newark/crip_summary_082108.pdf, pg 4.)

²⁰⁶Delaware Transit Corporation. *Wilmington to Newark Commuter Rail Improvement*

Project.http://www.dartfirststate.com/information/programs/wilm_newark/crip_summary_082108.pdf, 1.

²⁰⁷Ibid.

²⁰⁸Ibid.

²⁰⁹Ibid., 2.

²¹⁰Ibid., 2.

²¹¹Ibid., 4.

DTC works with local governments and other state agencies to create Coordinated Transit/Transportation Plans (CTTPs) for counties in Delaware. CTTPs inventory the transportation services (both for-profit and non-profit) available to citizens in Delaware counties, evaluate gaps in services, and propose new strategies for improving transportation systems in the counties. The CTTPs provide useful graphics such as transportation directories that list transportation providers, evaluating each provider based on what type of transportation is provided and whether the entity is for-profit or non-profit. Additional maps are provided that outline current transportation fixed routes and actual-use demands on various transportation systems. Overall, the CTTPs allow for DTC and local government officials to get on the same page regarding short-term and long-term transportation infrastructure concerns in each county.

DTC works with all three counties in Delaware and is actively involved in the planning-review processes that take place for development proposals. In New Castle County specifically, DTC works with public officials to create ordinance modifications that will promote transit in the county. DTC has planning staff who specifically work on ordinances with local governments as well as Traffic Mitigations Agreements (TMAs) with private-sector entities such as AstraZeneca, located in New Castle County. DTC also works to encourage transit friendly development throughout Delaware in order to make the transition to a diverse transportation network an easy one for areas anticipating increased growth pressure. This strategy is especially focused on the large-scale developments that occur in Delaware, since such large developments can have a significant impact on how the area's future transportation network will develop. DTC officials also give input during the PLUS review process. This means that DTC officials have influence over the development of municipal and county comprehensive plans, amendments to such comprehensive plans, development proposals, rezoning proposals, and proposed school expansions. DTC also coordinates planning efforts with Delaware MPOs.

New Castle County Government

New Castle County government is enacting various measures to better integrate land use with transportation in the planning process. The following two topics are examined in this section: 1) New Castle County Comprehensive Plan (NCCCP) and 2) New Castle County Unified Development Code.

New Castle County Comprehensive Plan

This section will cover the following topics: 1) process policies, 2) sub-area planning, 3) inter-municipal/cross-state transportation coordination, and 4) the New Castle County Pathway Plan. The NCCCP outlines a broad-based strategy toward integrating land use and transportation in the planning process. To start, development proposals are brought before the Planning Board at the "Exploratory Plan" stage, giving opportunities for input on the proposal before details of the proposals are settled.²¹² Planning officials link various development projects together early in the planning-review process at the exploratory or preliminary review level, thereby fostering interconnectivity among multiple land uses.²¹³ Currently, OSPC has a Memorandum of Understanding (MOU) with New Castle County government "requiring that significant zoning

²¹²New Castle County Government, "New Castle County Comprehensive Development Plan," <http://www.co.new-castle.de.us/landuse/home/webpage31.asp> (accessed September 19, 2008), 2.

²¹³Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

changes be submitted to the OSPC and scheduled for hearing at monthly PLUS meetings.”²¹⁴ In many cases the New Castle County Unified Development Code exceeds PLUS-process standards. In such circumstances, PLUS review is not required. The Unified Development Code already requires that “major land-development plans, code amendments, and rezonings be reviewed by a Technical Advisory Committee (TAC) prior to public hearings.”²¹⁵ The TAC covers a variety of issues including transportation and land use—integration strategies by involving various members of state, local, and regional government agencies and bodies.²¹⁶ In order to support multi-modal transportation options, New Castle County mandates inclusion of pedestrian facilities on proposed plans in the development-review process.²¹⁷ New Castle County is also encouraging more mixed-use development and mobility-friendly design standards in all new development.

New Castle County government is also working with DelDOT to initiate and expand local area studies that will provide a more “thorough understanding of the potential cumulative impact on the surrounding transportation infrastructure.”²¹⁸ Government officials signed an MOU to create a Southern New Castle County Master Plan.²¹⁹ Various parties are involved with the creation and constant evaluation of the local area plan, including DelDOT, OSPC, WILMAPCO, and others. By creating a local area plan, local and state officials can more efficiently integrate the multiple land use and transportation infrastructure demands that impact southern New Castle County. In addition to the southern New Castle County Master Plan, eight other areas in New Castle County are identified in the following map:

²¹⁴New Castle County Government, “New Castle County Comprehensive Development Plan,” <http://www.co.new-castle.de.us/landuse/home/webpage31.asp> (accessed September 19, 2008), Intergovernmental Coordination, 1.

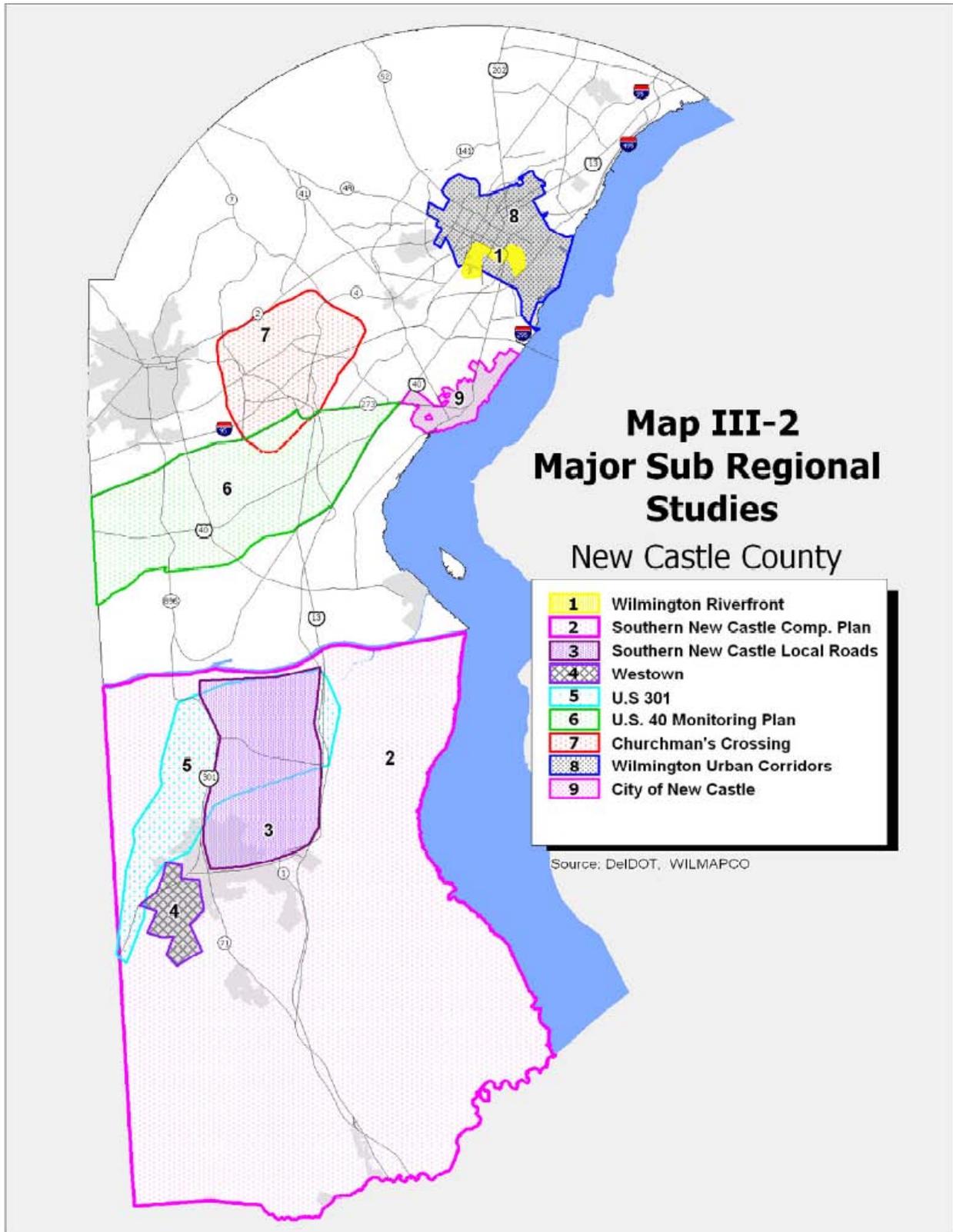
²¹⁵Ibid.

²¹⁶Ibid.

²¹⁷Ibid – Transportation, 9.

²¹⁸Ibid – Future Land Use and Design, 2

²¹⁹Ibid., 5.



(Source: <http://www.co.new-castle.de.us/landuse/home/fileuploads/images/compplanpage/iii2%20majorstudies.pdf>)

Two such examples are the Churchman's Crossing study and the U.S. Route 40 study. Similar to local area plans, these study areas are considered during the planning process.²²⁰ Transportation Investment Districts (TIDs) are to be developed and implemented in conjunction with DelDOT and WILMAPCO²²¹ as another form of local area planning.

In cooperation with the state of Delaware, WILMAPCO, and other in-state/out-of-state municipalities, New Castle County hopes to establish an inter-municipal/cross-state transportation compact.²²² This compact would foster increased consultation and cooperation between regional governments at all levels in multiple states regarding transportation infrastructure improvements.

New Castle County coordinates the establishment of growth areas in conjunction with the SSPS so that state transportation infrastructure priorities match the county's designated growth areas.²²³

Through the New Castle County Pathway Plan²²⁴ local and state government officials can better integrate pedestrian and bicycle transportation systems into varying land uses. In conjunction with the New Castle County Pathway Plan, New Castle County aims to integrate Complete Streets into every new development design.²²⁵

New Castle County Unified Development Code

The Unified Development Code (UDC) of New Castle County provides provisions implemented throughout the planning process enabling integration of land use and transportation infrastructure. During the planning process, transportation capacity is outlined early. New Castle County has a phasing policy regarding highway capacity versus land use demands. The policy mandates that DelDOT provide input on highway capacity in order to possibly require phasing of a development project.²²⁶ The Article 5, Division 40.05.100 Transportation Capacity requirement states:

Prior to receiving a rezoning or major record subdivision or land development final plan approval from the Department, the transportation capacity allocated to a proposed development shall be based upon the most limiting intersection(s), as determined by a traffic-impact study.²²⁷

This requirement limits the land use development potential of a site based on the transportation infrastructure located in the area. This relates closely to New Castle County's Article 11

²²⁰Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

²²¹New Castle County Government, "New Castle County Comprehensive Development Plan," <http://www.co.new-castle.de.us/landuse/home/webpage31.asp> (accessed September 19, 2008), Transportation, 12

²²²Ibid., 6.

²²³Ibid – Intergovernmental Coordination, 2.

²²⁴Ibid., 9.

²²⁵Ibid., 7.

²²⁶New Castle County Government. *New Castle County Code*.

<http://www.municode.com/resources/gateway.asp?pid=11287&sid=8> (accessed September 19, 2008), Article 28, Sec. 28.01.004.

²²⁷Ibid, Article 5, Div. 40.05.100.

Transportation Impact ordinance, which defines how transportation capacity is calculated and how the process of review works. First, the need for a Traffic-impact Study (TIS) is assessed. New Castle County officials report that TISs are required for all major subdivisions, amounting to 25 percent of all New Castle County development.²²⁸ The TIS is based on five components; as listed in the UDC:

1. The proposal exceeds the projected average daily traffic warrants provided in Table 1, Section 15 of DeIDOT's Rules and Regulations for Subdivision Streets, as may be amended from time to time.
2. The proposal is projected to generate more than 50 peak-hour trips, including trips that are diverted from existing traffic.
3. The subject property is located near roadways segments and intersections that are operating below the level of service specified in Section 40.11.210.
4. The proposed development causes the total development within the area-traffic analysis zone and the adjacent zones to exceed the totals in the WILMAPCO Metropolitan Transportation Plan.
5. The proposed development will impact roadways that are not capable of providing adequate and safe circulation, or adequate stopping sight distances, or that contain other geometric deficiencies that would result in safety problems if the development were built.²²⁹

It is important to note the crucial role that both DeIDOT and WILMAPCO play in this analysis.

If one of the above components is cited as a reason to proceed with a traffic-impact study, the New Castle County Land Use Department and DeIDOT meet with the applicant in what is called a "scoping meeting,"²³⁰ The meeting is held to outline the parameters and general requirements for the completion of a traffic-impact study. The traffic-impact study is then conducted in order to inventory current transportation infrastructure located at or near the development site, assess current or future transportation infrastructure projects slated for construction in the area, and assess what future traffic loads will result from the construction of the actual development. After completion of the TIS, DeIDOT is given time to review the findings and submit a report pursuant to Article 11, Section 40.11.140 that includes the following:

1. A statement indicating whether a traffic-impact study was previously submitted and evaluated for the same or a substantially similar rezoning, subdivision, or land development application, and if so, the results of that evaluation including any recommended mitigation measures. The statement may also contain an evaluation and findings of any other concurrent TIS for applications in the immediate area.

