Evaluating the State of Mobility Management and Specialized Transportation Coordination in Delaware

June 2017

Prepared for
Delaware Department of Transportation

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Preface & Acknowledgements

As the director of the Institute for Public Administration (IPA) at the University of Delaware, I am pleased to provide *Evaluating the State of Mobility Management and Specialized Transportation Coordination in Delaware.* As Delaware's transportation disadvantaged population grows, demands for accessible transportation and alternative mobility options are also likely to increase. The primary objectives of this project were to assist the Delaware Transit Corporation (DTC), an operating division of the Delaware Department of Transportation (DelDOT), in assessing current specialized transportation mobility management and coordination initiatives in Delaware, identifying key stakeholders and providers who might participate in resolving unmet needs, duplication of services, and improving service efficiencies, and providing recommendations to DTC on mobility management best practices that might support a sustainable and customer-driven mobility landscape here in Delaware. The provision of mobility options is a critical component in addressing the needs of all Delaware residents and specifically the transportation-disadvantaged population.

This project was conducted in cooperation with and support from DelDOT and DTC. IPA Policy Scientists Julia O'Hanlon and Marcia Scott served as Project Managers and Principal Investigators for this work. I would like to thank graduate students Evan Miller and Jessica Stump for their work on this project. I would also like to thank Lisa Moreland and Sarah Pragg for their editorial and formatting assistance.

This report builds on IPA's work and research over the past decade on the provision of and growing demand for specialized transportation services in Delaware. That research framed major issues and recommended relevant changes to public policy. Combined with the recommendations provided in this report, IPA, in partnership with DTC, has developed a practical and appropriate path forward for the development and implementation of policies and partnerships that will help in developing a long-range mobility management and coordination initiatives in Delaware. I hope that state agencies and service providers throughout the state can use this information to strategically plan for the needs and issues related to Delaware's growing demands for alternative mobility and transportation options.

Jerome R. Lewis, Ph.D.

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Executive Summary

Purpose of Project

Fiscal Year (FY) 2016 project work launched a multi-phase plan to evaluate the state of mobility and specialized transportation services coordination in Delaware. The Institute for Public Administration (IPA), in partnership with Delaware Transit Corporation (DTC), an operating division of the Delaware Department of Transportation (DelDOT), conducted extensive research and community outreach to better understand and develop recommendations for the implementation of policies and partnerships to improve Delaware's specialized transportation and mobility management framework.

Outcomes of the research and outreach work are detailed throughout this report and identify several recurring themes and ongoing challenges:

- Delaware's ongoing mobility and specialized transportation challenges are exacerbated by the state's increasing senior[1] population and demands on current public transit options.
- Primary "demand drivers," beyond changing demographics, include disconnects between land-use and transportation/transit and requested paratransit trips for non-emergency medical trips.
- Mobility coordination challenges are aggravated by a lack of awareness of available services within each county as well as inadequate veterans' transportation services.
- Unmet mobility needs and service gaps extend beyond DTC's reach and should include alternative, community-based services besides those provided at the state agency level.
- DTC is committed to addressing the state's rising costs and demand for specialized transportation services, as evidenced by the agency's implementation of its Transit Redesign Implementation Plan, which focuses on approaches for managing and delivering coordinated transportation services to all, particularly transportation-disadvantaged individuals.
- New and innovative approaches to addressing the state's specialized transportation and mobility coordination are possible and underway in Delaware.
- Recognition of current U.S. Department of Transportation (U.S. DOT) Federal Transit Administration's (FTA) policies and initiatives are imperative and should provide the basis for developing the state's contemporary mobility management framework.

[1] The terms "senior" and "older adults" are used interchangeably in the report and may be defined as those 65 and older (65+).

- Consideration of national and regional best practices, along with the expansion of new partnerships among the public, private, and nonprofit sectors, are key components of improving the state's transportation services and mobility framework development.

These themes and challenges suggest the need for a comprehensive strategy to address the changing landscape of transportation coordination and mobility management in Delaware. Subsequent work will aim to expand on this initial phase by supporting and advancing initiatives underway to reduce costs pressures for all transit modes, address unrestricted use of paratransit services, and create alternative and affordable transportation options for all Delawareans.

Areas of Focus

This report details the FY 2016 work according to the following areas of focus:

- *Applied Research*: Assessing Current Initiatives and Engaging Specialized Transportation Providers
- *Research and Policy Analysis*: Evaluating National and Delaware-Specific Mobility Management Efforts and Best Practices
- *Education and Outreach*: Facilitating a Statewide Policy Forum and Outreach on Mobility Coordination

Scope of Work and Methodology

Details about the scope and methodology used to conduct this work are described in the Introduction of this report. Highlights of the process include:

Applied Research: Assessment of Current Initiatives and Mobility Management Practices in Delaware

- Gathered detailed information of current initiatives underway to better coordinate specialized transportation services in Delaware.
- Conducted interviews, meetings, and teleconferences with key specialized transportation service providers and stakeholder groups throughout Delaware.
- Prepared a preliminary inventory of all current specialized transportation services in Delaware to include number of clients served, types of services provided, and the location of current service providers.

Research and Policy Analysis: Evaluation of National and Delaware-Specific Mobility Management Efforts and Best Practices

- Researched and analyzed changes in federal and state policies related to specialized transportation and mobility management.
- Conducted a literature review to identify successful "best-practice" models of mobility management and specialized transportation coordination services in other states/regions/jurisdictions.

Education and Outreach: Facilitation of Stakeholder Engagement and Outreach on Mobility Coordination

- Conducted two surveys to gather detailed information of current initiatives underway to better coordinate specialized transportation services in Delaware.
- Convened county-based workshops involving area stakeholders and transportation providers.
- Facilitated a statewide policy forum.

Primary Project Deliverables

- Preliminary Inventory of Specialized Transportation Services in Delaware
- Best-Practice Research and Analysis
- Summary of Survey Responses of Transportation Service Providers
- Summaries of County-Based Workshops
- Summary of Statewide Forum and Polling Results
- Preliminary Maps of Age-Restricted Communities in Delaware
- Final Recommendations and Path Forward

Final Recommendations and Path Forward

Details of IPA's recommendations and suggested path forward are included in the final section of this report. The following are the fundamental recommendations:

- Update the *Delaware Statewide Action Plan to Coordinate Human Services Transportation* (i.e., Statewide Action Plan), which has not been comprehensively updated since published in 2007.
- Realign Delaware's Section 5310 program.
- Advance a mobility management framework in Delaware.
- Consider piloting national best-practice models appropriate for Delaware.
- Develop and implement an ongoing education and outreach strategy.
- Elevate the importance of land-use and transit integration.

Introduction

Problem Statement

To provide optimal mobility to the traveling public, the quality, efficiency, and cost-effectiveness of transportation services are paramount. Yet, mobility management and coordination of specialized transportation services remain a challenge for Delaware and its transportation-disadvantaged individuals. Coordinating transportation among service providers has the potential to resolve service gaps and unmet needs, eliminate duplication of services, and improve service efficiencies. Enhanced mobility coordination and "customer-focused mobility management" practices—concepts endorsed by the American Public Transit Association—are key "to creating a full range of well-synchronized mobility services within a community" (APTA, 2012).

The provision of mobility options is a critical component in addressing the needs of all Delawareans and specifically the transportation-disadvantaged populations.[2] The federal Coordinating Council on Access and Mobility (CCAM) defines the coordination of specialized transportation services as "a process through which representatives of different agencies and client groups work together to achieve any one or all of the following goals: more cost-effective service delivery; increased capacity to service unmet needs; improved quality of service; and service that is more easily understood and accessed by riders" (CCAM, 2004). While this definition dates back to 2004, a new strategic framework and subsequent policy directives—advanced under Fixing America's Surface Transportation (FAST) Act legislation—will require all states, including Delaware, to move beyond focusing primarily on human-services transportation coordination. A January 2017 industry update by Federal Transit Administration's (FTA) Coordinating Council on Access and Mobility sets forth a vision to "enable equal access to coordinated transportation for all Americans" and "improve[ing] the availability, accessibility, and efficiency of transportation for targeted populations" (FTA, 2017). CCAM's new strategic framework focuses on four overarching goals to:

1. Improve access to the community through transportation.
2. Enhance cost-effectiveness of coordinated transportation.
3. Strengthen interagency partnerships.
4. Establish future models for coordinated transportation (e.g., improved technologies and unified policies and procedures) (FTA, 2017).

[2] While there is not a universal definition, transportation-disadvantaged populations include but are not limited to older adults, persons with disabilities, veterans, non-drivers, households lacking cars, and low-income individuals.

In Delaware, coordination of specialized transportation services continues to focus on two primary special needs populations—older adults and persons with disabilities. Moreover, there continues to be significant coordination challenges among providers of specialized transportation services in Delaware. The Delaware Transit Corporation (DTC), a division of the Delaware Department of Transportation (DelDOT), which operates as DART First State, has assumed the primary burden (and costs) to transport special needs populations in Delaware. Other major providers include LogistiCare, a Medicaid transportation broker service; Section 5310 sub-recipient organizations that provide human-service transportation; and other nonprofit and for-profit entities providing services to transportation-disadvantaged populations.