²²⁸Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

²²⁹New Castle County Government. *New Castle County Code*.

<http://www.municode.com/resources/gateway.asp?pid=11287&sid=8> (accessed September 19, 2008), Article 11, Sec. 40.11.120.

²³⁰*Ibid*, Sec. 40.11.122.

2. A statement assessing the ability of the existing and planned transportation system to support the proposed rezoning, subdivision, or land development.
3. A statement describing the extent to which the proposed rezoning, subdivision, or land development is consistent with the adopted WILMAPCO Metropolitan Transportation Plan.
4. A statement describing the extent to which the proposed rezoning, subdivision, or land development complies with applicable DelDOT standards or regulations for access and subdivision design, and with the standards in Section 40.11.210.
5. A statement certifying the adequacy of the recommended traffic-mitigation measures to bring the network back to the desired level of service in Section 40.11.210.²³¹

Inclusion of WILMAPCO in the third requirement is significant because it gives the WILMAPCO Transportation Plan more relevance in the planning process. Although it is not reflected in the ordinance, New Castle County officials serve on the WILMAPCO TAC and Executive Board regarding capital improvement plan (CIP) and transportation improvement program (TIP) creation and updates. County officials also consult with WILMAPCO on long and short-term transportation planning.²³² This collaborative effort on various issues improves the ability of both government bodies to impact the TIS process. After the submission of the TIS, the New Castle County Department of Land Use conducts a final assessment based on the actual TIS, recommendations and review from DelDOT, and the general transportation infrastructure goals for the area. Perhaps the most important aspect to this process is the fact that all of this occurs before the applicant gets to the first step of the development-approval process.

To start, various land use designations highlighted in Article 2 of the UDC, such as Office Regional, Suburban Transition, Traditional Neighborhood, and Commercial Regional, have requirements attached that mandate transportation improvements and mass-transit emphasis.²³³ For example, the Suburban Transition District requirement mandates that any new development be within a two-mile radius of an existing transit park or riding facility²³⁴ and that the development be no more than ¼-mile walking distance from the nearest bus stop.²³⁵ Additionally, New Castle County officials look 1,000 ft. around a parcel in order to study interconnectivity concerns.²³⁶ Bicycle and pedestrian facilities are considered during the county planning-review process.²³⁷ In Section 40.03.527 of the UDC is a bicycle parking requirement that mandates that for every ten automobile parking spaces constructed one bicycle-parking space be provided.²³⁸ New Castle County officials also work to encourage as much mixed-use

²³¹Ibid., Sec. 40.11.140.

²³²Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

²³³New Castle County Government, *New Castle County Code*, Chapter 40: Unified Development Code.

²³⁴Ibid., Article 2, Sec. 40.02.221.

²³⁵Ibid.

²³⁶Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

²³⁷Ibid.

²³⁸New Castle County Government, *New Castle County Code*, Chapter 40: Unified Development Code., Article 3, Sec. 40.03.527.

development as possible.²³⁹ Furthermore, New Castle County government received grant funding to study ways to better foster mixed-use development in the county.²⁴⁰

In areas where there is no development, new development projects are required to create local circulation plans, which, in conjunction with DelDOT and the New Castle County Department of Land Use, provide for future development by planning out the roadway infrastructure in the locality.²⁴¹ This plan must be completed before the proposal is given approval.²⁴² The department also has authority to require sidewalk construction when conditions require them.²⁴³

Kent County Government

Kent County government is enacting various measures to better integrate land use with transportation in the planning process. The following two topics are examined in this section: 1) the Kent County Comprehensive Plan, and 2) the Kent County Code.

Kent County Comprehensive Plan

The Kent County Comprehensive Plan (KCCP) covers the following topics: 1) design of road improvements for vehicular traffic, 2) the county bicycle and pedestrian facilities plan, 3) transportation-improvement districts (TIDs), and 4) specific ordinance changes. When Kent County transportation data were collected in 1990 and 2000, the continued primary form of transportation in the county was drive-alone single occupant (77.7% in 1990 and 79.7% in 2000).²⁴⁴ The KCCP calls for use of multi-modal paths. Multi-modal paths encourage more citizens to use alternative sources of transportation, like riding bicycles or walking by providing safe pathways for travel.



²³⁹Culver, David and George Haggerty. General and Assistant General Managers, Department of Land Use, New Castle County Government. Interview conducted 10/28/08.

²⁴⁰Ibid.

²⁴¹New Castle County Government, *New Castle County Code*, Chapter 40: *Unified Development Code*, Sec. 40.21.111.

²⁴²Ibid.

²⁴³Ibid., Sec. 40.21.162.

²⁴⁴Government, Kent County. "Kent County Comprehensive Plan Update." *Kent County Levy Court*. July 1, 2008. <http://www.co.kent.de.us/Departments/Planning/Zoning/documents/CombinedFourthDraftRedlined.pdf> (accessed September 8, 2008), 59.

The KCCP states: “Walking is the most basic form of transportation, and when road improvements for vehicular traffic are contemplated, multi-modal paths for bike and pedestrian traffic should be included in the design.”²⁴⁵

A key recommendation of the KCCP is to “develop a county-wide plan for bicycle and pedestrian facilities including multi-use paths in concert with DelDOT’s bicycle/pedestrian planning efforts.”²⁴⁶ The use of multi-modal paths depends on proximity to multiple land uses. Mixed-use developments provide incentives for bikers and pedestrians to access nearby convenience stores, businesses, or recreation/entertainment centers. One of the recommendations of the KCCP is to “permit a mix of residential and nonresidential development at densities high enough to support transit in the Growth Zone Overlay, particularly in areas near municipalities.”²⁴⁷ DelDOT Pedestrian Facility data (2004) indicate that Kent County is making progress toward developing alternative transportation opportunities. DelDOT reports that Kent County has “25.3 miles of footpaths, over 400 miles of sidewalk, and nearly seven miles of crosswalks.”²⁴⁸

The KCCP also calls for use of TIDs to better integrate land use and transportation. TID master plans replace traffic-impact studies during the subdivision and land development—approval process.²⁴⁹ TID master plans are created by “Kent County, DelDOT, the local MPO, and the community in order to develop a more complete plan addressing a larger area for transportation improvements including road upgrades, interconnection of local roads, and bicycle and pedestrian facilities.”²⁵⁰ Under the use of TIDs, “roadway infrastructure is identified ahead of the land use application,”²⁵¹ which means that decision-makers at every level will have more time to better integrate transportation needs with potential needs. The TID approach links issuance of the building permit to the completion of developer road improvements,²⁵² ensuring that fully functional transportation infrastructure is in place before land use development occurs. TISs are conducted for specific developments to assess their impact on adjacent roadways and transportation systems, whereas TID master plans encompass the greater area surrounding and adjoining a development. By use of this wider lens, public officials are better able to integrate various land uses with a master plan.

The KCCP recommends ordinance changes to further integrate land use with transportation infrastructure. One recommendation is to “condition approval of preliminary and/or final subdivision and land development plans onto phasing schedules based upon completion of required transportation improvements.”²⁵³ Another recommendation calls for review of Kent County’s Adequate Public Facilities Ordinance (APFO) – Roads Component. The KCCP recommends to “determine the costs and benefits of establishing a standard within the APFO – Roads Element permitting the Levy Court to limit the number of building permits for new

²⁴⁵Ibid., 58.

²⁴⁶Ibid., 74.

²⁴⁷Ibid., 74.

²⁴⁸Ibid., 62.

²⁴⁹Ibid., 72.

²⁵⁰Ibid.

²⁵¹Ibid.

²⁵²Ibid.

²⁵³Ibid., 73.

residential units for approved but not-yet-built lots identical to the provision in APFO-Schools.”²⁵⁴ The intent of this change in the APFO is to ensure “that delays at intersections functioning below the established Level of Service in these areas be maintained at their pre-development values.”²⁵⁵

Kent County Code

The Kent County Code currently includes many provisions that integrate land use with transportation. This section will examine the following two aspects of the Kent County Code: 1) the planning-review process and 2) DeIDOT coordination. The Kent County Planning Department mails project proposals to various government bodies to solicit feedback on proposals.²⁵⁶ OSPC comments on development proposals that are submitted to Kent County Planning Commissioners for review, and these comments often become conditions for approval.²⁵⁷ Kent County planners consider, when reviewing the sketch plan, “the potential further development of adjoining lands which may not yet be subdivided” (Article IV, 187-18,C,9).²⁵⁸ During the Preliminary Plan stage, OSPC and the Kent County Planning Commission’s Development Advisory Committee are consulted for comments and recommendations.²⁵⁹ This provides another opportunity within the planning process to look at the “big picture” as it relates to matching transportation priorities for the state with local land use goals.

Regardless of whether the proposal is a major or minor subdivision, in every situation the Kent County Planning Commission is specifically called upon to uphold the KCCP when making decisions.²⁶⁰ This specific mention of the KCCP as part of the general review framework for a proposal is important because many important land use/transportation integration strategies are contained in the KCCP. Kent County officials are also working to create multi-modal paths by encouraging implementation of such paths early in the planning process.²⁶¹ Sidewalks are required on all collectors and arterials in most developments.²⁶² Although developers in the county frequently request waivers pertaining to sidewalk creation, county officials report that waivers are normally denied.²⁶³ Kent County also encourages densely developed mixed-uses through planning unit development (PUD) policies and a transfer of development rights (TDR) ordinance.²⁶⁴ The ordinance densities permitted are three units per acre for PUD and five to seven units per acre for TDR.²⁶⁵ Kent County also has a circulation-ratio requirement within the TDR ordinance that discourages the use of cul-de-sacs.²⁶⁶ Kent County development projects

²⁵⁴Ibid.

²⁵⁵Ibid.

²⁵⁶Ibid.

²⁵⁷Ibid.

²⁵⁸Kent County Government, *Kent County Code: Chapter 187 Subdivision and Land Development*, (7-1-2008), [http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=\[1\]\[260\]](http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=[1][260]) (Accessed September 8, 2008), 12.

²⁵⁹Ibid., 14.

²⁶⁰Ibid., 13.

²⁶¹Keifer, Sarah. Director, Kent County Planning Department. Interview conducted 10/21/2008.

²⁶²Ibid.

²⁶³Ibid.

²⁶⁴Ibid.

²⁶⁵Ibid.

²⁶⁶Ibid.

are given phased approval based on completion of transportation infrastructure improvements.²⁶⁷ In 2003, the Kent County Levy Court revised the Kent County Code Land Development and Subdivision Ordinance to “recognize the importance and popularity of pedestrian and bicycle facilities both for transportation and recreation and set forth requirements for the installation of sidewalks along all major collectors and many local streets as part of subdivision and land-development approval.”²⁶⁸

DelDOT cooperation is a significant aspect to the Kent County Code subdivisions-review process. During preliminary conference of the planning-review process applicants for major subdivisions and minor subdivisions are encouraged to consult with DelDOT to start the process of planning for transportation infrastructure (Article IV, 187-17,B).²⁶⁹ Developers usually meet with DelDOT officials before entering the county planning-review process.²⁷⁰ For final plan preparation applicants must have a “letter of no objection” from DelDOT submitted with the application (Article VI, 187-24(D)(2)).²⁷¹ Kent County government has a Memorandum of Understanding (MOU) with DelDOT on review of rezoning requests to foster more coordination between the government bodies.²⁷² The Kent County APFO necessitates early involvement of DelDOT in the county planning-review process.²⁷³ DelDOT governs the transportation capacity –calculation process for a proposed development (Article XVII, 187-90.2(F)(3)(B)).²⁷⁴ Specific methodology used to determine traffic-impact is outlined by DelDOT in the Kent County Code (Article XVII, 187-90.2 (F)(3)).²⁷⁵ Both DelDOT and the Kent County Planning Department have the power to mandate the completion of a TIS for any development, and, in the event that one is conducted, both departments are given the results for review (Article XVII, 187-90.2 (F)(3)(C)).²⁷⁶ In fact, DelDOT is required to submit comments and recommendations on the submitted TIS (Article XVII, 187-90.2 (F)(3)(H)).²⁷⁷ The Kent County Code mandates a scoping meeting be held between planning officials and the applicant to discuss how the traffic-impact study will be conducted (areas of influence, general parameters), etc. (Article XVII, 187-90.2,F,3,E).²⁷⁸

Sussex County Government

²⁶⁷Ibid.

²⁶⁸Ibid.

²⁶⁹Kent County Government, *Kent County Code: Chapter 187 Subdivision and Land Development*, (7-1-2008), [http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=\[1\]\[260\]](http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=[1][260]) (Accessed September 8, 2008), 12.

²⁷⁰Keifer, Sarah. Director, Kent County Planning Department. Interview conducted 10/21/2008.

²⁷¹Kent County Government, *Kent County Code: Chapter 187 Subdivision and Land Development*, (7-1-2008), [http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=\[1\]\[260\]](http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=[1][260]) (Accessed September 8, 2008), 71.

²⁷²Keifer, Sarah. Director, Kent County Planning Department. Interview conducted 10/21/2008.

²⁷³Ibid.

²⁷⁴Kent County Government, *Kent County Code: Chapter 187 Subdivision and Land Development*, (7-1-2008), [http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=\[1\]\[260\]](http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=KE1751-187.htm&cn=519&n=[1][260]) (Accessed September 8, 2008), 90.

²⁷⁵Ibid.

²⁷⁶Ibid.

²⁷⁷Ibid., 92.

²⁷⁸Ibid., 91.

Sussex County government is enacting various measures to better integrate land use with transportation in the planning process. The following two topics are examined in this section: 1) the Sussex County Comprehensive Plan (SCCP) and 2) the Sussex County Zoning Ordinance.

Sussex County Comprehensive Plan

The following policies regarding land use/transportation integration will be examined: 1) land use—map correlation with SSPS, 2) increased consultation and coordination among agencies, 3) promotion of traditional neighborhood design, and 4) a focus on mobility. First, the future land use map for county growth closely matches the SSPS map that outlines where the state will and will not invest money in transportation improvements. Sussex County government is working to increase communication and consultation between agencies through the PLUS process. Sussex County co-signed an MOU with OSPC that required the following land use issues to be reviewed in the PLUS process at the state level:

- Any Residential Planned Community.
- Major residential subdivisions containing more than 50 dwelling units.
- Any non-residential subdivision or site plan involving the expansion of an existing structure by 25 percent with a total floor area exceeding 75,000 square feet or new construction involving structures or buildings with a total floor area exceeding 75,000 square feet.
- Any rezoning within the Environmentally Sensitive Development District that would increase intensity or residential density.
- Applications for rezoning that are inconsistent with the Sussex County's Comprehensive Plan.
- Any local land use regulation, ordinance or requirement referred to the Office of State Planning Coordination by Sussex County for the purpose of providing the County with advisory comments. These include the modifications to the County's zoning and subdivision ordinances.
- Any amendment, modification or update to the Sussex County Comprehensive Plan.²⁷⁹

This allows for further intergovernmental coordination on land use and transportation integration issues because DelDOT is one of the key departments consulted during the PLUS process. DelDOT serves on the Sussex County Technical Advisory Committee review process for development-site proposals.²⁸⁰ Sussex County government also sends all conditional-use applications and rezoning applications to DelDOT for preliminary review before the county even reviews the proposal.²⁸¹ DelDOT provides the county with LOS calculations, traffic counts, and

²⁷⁹Sussex County Government. *Sussex County Comprehensive Plan*. (June 2008).

<http://www.sussexcountyde.gov/compplan/>, 10-2.

²⁸⁰Lank, Lawrence. Director, Sussex County Planning Department. Interview conducted 10/13/2008.

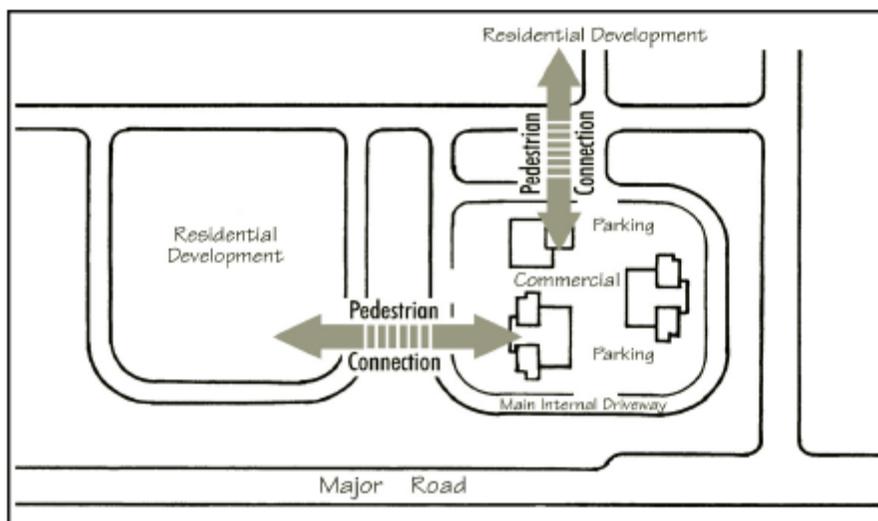
²⁸¹Ibid.

occasionally TISs.²⁸² Sussex County aims to work closely with DeIDOT, especially to establish better long-term plans for transportation investment.²⁸³ Regarding long-term transportation planning with DeIDOT the SCCP states the following:

The establishment of long-term plans for transportation will enable DeIDOT to purchase land and easements for future road improvements now while these acquisitions are still available. Long-term plans will also enable DeIDOT to work more effectively with new developers to provide funds for planned improvements. The County would like to see property purchases for new roads made in a timely fashion after the location is determined.²⁸⁴

Sussex County government also works with the Salisbury/Wicomico County Metropolitan Planning Organization (SWCMPO) in order to address regional transportation issues in southern Maryland and southern Delaware areas. Sussex County officials send ordinance proposals to ask for input from the SWCMPO.²⁸⁵ Sussex County officials also attend all SWCMPO meetings.²⁸⁶

The SCCP Community Design Element promotes traditional neighborhood design which is linked favorably to transportation/land use integration. The Community Design Element emphasizes the need for interconnectivity among differing land uses. See the below graphic from the SCCP:



Pedestrian and bicycle connections should be provided between various developments. Where a road does not provide a connection, a hard-surfaced pedestrian easement should be provided. In larger commercial developments, most vehicle traffic should be directed to routes that do not conflict with the main pedestrian entrances from parking lots.

(Source: SCCP, pg. 160)

²⁸²Ibid.

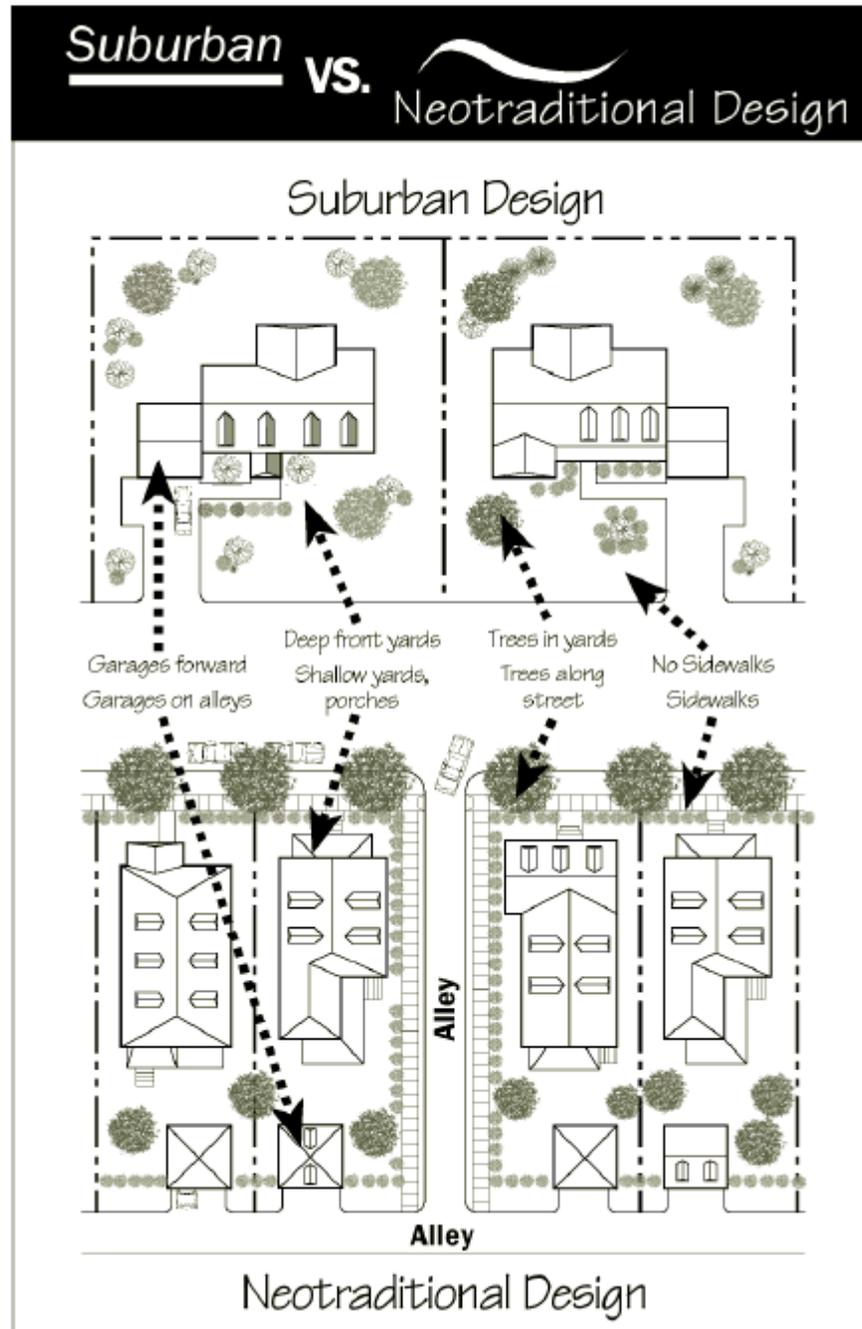
²⁸³Ibid., 10-4.

²⁸⁴Ibid., 10-4.

²⁸⁵Lank, Lawrence. Director, Sussex County Planning Department. Interview conducted 10/13/2008.

²⁸⁶Ibid.

The SCCP states that neo-traditional neighborhood design is a design that creates more mobility-friendly development. A graphic showing some differences between suburban and neo-traditional design is shown below:



(Source: SCCP, 158)

Sidewalks are integrated into the design, and parking garages are located at the rear of buildings off of alleys so that cars do not cross pedestrian sidewalks to access driveways. The SCCP recommends that Residential Planned Community (RPC) provisions within the Sussex County Zoning Ordinance (Chapter 115: Zoning, Article XVI) stay in place to foster more neo-

traditional developments.²⁸⁷ RPC provisions promote mixed-uses, higher densities, use of alleys, use of rear driveway entrances, and greater interconnectivity.²⁸⁸

The SCCP mobility element calls for more coordination between transportation officials and Sussex County government. One recommendation highlighted in the SCCP is to create local area plans.²⁸⁹ These local area plans would allow public officials to better understand local traffic patterns and plan for transportation infrastructure.²⁹⁰ Sussex County plans to create local area plans for the U.S. Rt. 13 Corridor, the Delmar area, the Milton area, the Seaford/Blades/Laurel area, the Millville-Ocean View area, and the Greenwood Bridgeville area.²⁹¹ Another recommendation is to create an MPO-like organization in Sussex County supported by DelDOT's Secretary of Transportation, the Sussex County Council, municipalities, and other state officials.²⁹² An MPO exists but functions primarily in Maryland. This is expected to change after completion of the 2010 census. Only the town of Delmar, Del. is included in the MPO. Regarding east-west traffic movement through Sussex County, the SCCP proposes that county government and DelDOT "review current and future growth areas to determine adequate roadway capacity."²⁹³ Well-planned east-west traffic flows allow for easy evacuation routes in the event of severe weather occurring along the Delaware/Maryland coast. The SCCP mobility element recommends that county officials take into account adjacent land uses when reviewing new development proposals. Integration of multi-modal paths is often required by DelDOT during the Sussex County site-plan-review process. The SCCP mobility element also requires that every subdivision with 20 lots or more must have a bus stop for school or a parking lot. In the SCCP Vision Statement, Part 4, emphasis is placed on matching commercial / industrial land uses with transportation infrastructure.²⁹⁴ Seasonal bus service is also provided in high-density beach areas in Sussex County.²⁹⁵ DTC and DelDOT have a service coordination—planning process in Sussex County helping with transportation statistics that empower Sussex County planners to better prepare for the future.²⁹⁶

Sussex County Zoning Ordinance

The Sussex County Zoning Ordinance implements various transportation—and land use—integration practices into the county planning process. Before the submission of a subdivision plat, applicants must consult in a preliminary conference with local government officials and other public agencies regarding transportation planning (Article II, 99-7, A).²⁹⁷ Approval of a subdivision must include consideration of transportation elements such as: 1) "the effect on area roadways and public transportation," 2) "provision for safe vehicular and pedestrian movement

²⁸⁷Sussex County Government. *Sussex County Comprehensive Plan*. (June 2008).

<http://www.sussexcountyde.gov/compplan/>, 11-7.

²⁸⁸*Ibid.*, 11-8.

²⁸⁹*Ibid.*, 12-32

²⁹⁰*Ibid.*

²⁹¹Lank, Lawrence. Director, Sussex County Planning Department. Interview conducted 10/13/2008.

²⁹²Sussex County Government. *Sussex County Comprehensive Plan*. (June 2008).

<http://www.sussexcountyde.gov/compplan/>, 12-32.

²⁹³*Ibid.*, 12-27.

²⁹⁴Lank, Lawrence. Director, Sussex County Planning Department. Interview conducted 10/13/2008.

²⁹⁵*Ibid.*

²⁹⁶*Ibid.*

²⁹⁷Sussex County Government. *Sussex County Code*. (Last updated 4-20-07). [http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=1223%2D099%2Ehtm&cn=323&n=\[1\]\[111\]](http://www.e-codes.generalcode.com/codebook_frameset.asp?t=tc&p=1223%2D099%2Ehtm&cn=323&n=[1][111])

within the site and to adjacent ways,” and 3) “compatibility with other area land uses” (Article II, 99-9, C,11,15,16).²⁹⁸ Preliminary plan submittal requirements mandate that the applicants submit any “special studies or investigations” to “said public agencies for technical review and approval” (Article IV, 99-24, E).²⁹⁹ The applicant is then required to submit written comments from the said agency to the Commission (Article IV, 99-24, E).³⁰⁰ These requirements ensure that proper consideration is given to possible DelDOT studies or input necessitated by the size and scope of a development proposal. Every subdivision with 20 lots or more is required to provide a school bus stop and possible parking lot—this is a condition of approval.

Article III: Design Requirements and Standards of the Kent County Code provides strategies to integrate transportation and land use. Concerning strip development, the ordinance reads, “Strip development of all types should be limited and avoided as leading to undesirable consequences relative to future development of interior parcels and *compromise of the traffic integrity of the roads involved*” (Article III, 99-15, E).³⁰¹ Often strip development is auto-centric in nature and lacks of interconnectivity to other land uses and transportation diversity.



(Source: <http://www2.iath.virginia.edu/stern/om-str01.jpg>)

A requirement is included that prohibits major commercial, industrial, and subdivision development along major arterial roadways unless the development provides service roads adjacent to all major arterial roadways (Article III, 99-15, F).³⁰² The Sussex County Code also requires that all improvements to a development site be completed and fully constructed before issuance of a building permit (Article VIII, 99-36).³⁰³ For General Commercial and Residential Commercial districts with large-scale uses, transit accommodations are to be provided at the discretion of county government and DelDOT (Article XI C-1, 115-77.1, D, 1,a).³⁰⁴ The code also states that General Commercial and Residential Commercial districts with large-scale uses must implement the following with regard to access standards from roadways:

Access from roadways shall be kept to a minimum and shall encourage the use of shared driveways where feasible and shall be subject to the approval of the Delaware

²⁹⁸Ibid.

²⁹⁹Ibid.

³⁰⁰Ibid.

³⁰¹Ibid.

³⁰²Ibid.

³⁰³Ibid.

³⁰⁴Ibid.

Department of Transportation (Article XI C-1, 115-77.1, C, 1).³⁰⁵

Wilmington Area Planning Council (WILMAPCO)

WILMAPCO implements various strategies to foster transportation/land use integration in northern Delaware. The following examination of WILMAPCO policies includes the following: 1) the Congestion Management System Summary (CMS) report, 2) the 2030 Regional Transportation Plan, 3) local area planning, 4) LOS calculation, 5) freight movement, 6) transportation/environmental justice areas, 7) the Delaware Bicycle Plan/New Castle County Greenway Plan, and 8) intergovernmental cooperation. The 2008 CMS assesses traffic congestion in New Castle County and recommends ways in which to improve the system. Instead of focusing the report on widening roads and constructing new roads to handle highly congested areas, the report is written from the perspective that “it is often difficult (or too expensive) to build our way out of congestion.”³⁰⁶ Adding lanes or building more roads is recommended as a last resort for solving transportation problems. The report states:

It has been witnessed and discussed locally and referenced in national studies that the “build more lanes” approach to solving congestion often has the undesired effect of actually creating more traffic. This report acknowledges that, in some areas, roadway—capacity addition may be the only solution for a severe congestion problem. However, that option will only be examined as *a last resort* after all other strategies have been exhausted or determined to be unfeasible based on the characteristics of the corridor.³⁰⁷

The emphasis on a variety of transportation systems, rather than on auto-centric systems, for public use increases system efficiency. Not only do the strategies included in the report focus on transportation system diversity, several strategies outlined in the CMS report specifically depend on integration with adjacent land uses. One objective is for consumers to switch their transportation-mode, which necessitates that multiple transportation systems exist in the first place. Investment in additional rail services in the Newark, I-95, and Wilmington corridors is needed.³⁰⁸ The rail services expansion hinges on nearness to major employment centers in high-density areas.³⁰⁹ The report also calls for mode interconnectivity among bus stations, bike paths, sidewalks, and train stations, creating a seamless transit network for consumers.³¹⁰ This not only gives consumers choices, but it allows for a more usable system.

WILMAPCO also published a 2030 Regional Transportation Plan (RTP) that is designed to provide a long-range vision for New Castle County transportation-systems development. The first recommendation of the 2030 report is to “adequately . . . invest in our designated Transportation Investment Areas (TIAs).”³¹¹ TIAs must match New Castle County long-term land use priorities. The center and community TIAs are located in dense areas where the most transportation infrastructure investment is needed.

³⁰⁵Ibid.

³⁰⁶WILMAPCO, *2008 WILMAPCO Congestion Management System Summary*, (July 2008), http://www.WILMAPCO.org/cms/CMS_2008.pdf, 5.

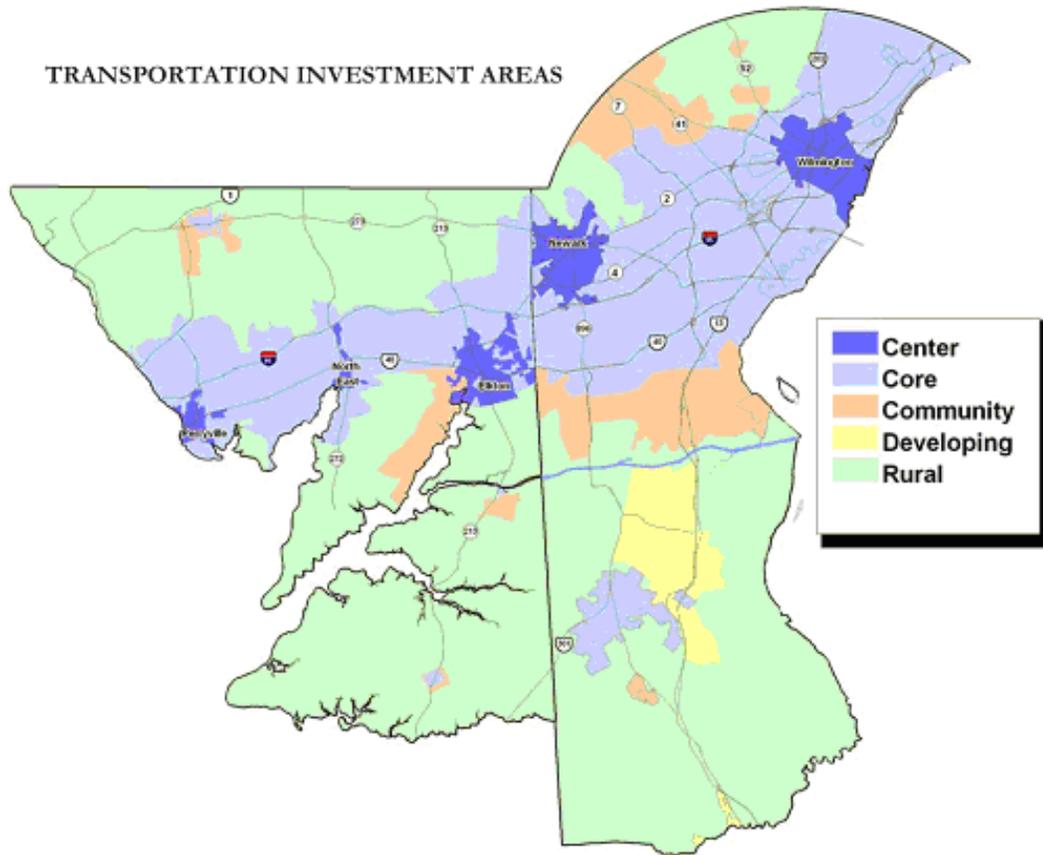
³⁰⁷Ibid.

³⁰⁸Ibid., 15.

³⁰⁹Ibid.

³¹⁰Ibid.

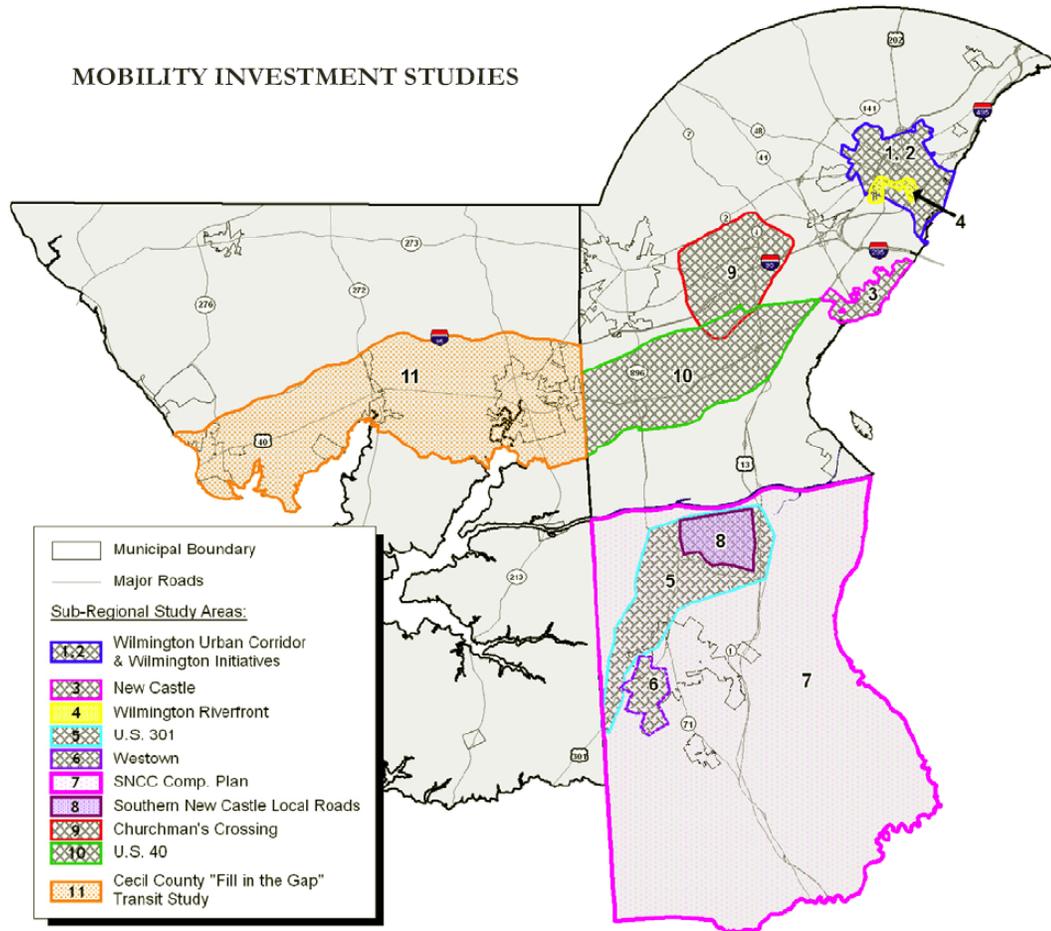
³¹¹WILMAPCO, “*Regional Transportation Plan: 2030 Update*” (March 22, 2007), http://www.WILMAPCO.org/RTP/Final%202030%20RTP/2030_RTP_APPROVED_MARCH_2007_web.pdf, 17.



(Source: WILMAPCO 2030 Regional Transportation Plan, pg. 19)

Another recommendation is to implement local area plans in New Castle and Cecil Counties.³¹² The map below shows the current local area map of New Castle and Cecil Counties.

³¹²Ibid., 21.

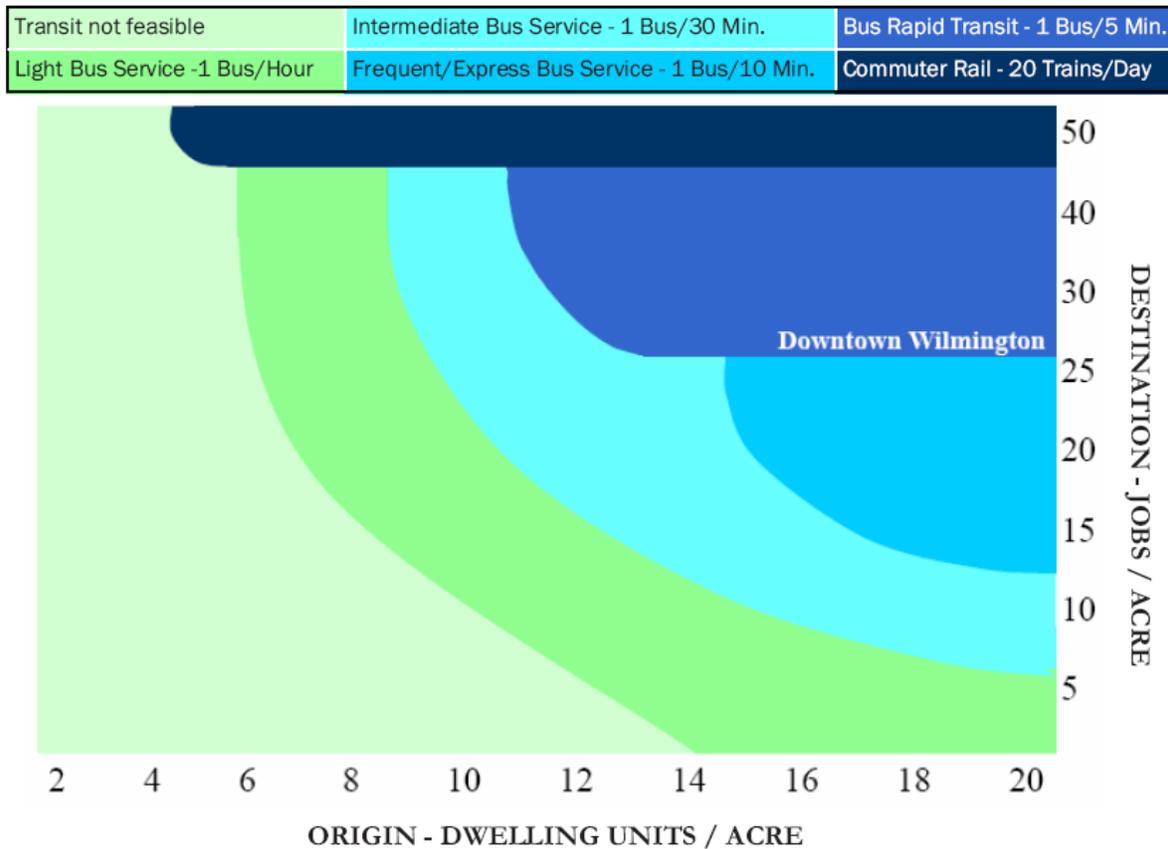


(Source: WILMAPCO 2030 Regional Transportation Plan, 21)

WILMAPCO is also working with various regional stakeholders to establish commuter rail service between Wilmington and Dover, Del.³¹³ An important aspect of this project's success is the implementation of transit-oriented development (TOD). In order for the rail service linkage to function efficiently, Delaware officials must integrate the commuter rail system into a high-density, mixed-use, mobility-friendly development system where individuals live in close proximity to the rail line and have incentive to use it. Train stations need to be located near or at malls, business centers, or dense residential areas to ensure transit demand. The graphic below highlights the strong correlation between high-density and increased transit demand.

³¹³Ibid., 29.

TRANSIT & LAND USE DENSITY MATRIX



(Source: WILMAPCO 2030 Regional Transportation Plan, pg. 29)

The WILMAPCO RTP also calls for implementation of a Complete Streets policy,³¹⁴ which increases the mobility and accessibility of land uses. Complete Streets are best used in close proximity to other transit systems such as bus or rail.

Another WILMAPCO recommendation relates to level of service (LOS) calculation for traffic-impact studies (TISs) in the early stages of the planning process. Currently, LOS is calculated for vehicles only.³¹⁵ The recommendation is for LOS to be calculated for vehicles, pedestrian facilities, bicycle facilities, and mass-transit—characterized as a *multimodal LOS*.³¹⁶ This calculation would decrease emphasis on constantly widening roads, moving discussion to investment and improvement of mass-transit, walkability, and bicycle facilities.³¹⁷

WILMAPCO also focuses on industrial land uses and corresponding transportation systems. The *WILMAPCO Regional Freight and Goods Movement Analysis* inventories freight movement in the area, assesses industrial land uses, and projects future demands on the freight transportation system.³¹⁸

³¹⁴Ibid, 40.

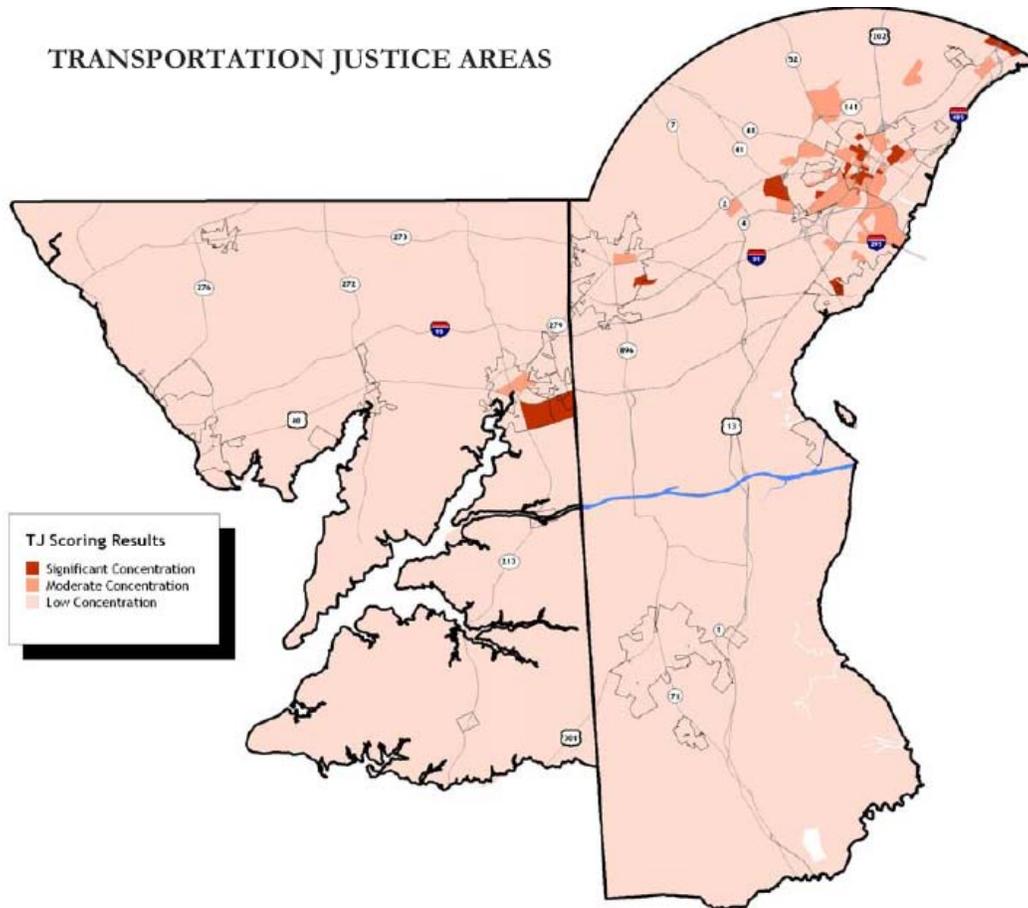
³¹⁵Ibid., 42.

³¹⁶Ibid.

³¹⁷Ibid.

³¹⁸Cambridge Systematics Inc., *WILMAPCO Regional Freight and Goods Movement Analysis*, September 2007, http://www.WILMAPCO.org/freight/Freight_Analysis_Final07.pdf (accessed September 26, 2008).

One piece to the land use/transportation puzzle that is often forgotten is the connection between land use and socio-economic status. How does this connection relate to transportation planning? WILMAPCO defines so called “Transportation Justice” and “Environmental Justice” areas. Transportation Justice Areas are defined as areas having “populations including the elderly, the disabled, and households without an automobile.”³¹⁹



(Source: WILMAPCO Regional Transportation Plan, pg. 43)

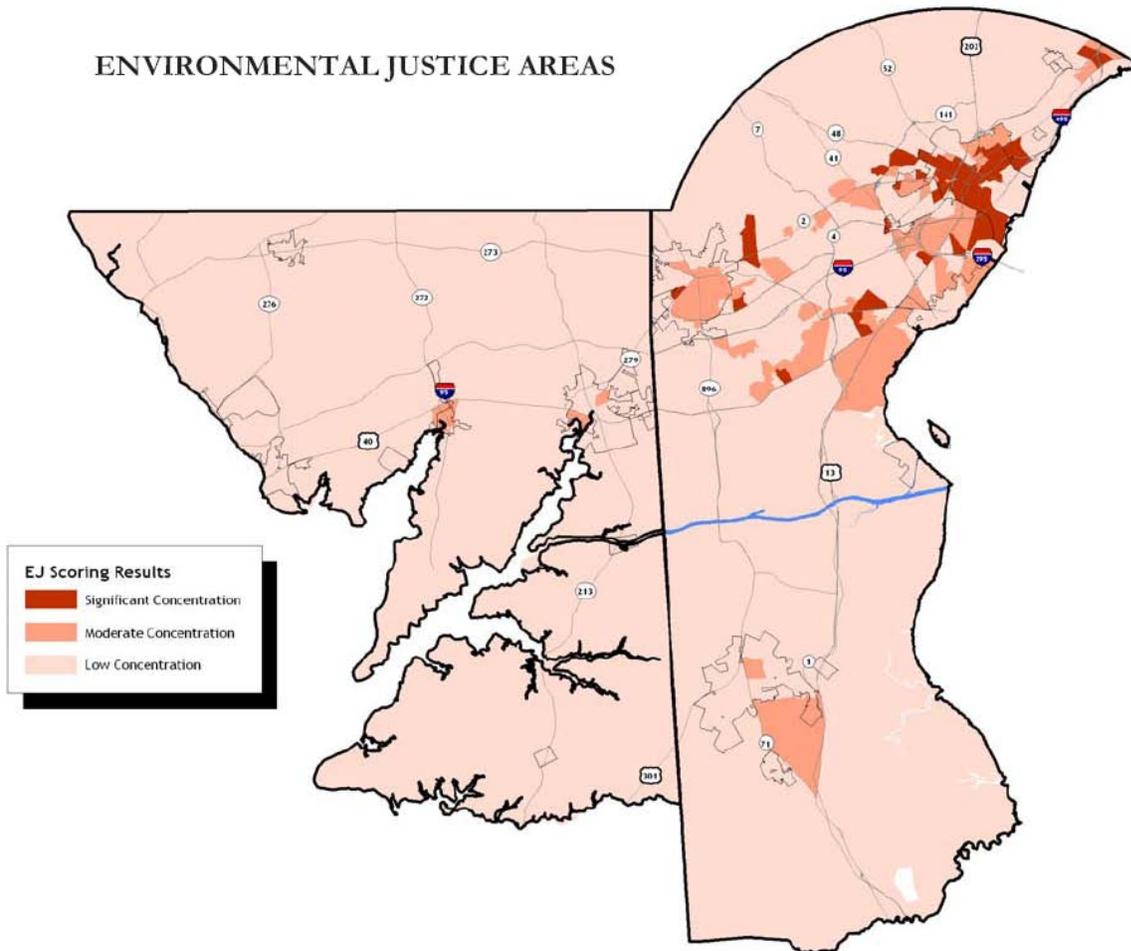
These areas will be priority areas for “improved fixed-route public transit”³²⁰ and improved pedestrian walkability.³²¹ “Environmental Justice” areas include low-income minority populations in need of better transportation opportunity.³²²

³¹⁹WILMAPCO, “Regional Transportation Plan: 2030 Update” (March 22, 2007), http://www.WILMAPCO.org/RTP/Final%202030%20RTP/2030_RTP_APPROVED_MARCH_2007_web.pdf, 43.

³²⁰Ibid.

³²¹Ibid., 44.

³²²Ibid., 56.



(Source: WILMAPCO 2030 Regional Transportation Plan, pg. 57)

WILMAPCO is also a strong advocate for implementation of the “Delaware Bicycle Plan” and the “New Castle County Greenway Plan.”³²³ The idea is to create a network of multimodal paths that interconnect communities, business areas, and recreation areas in order to foster greater transit network efficiency. WILMAPCO also encourages use of mobility-friendly design standards.³²⁴ Mobility-friendly design standards manuals are used during the planning process to ensure that a totality of mobility options are addressed in the development proposal.³²⁵

WILMAPCO coordinates land use/transportation integration with counties, municipalities, and transportation agencies in northern Delaware. WILMAPCO provides assistance to counties and municipalities during the comprehensive plan—update and—implementation process. WILMAPCO assists municipalities such as Delaware City and New Castle with local transportation planning. Specific assistance is also provided to the City of Wilmington regarding the study of downtown neighborhoods. The WILMAPCO 2030 RTP serves as the New Castle County Transportation Plan and as the mobility element of the New Castle County Comprehensive Plan. WILMAPCO also assists with the development and continuous modification of the Southern New Castle County Master Plan as well as other local area studies in the county.

³²³Ibid., 45.

³²⁴Ibid., 55.

³²⁵Ibid.

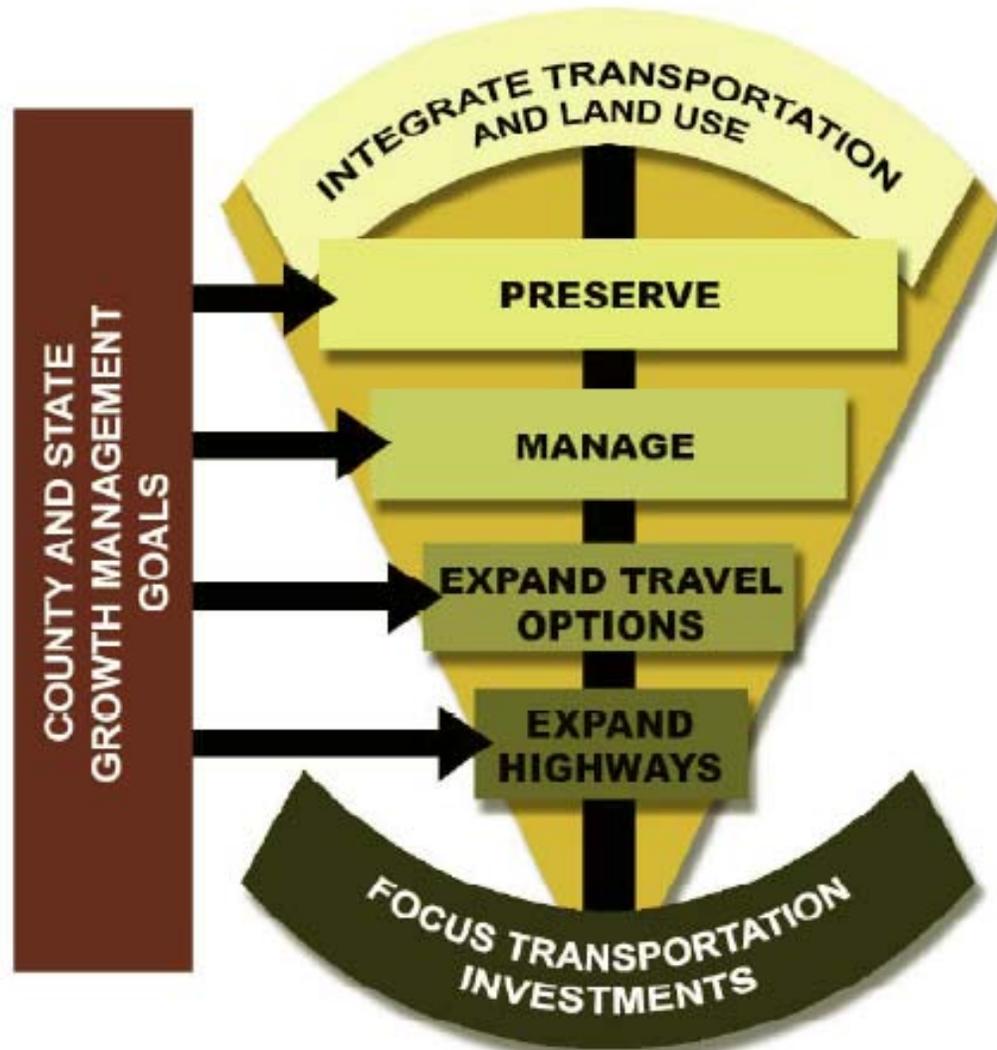
Dover/Kent County Metropolitan Planning Organization (DKCMPO)

The Dover/Kent County Metropolitan Planning Organization (DKCMPO) implements various strategies to better integrate land use and transportation in central Delaware. DKCMPO land use/transportation integration policies include 1) intergovernmental coordination, 2) creation and continuous modification of a Long Range Transportation Plan (RTP), 3) creation and implementation of the “Suburban and Community Street Design Standards Project,” and 4) creation and continuous modification of a transportation improvement program. DKCMPO implements many strategies to boost intergovernmental coordination. Although the DKCMPO does not serve on the PLUS review committee, all members of the PLUS review committee serve on different DKCMPO advisory committees and councils.³²⁶ Representatives from the DKCMPO serve on and assist comprehensive plan update committees, the DelDOT Highway Safety Committee, Dover City government, the Town of Smyrna, and the Town of Milford. The DKCMPO completes transportation studies to assist localities with transportation planning. The DKCMPO participates in DelDOT’s Corridor Capacity Preservation Program, which is described below in the DelDOT current practices section. DelDOT officials assist the DKCMPO in the planning process by informing developers about DKCMPO goals and objectives.³²⁷ This assistance from DelDOT creates a connection between the DKCMPO and the private-sector that encourages greater land use and transportation integration throughout the planning process.

Another policy aimed at increasing land use and transportation integration is the DKCMPO RTP. The DKCMPO frequently modifies the RTP in order to account for rapidly changing circumstances related to regional planning issues. The RTP is focused on a series of connected goals.

³²⁶Wieczreck, Juanita S., Executive Director, Kent County/Dover MPO. Interview conducted 10/21/08.

³²⁷Ibid.



(Source: <http://www.doverkentmpo.org/indexmpo.html>, 1-14)

In order to support the above goals, the DKCMPO is currently adding appropriate language to the RTP to foster transit-ready communities.³²⁸ The RTP is also written to complement Delaware SSPS objectives.³²⁹ The RTP supports the Delaware SSPS by guiding growth toward high-priority land use and transportation investment areas. One manifestation of this support is the RTP proposal to create and implement commercial corridors in Kent County.³³⁰ The commercial corridor integrates commercial land uses with development of advanced transportation systems. Bus transit, road improvements, sidewalks, bike lanes, and parking capacity are all included in a commercial corridor—improvement plan in order to boost mobility and interconnectivity between adjoining commercial land uses, thereby boosting corridor efficiency.³³¹

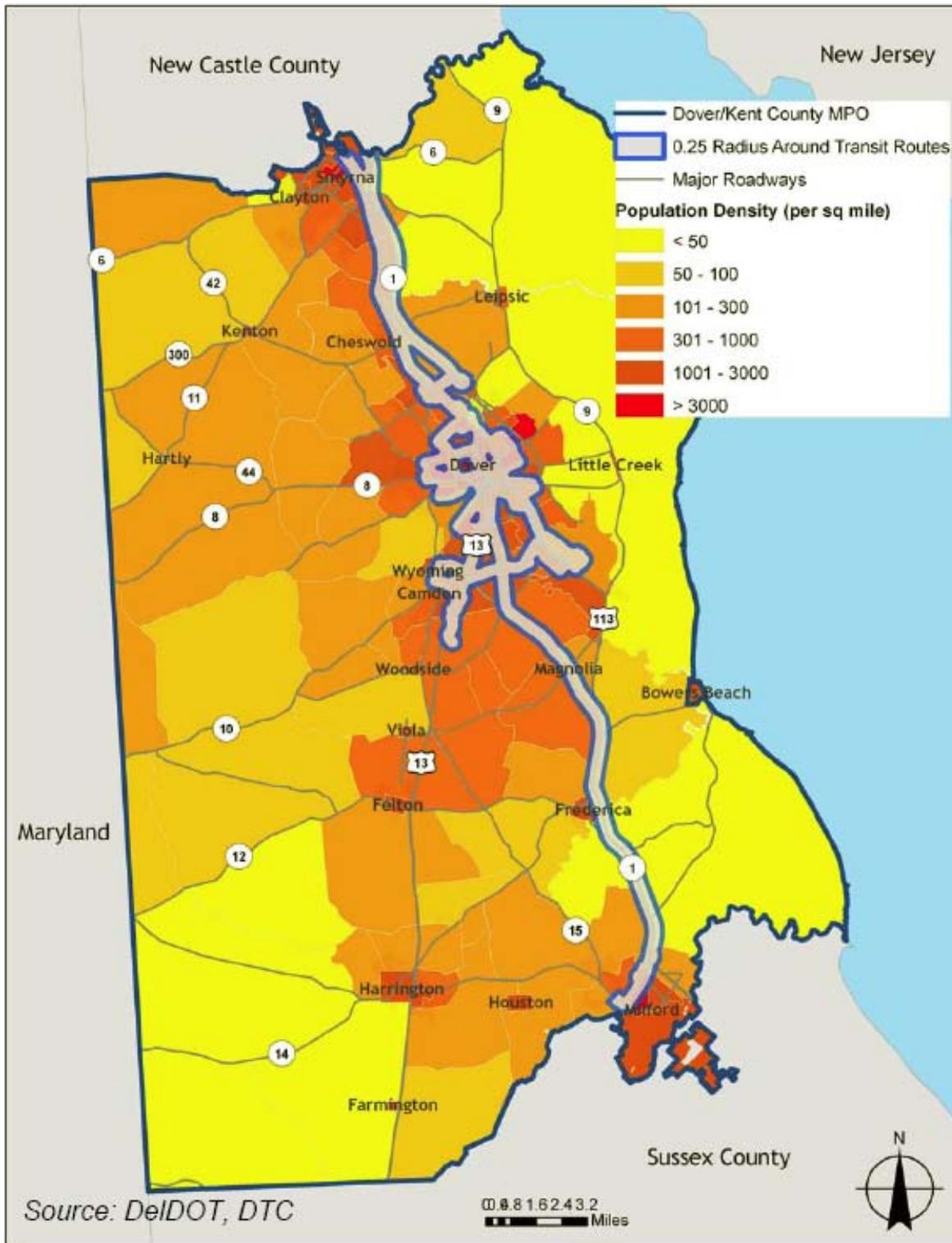
³²⁸Ibid.

³²⁹Dover/Kent County Municipal Planning Organization. *Long Range Transportation Plan*. (May 4, 2005). <http://www.doverkentmpo.org/indexmpo.html>, Chapter 5, 4.

³³⁰Ibid., Chapter 6, 9.

³³¹Ibid.

The RTP also proposes establishing commuter rail service from Wilmington, Del., to Dover, Del.³³² If implemented, this would provide a great opportunity to integrate a rail transportation system with high-density transit-oriented development between Wilmington and Dover. The DKCMPO proactively defined transit-oriented development corridors in Kent County:



³³²Ibid., 13.

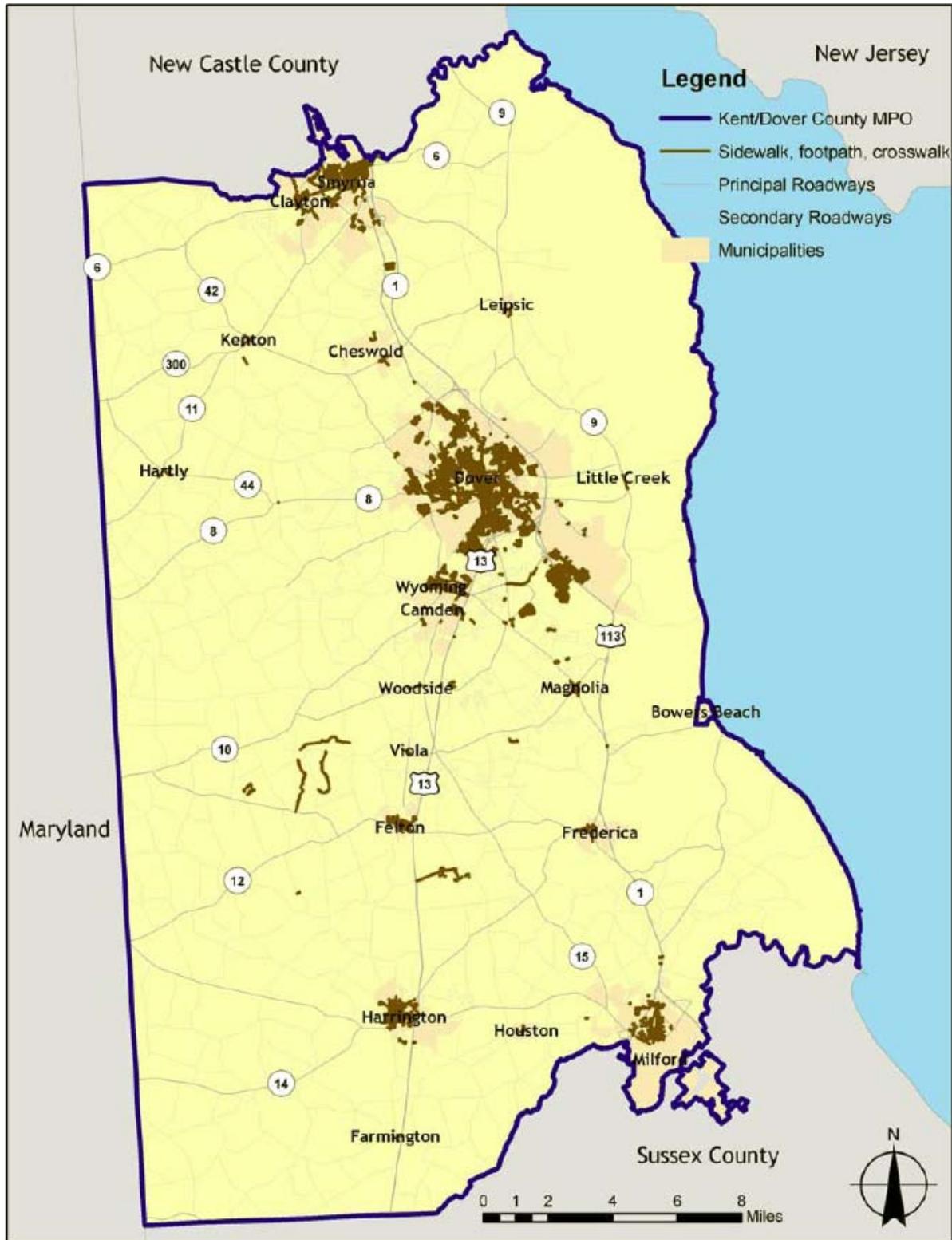
The above map compares transit-line location with population density.

The RTP proposes establishment of multi-modal pathways that interconnect land uses in central Delaware.³³³ This proposal is being coordinated with DelDOT.³³⁴ The RTP recommends that multi-modal pathways be considered during the early stages of the planning-review process.³³⁵ The DKCMPO also inventories on-road bicycle facilities to account for a diversity of transportation options associated with dense land uses in Kent County. The following RTP map indicates the prevalence of sidewalks, crosswalks, and footpaths as they relate to land uses in Kent County. The vast majority of pedestrian facilities correlate with Smyrna, Dover, and Milford. This is expected since the three jurisdictions are the largest in the county. The small towns of Felton and Harrington to a lesser degree have a concentration of pedestrian facilities at the town-center. This visual representation allows policy makers to evaluate pedestrian facilities in the county in order to plan for the future facility construction.

³³³Ibid., 16.

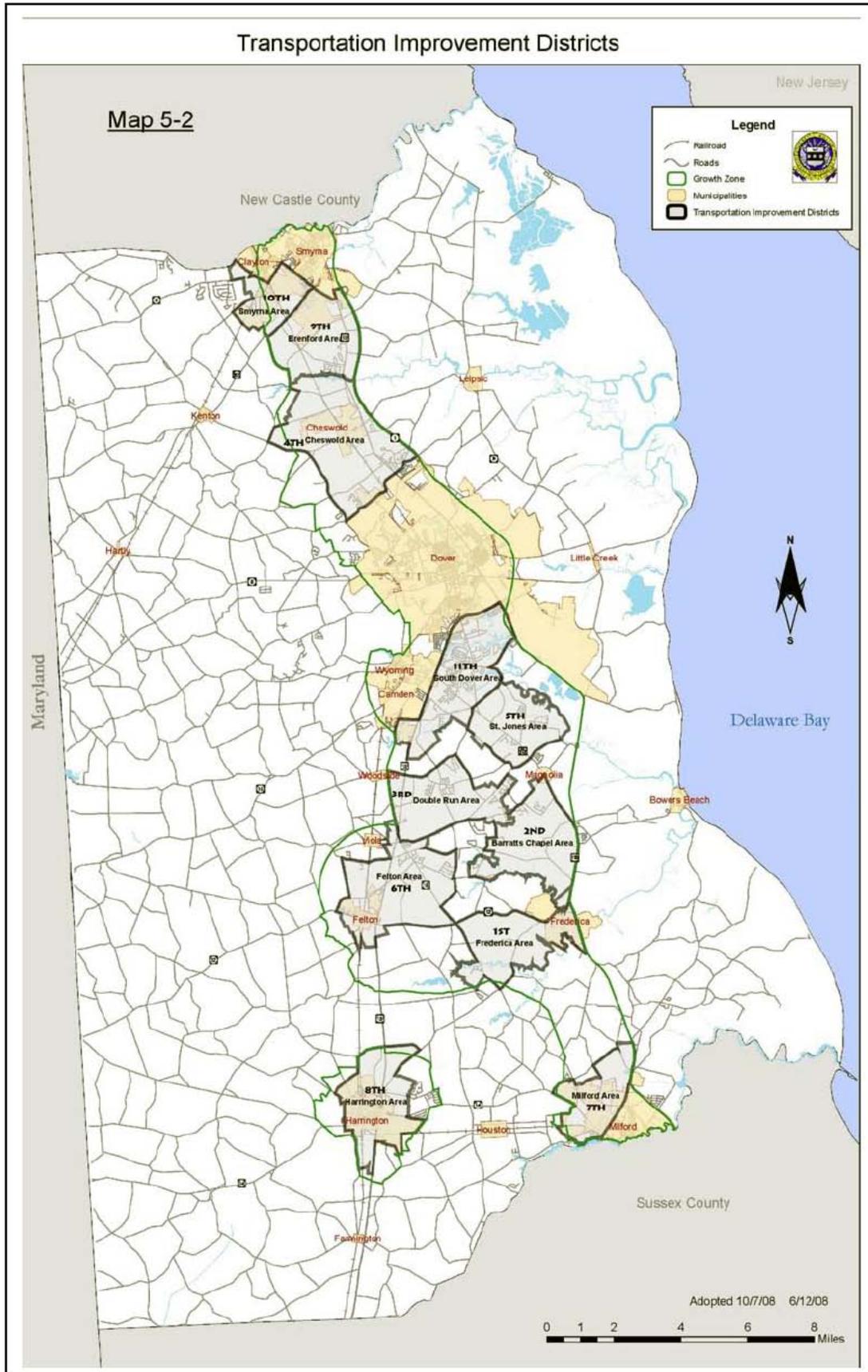
³³⁴Ibid.

³³⁵Ibid.



(Source: DKCMPO Regional Transportation Plan, pg. 3-29)

The DKCMPO map below is a constructive framework for transportation planning within land use corridors in Kent County. These TIDs provide a form of local area planning that allows planners to break apart large land use areas into smaller regions that are more easily examined.



(<http://www.doverkentmpo.org/indexmpo.html>, 5-25)

The DKCMPO completed the “Suburban and Community Street Design Standards Project,” which offers some ordinance-revision recommendations related to land use and transportation integration. A total of 16 recommendations were included in the study.³³⁶ Of the 16 recommendations, nine have direct connections with land use/transportation integration.

- Recommendations #1: Hierarchy of Street Types and #2: Street Type Classifications tie street-type classification to existent land use along the roadway.³³⁷
- Recommendation #4: Linkage Streets would create a diversity of transportation systems that easily and efficiently interconnect adjacent residential land uses within a given area.³³⁸
- Recommendation #9: Street Lighting requires certain levels of street lighting be created for various land uses.³³⁹
- Recommendation #10: Private Streets includes a residential-density requirement that no private street can exist in a residential subdivision with a density greater than one dwelling unit per acre.³⁴⁰
- Recommendation 11: Limited Access/Cross Access “establishes parameters under which cross-access and shared use of site entrances and internal driveways shall be considered and implemented.”³⁴¹ Distinctions based on access are made between residential subdivisions and non-residential subdivisions/business parks.³⁴²
- Recommendation #13: Marked Crosswalks specifically focuses on providing sidewalks adjacent to and connected with commercial shopping areas, schools, open spaces, and residential neighborhoods.³⁴³
- Recommendation #14: School and Transit Bus Stops requires that residential subdivisions of a defined size receive certain levels of baseline transit and school bus facilities.³⁴⁴
- Recommendation #16: Bicycle Parking ties bicycle parking to motor-vehicle parking, which is tied to land use type and size.³⁴⁵

The actual ordinance proposals for the 14th and 16th recommendations are cited below.

Recommendation #14: School and Transit Bus Stops, included in the Transit Provisions category, proposed that:

³³⁶Dover/Kent County Municipal Planning Organization. Suburban & Community Street Design Standards Project: Ordinance Recommendations. (June 2000). <http://www.doverkentmpo.org/indexmpo.html>, 3.

³³⁷Ibid.

³³⁸Ibid., 17.

³³⁹Ibid., 33.

³⁴⁰Ibid., 36.

³⁴¹Ibid., 40.

³⁴²Ibid.

³⁴³Ibid., 46.

³⁴⁴Ibid., 49.

³⁴⁵Ibid., 56.

All subdivision and residential site development proposals involving more than 50 dwelling units shall be required to designate and reserve locations for transit and school bus stop accommodations within and/or adjacent to the proposed development.³⁴⁶

Recommendation #16: Bicycle Parking, included in the Bicycle Provisions category, proposed that:

Site development plan proposals involving parking lots with 20 or more motor-vehicle parking spaces shall provide at least one (1) bicycle parking space for every ten car spaces provided. Bicycle parking spaces shall be in the form of bicycle racks and/or bicycle lockers. Bicycle rack structures shall be limited to a maximum capacity of ten bicycles per rack. In no case shall more than 20 bicycle parking spaces be required at any given site.³⁴⁷

DKCMPO also created the Transportation Improvement Program (TIP), which prioritizes transportation improvement projects based on a weighted-scoring system. DKCMPO constantly updates and modifies this document in order to account for a rapidly changing environment. The points system integrates land use and transportation directly by considering transit, pedestrian/bicycle facilities, and support for the RTP and comprehensive plan as project-prioritization parameters. Together these weighted factors account for 50 percent of the TIP project scoring. Twenty percent of the score is based on support for the Comprehensive Plan which defines the short-term and long-term transportation/land use issues. Another 20% relates to the RTP, which follows SSPS for integrating land use and transportation as mentioned above. Another five percent is allocated for incorporation of pedestrian and bicycle-facility integration into development site proposals. The same is allocated for transit. The points-system matrix is shown below:

³⁴⁶Ibid., 49.

³⁴⁷Ibid., 56.

Factor	Description	Weight
Safety	Extent to which project location represents a safety hazard/solution for motorists, pedestrians, bicyclists and/or transit users.	0.20
Support for Comprehensive/Community Plans	Extent to which the project supports policies or is derived from an approved County or Municipal Comprehensive Plan or a special transportation study, such as corridor study or bike plan.	0.20
Environmental Justice	Extent to which project has disproportionately high and adverse effects on minority and low-income populations or disproportionately benefits populations not protected under Title VI of the Civil Rights Act of 1964.	0.10
Transit	Support shifting people/goods to rail or bus; or support more efficient operation of rail or bus.	0.05
Pedestrian/Bicycle Travel	Extent to which project incorporates/supports/enhances bicycle/pedestrian access or use.	0.05
Economic Impacts	Extent to which project supports worker and customer access to major commercial sites, freights, access to major business/industrial sites, and transshipment points, and supports economic development.	0.05
Sustainability	Extent to which a project can be adequately maintained after completion.	0.02
System Continuity	Extent to which a project fills a gap or eliminates functional bottlenecks/pinch points. Project has been identified in the congestion management system.	0.10
Environmental Impacts	Extent to which project avoids problems related to drainage, noise, cultural/historic areas, ecologically sensitive areas.	0.03
Support for the LRTP	Extent to which project supports and implements the goals of the MPO's Long Range Transportation Plan.	0.20
Total		1.00

(Source: Transportation Improvement Program, pg. 8)

Salisbury/Wicomico County Metropolitan Planning Organization (SWCMPO)

The SWCMPO implements many strategies to integrate transportation and land use. Although the SWCMPO area of concern is in Maryland; a small portion of the SWCMPO area is in Delaware, including the town of Delmar, Del. and a portion of Sussex County surrounding the town.³⁴⁸ SWCMPO has existed for approximately five years and is fairly small both in population covered and staff size.³⁴⁹ SWCMPO currently has one land use planner working part-time as the staff person.³⁵⁰ The main activity that the SWCMPO is involved with is the identification of road corridors that need extensive, detailed study. Four of these have been identified, one of which is the “Delmar- Bi-State Boulevard Corridor,” which includes U.S. Route 13 North, Bi-State Boulevard, and the surrounding area. This is the third corridor prioritized and is in the preliminary stages of the planning process.³⁵¹

SWCMPO officials follow a general process when studying road corridors in need of improvement. After future traffic is projected by roadway, an analysis is completed to determine what the level of service (LOS) would be and recommendations are made as to what type of road improvements are needed.³⁵² This information is used by the local Public Works Departments

³⁴⁸Pusey, Gary. Executive Director, Salisbury/Wicomico County Metropolitan Planning Organization. Interview conducted 10/21/08.

³⁴⁹Ibid.

³⁵⁰Ibid.

³⁵¹Ibid.

³⁵²Ibid.

during the review of local development proposals submitted. This could result in road improvements being required by the developer.

Affected jurisdictions from Maryland and Delaware are included as members of the SWCMPO Technical Advisory Committee. Currently, various localities in the SWCMPO area are considering Adequate Public Facility Ordinances (APFOs) and Impact Fees in order to better link land use and transportation as co-dependent entities.³⁵³

Delaware Transportation Management Association (DTMA)

The DTMA impacts the land use and transportation integration process through efforts to better connect the private-sector with public-sector transportation-planning efforts. The DTMA defines itself as a “non-profit organization of private corporations and public agencies dedicated to achieving reductions in traffic congestion, improving mobility and air quality, and educating employers and their employees about transportation alternatives.”³⁵⁴ The DTMA is also involved with the following committees:

- WILMAPCO Technical Advisory Committee
- DKCMPO Technical Advisory Committee
- WILMAPCO and DKCMPO Subcommittees (air quality, non-motorized transportation, and congestion management)
- New Castle County Smart Growth Committee
- Newark Transit Subcommittee
- Wilmington Renaissance Transportation Committee
- Wilmington Circulation Study Committee
- 2010 Campaign for Active Transportation Committee
- Delaware Chamber of Commerce Transportation Committee
- Central Delaware Chamber of Commerce Transportation Committee
- Delaware Economic Council
- Air Quality Partnership through Delaware Natural Resources and Environmental Control
- Delaware Valley Regional Planning Council³⁵⁵

Additionally, members of the DTMA are associated with the Newark and Wilmington Chambers of Commerce, providing a connection with the greater business community in these areas.³⁵⁶ DTMA input is important to policy makers and is taken into consideration.³⁵⁷

The DTMA is cooperating with Cecil County officials to create a Cecil County TMA. Even though Cecil County is in Maryland, greater transportation/land use coordination between Cecil and New Castle Counties is needed to improve the transportation system in the region.

The DTMA offers tax-incentive packages to employers who advance transportation fringe benefits to employees. The T21 Compensation Plus Program gives employees up to \$110 per

³⁵³Ibid.

³⁵⁴Delaware Transportation Management Association. Website. <http://www.tmadelaware.org/>

³⁵⁵Osborne, Bill, Executive Director, Delaware Transportation Management Association. Interview conducted 10/22/08.

³⁵⁶Ibid.

³⁵⁷Ibid.

month to use to commute to work via transit or up to \$215 per month for parking; in return the employer receives deductions on payroll taxes.³⁵⁸ The T21 Set-Aside Plus Program and the T21 Combination Plus Program provide similar incentives for employees and employers.³⁵⁹ The DTMA Travelink Program allows employers with transportation plans approved by DelDOT to receive tax credits against certain corporate taxes.³⁶⁰ The objective of the Travelink Program is:

to reduce commute trip traffic congestion during peak travel periods and also non-peak travel periods for welfare-to-work programs by supporting the use of alternative modes of employees commuting from their homes or within the proximity of their homes to their places of employment.³⁶¹

The DTMA also encourages “teleworking” as a way for businesses to reduce congestion, traffic, and commuting in general. Teleworkers work at home or at a satellite office, thereby, reducing or eliminating the commute to work.³⁶² Vanpool programs are another option for employers interested in reducing parking needs.³⁶³ DTMA encourages placement of “Commuter Corners” in business offices. “Commuter Corners” provide information to employees and employers regarding transit opportunities in the area.³⁶⁴ The “Commuter Corners” provide literature educating individuals on how to use transit systems that may be located nearby, so that they will know how to use them.

DTMA also encourages employers to participate in preferential parking programs, which help to foster carpooling and vanpooling.³⁶⁵ DTMA administers “Commuter Surveys” so that employers interested in addressing transportation-related issues can first get an assessment of what the commuter situation is for their employees.³⁶⁶ “Employee Cluster” maps can also be created for employers.³⁶⁷ These maps show employers where their employees come from each day in order to show where clusters of workers may exist, thus, highlighting where opportunities for ridesharing exist. Comparing “Employee Cluster” maps with “Transit System” maps allows employers to more clearly see the opportunities for their employees to use alternative transit systems to get into work.

³⁵⁸Delaware Transportation Management Association. Website. <http://www.tmdelaware.org/>

³⁵⁹Ibid.

³⁶⁰Ibid.

³⁶¹Ibid.

³⁶²Ibid.

³⁶³Ibid.

³⁶⁴Ibid.

³⁶⁵Ibid.

³⁶⁶Ibid.

³⁶⁷Ibid.

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Appendices

Appendix 1

(Note: Appendix 1 refers to Recommendation 1, Implementation Strategy 8. The sample ordinance defines one of the many transit-supportive zoning districts defined by the city of Beaverton, Oregon.)

20.20.10. Station Area - Medium Density Residential Districts (SA-MDR)

1. **Purpose.** The zoning district is generally located within one mile of light rail station platforms. Areas designated SA-MDR are medium-density residential neighborhoods with a minimum of 24 units per net acre and a maximum density of 30 units per acre. [ORD 4111; June 2000] Secondary uses include commercial uses and neighborhood parks. Small free-standing office uses are allowed within multiple use developments as defined in Chapter 90 of this ordinance, provided they do not exceed more than 50% of the residential floor area provided within the development, and that minimum residential densities are met. Retail uses are only allowed within multiple use developments, provided each individual establishment does not exceed more than 10,000 square feet of floor area, and that minimum residential densities are met. [ORD 4224; August 2002]
2. **District Standards and Uses.** Station Community – Medium Density Residential Districts and uses shall comply with the following:
 - A. Permitted Uses:

Unless otherwise prohibited or subject to a conditional use, the following uses and their accessory uses are permitted:

 1. Administrative Facilities (subject to Use Restriction c.)
 2. Commercial Schools
 3. Attached Dwellings [ORD 4224; August 2002]
 4. Eating or Drinking Establishments (subject to Use Restrictions b and e.)
 5. Educational Institutions
 6. Financial Institutions
 7. Home Occupations
 8. Live/Work Facilities

9. Medical Clinics (subject to Use Restriction c.)
 10. Nursery, Day or Child Care Facilities 20.20.10.2.A.
 11. Office (subject to Use Restriction c.)
 12. Parks
 13. Places of Worship (subject to Use Restriction a.)
 14. Rental Businesses (subject to Use Restriction d.)
 15. Residential Care Facilities [ORD 4036; March 1999]
 16. Retail Trade (subject to Use Restrictions b and e.)
 17. Service Businesses (subject to Use Restrictions b and e.)
 18. Social or Fraternal Organizations (subject to Use Restriction a.)
 19. Utility Transmission Lines
 20. Collocation of wireless communication facilities on an existing wireless communication facility tower [ORD 4248; April 2003]
 21. Installation of wireless communication facilities on streetlights, excluding streetlights on power poles, traffic signal lights, and high voltage power utility poles within public road rights-of-way [ORD 4248; April 2003]
 22. Attachment or incorporation of wireless communication facilities to existing or new buildings or structures that are not exclusively used for single-family residential or multi-family residential purposes [ORD 4248; April 2003]
 23. Temporary wireless communication facilities structures (See also Temporary Structures – Section 40.80) [ORD 4248; April 2003]
 10. Temporary Living Quarters
 11. Transit Centers
 12. Utility Installations, other than transmission lines
 13. Vehicle Sales, Lease or Rental (subject to Use Restrictions b and f.)
- 20.20.10.2.B.

14. Construction of a wireless communication facility tower [ORD 4248; April 2003]
 15. More than two (2) satellite antennas greater than two (2) meters in diameter on one (1) lot [ORD 4248; April 2003]
 16. Direct-to-home satellite service having antennas greater than one (1) meter in diameter [ORD 4248; April 2003]
- C. Prohibited Uses: The following principal, secondary or accessory non-transit-supportive uses shall not be established as new uses, nor may existing uses or structures be converted to the following uses in any Station Community District:
1. Automotive Services, Major
 2. Bulk fuel dealerships
 3. Bulk retail uses
 4. Car washes
 5. Cemeteries
 6. Detached Dwellings [ORD 4224; August 2002]
 7. Electrical power generators
 8. Golf courses
 9. Junk yards and motor vehicle wrecking yards
 10. Kennels, excluding those accessory to veterinary Medical Clinics or medical Research Facilities
 11. Manufacturing
 12. Self Storage Facilities [ORD 4354; June 2005]

13. Mobile Home Parks
14. Motels
15. Nurseries and greenhouses, retail and wholesale
16. Recreational vehicle parks and campgrounds
17. Research Facilities
18. Solid waste transfer stations
19. Truck stops
20. Warehouses or Cold Storage Plants, except those storing materials or products primarily manufactured on site or used in the on-site process, or used in the maintenance or operation of on-site facilities.
21. Storage yards
22. Attachment of a wireless communication facility to existing or new non-residential buildings that does not utilize stealth design [ORD 4248; April 2003]
23. Other uses which in the determination of the Director are non-transit-supportive and do not meet the intent and purpose of the Station Area – Medium Density Residential District as stated in the comprehensive plan and this ordinance.

D. Use Restrictions:

1. Uses which include drive-in, drive-through or drive-up window facilities within the Station Area - Medium Density Residential Districts are subject to approval of a Conditional Use.

20.20.10.2.D.2

2. Subsections A and B above indicate permitted and conditional uses subject to restrictions. The restrictions are described in this subsection. The letter reference in parenthesis found for each use permitted with restrictions in subsections A and B refer to the restrictions below.
 - a. Buildings larger than 10,000 square feet are subject to approval of a Conditional Use.

- b. These uses are permitted only within multiple use developments, and shall have a maximum size of 10,000 sq. ft., provided that the minimum residential densities are met.
- c. This use is allowed only in multiple use developments. Office uses shall not exceed 50% of the proposed residential floor area within the multiple use development, and shall be permitted only when minimum residential densities are met.
- d. These uses are permitted only within multiple use developments, and shall have a maximum size of 5,000 sq. ft., provided that the minimum residential densities are met.
- e. Bookbindingeries shall have a maximum size of 2,000 square feet.
- f. This activity is conducted wholly within an enclosed structure. No accessory open air sales, display, or storage allowed with this use.

E. District Requirements:

(reserved)

Appendix 2

Place Type	Identifying Characteristics	Form	Building Placement	Frontage Types	Typical Density	Edge Treatments and Open Space
Activity Centers, Growth Centers and Transit Station Areas	<ul style="list-style-type: none"> Diversity of uses with citywide and regional draw Medium and high density residential uses, though varies by location Accommodates retail and commercial services, entertainment uses, educational campuses, or other large-scale cultural or public facilities Significant pedestrian and transit orientation May have concentration of employment Mix of uses occurs within and among structures 	<ul style="list-style-type: none"> Traditional urban form regarding building siting and massing Unique urban character that distinguishes them from other commercial uses 	<ul style="list-style-type: none"> Small or no setbacks Buildings oriented to street 	<ul style="list-style-type: none"> Storefronts Landscaped buffer areas 	<ul style="list-style-type: none"> Medium to very high 	<ul style="list-style-type: none"> Plazas and squares Pocket parks Trees planted in pits/trenches Streetscaping but minimal planted boulevards
Commercial Corridors	<ul style="list-style-type: none"> Historically have been prominent destinations in city High traffic volumes Mix of uses, with commercial uses dominating Residential uses tend to be medium to high density Primary Transit Network corridors 	<ul style="list-style-type: none"> Buildings generally retain a traditional urban form in their siting, massing and relationship to the street 	<ul style="list-style-type: none"> Shallow to medium setback Buildings oriented to street 	<ul style="list-style-type: none"> Storefronts Landscaped buffer Fences 	<ul style="list-style-type: none"> Medium to high 	<ul style="list-style-type: none"> Limited Trees planted in pits/trenches Streetscaping Few planted boulevards
Community Corridors	<ul style="list-style-type: none"> Connect more than two neighborhoods Moderate traffic volumes and may be principal travel routes Primary Transit Network corridors with some exceptions Primarily residential with intermittent commercial uses clustered at intersections in nodes Small scale retail sales and services serving immediate neighborhood 	<ul style="list-style-type: none"> Traditional commercial and residential form and massing 	<ul style="list-style-type: none"> Residential front yard setbacks Small or no setbacks in Commercial Nodes Buildings oriented to street 	<ul style="list-style-type: none"> Storefronts Landscaped buffer areas Porches Fences Residential front yards 	<ul style="list-style-type: none"> Low to medium 	<ul style="list-style-type: none"> Parks Planted boulevards except in commercial nodes Residential front yards
Neighborhood Commercial Nodes	<ul style="list-style-type: none"> Generally retail or services on at least three corners of intersection Oriented to pedestrian traffic, with few automobile-oriented uses Generally serve needs of surrounding neighborhood with limited number of businesses serving larger area Commercial uses are typically focused close to a single intersection of community corridors though may be more dispersed Mix of uses occur within and among structures 	<ul style="list-style-type: none"> Generally have a historic commercial function and form 	<ul style="list-style-type: none"> Small or no setbacks Buildings oriented to street 	<ul style="list-style-type: none"> Storefronts Landscaped buffer areas 	<ul style="list-style-type: none"> Medium to high 	<ul style="list-style-type: none"> Streetscaping Trees planted in pits/trenches
Major Retail Centers	<ul style="list-style-type: none"> Large concentration of retail floor space, and have at least one major chain of grocery or household goods retail Significant parking Convenient and direct access to a the regional road network 	<ul style="list-style-type: none"> Varies, generally large single story retail buildings with large surface parking lots Policy direction for reinforcing elements of traditional urban form 	<ul style="list-style-type: none"> Large setbacks Commercial frontage Surface parking in front 	<ul style="list-style-type: none"> Parking lots Storefronts Landscaped buffer areas Fences 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Trees planted in pits/trenches Landscaped sidewalks Parking lots
Residential Neighborhood	<ul style="list-style-type: none"> Primarily residential but may contain scattered non-residential uses including small scale commercial and public/institutional 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Low to very high 	<ul style="list-style-type: none"> Parks Planted boulevards
Industrial/Employment District	<ul style="list-style-type: none"> Protected areas intended for industrial growth and expansion without residential uses in their boundaries Designated in the Industrial Land Use and Employment Policy Plan 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies 	<ul style="list-style-type: none"> Varies

Definitions and names are derived from the *Minneapolis Plan*

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