It has been over a decade since an assessment of Delaware's human-services transportation system was conducted. Assessment efforts led by several statewide working group meetings in 2007 resulted in the publication of the *Delaware Statewide Action Plan to Coordinate Human-Services Transportation* (i.e., Statewide Action Plan), and subsequent county-level plans. Barriers to mobility coordination identified in the 2007 Statewide Action Plan still exist. Projected demographic changes, "off-loading" of trips to paratransit by other transportation providers, high customer expectations for demand-response services, and paratransit services that exceed federal ADA mandates continue to burden and contribute to an unsustainable growth curve of paratransit services. Additionally, emerging trends are affecting the state's mobility coordination efforts:

- Lack of a mandate and incentives to coordinate human-service transportation at the state agency level and among Section 5310 subrecipient organizations.
- Inability to adequately track state spending on coordination activities associated with specialized transportation for human/social services.
- Lack of a project prioritization and funding allocation process that considers the needs of all transportation-constrained populations (above and beyond older adults and persons with disabilities).
- Effects of federal- and state-level funding pressures—including a debate over how to close a projected FY 2018 $350 million budget deficit.
- Deployment of advanced transportation technology and innovation to harness the potential of on-demand mobility options to make transportation systems more accessible and spur innovative projects.
- Implications of the federal Fixing America's Surface Transportation (FAST) Act, which emphasizes Mobility on Demand (MOD) as an innovative, user-focused approach that

- "leverages emerging mobility services, integrated transit networks and operations, real-time data, connected travelers, and cooperative Intelligent Transportation Systems (ITS) to allow for a more traveler-centric, transportation system" (U.S. DOT, n.d.).

As identified through the various project phases and areas of focus, the state's three counties experience unique transportation and mobility challenges—based on each area's demographic and geographic composition. However, ongoing and broader challenges remain similar among the counties, which present both opportunities and barriers for improved coordination of human-services and public transportation. Continuing challenges include a myriad of specialized services that are not well coordinated or efficiently managed; lack of information and resource sharing among providers; the false assumption by human-service transportation providers and the general public that DART paratransit services are the "default" services with unlimited resources; continuing land-use planning and transit disconnections; and need for political leadership to elevate the importance of, and ongoing attention to, transportation human-services coordination at the state-agency level.

While new and innovative transportation alternatives are being piloted throughout Delaware, information about these alternatives and other entities providing specialized transportation services is not widely known or available through a comprehensive, one-stop-shop resource. Moreover, because Delaware lacks a one-click (via website visit)/one-call (via phone) transportation resource center, scheduling and arranging for cost-effective and efficient specialized transportation can be problematic.

Scope of Work and Methodology

A goal of this research is to build upon mobility management and coordination efforts initiated by the state in the late 2000s and subsequent research, including IPA's studies *Transportation Services in Delaware for Persons with Disabilities and Senior Citizens* and *Framing the Issues of Paratransit Services in Delaware*. This research project focused on evaluating the state of mobility management and specialized transportation services in Delaware. Three primary stages of work were undertaken.

Assessment of Current Initiatives and Mobility Management Practices in Delaware

Through interviews and meetings with key service providers throughout Delaware and participation at state-level forums and conferences, IPA evaluated some of the gaps and discontinuities in coordinating human-services and public transportation in the state. Specific information about these interviews and meetings is discussed in the section titled "Assessment of Current Mobility Management Efforts in Delaware."

This phase of work focused on gathering information and preparing an inventory of current initiatives underway to better coordinate specialized transportation services in Delaware. Included in the inventory is a list of all agencies and providers of specialized transportation services, and, as available, rider and trip characteristics, funding source(s), costs and/or cost per trip (as available), and other pertinent information on specialized transportation services in Delaware—public, private, or nonprofit organizations. The *Preliminary Inventory: Delaware Specialized Transportation Provider Matrix* includes services for seniors, persons with disabilities, low-income individuals, and veterans (Appendix I).

Evaluation of National and Delaware-Specific Mobility Management Efforts and Best Practices

This research task examined the planning and policy landscapes that are currently directing and advancing the national mobility management framework. The Enhanced Mobility of Seniors and Individuals with Disabilities Program (herein referred to as the Section 5310 program) was authorized in 1975 by the U.S. DOT's FTA to improve access to mobility for older adults and persons with disabilities (49 USC §5310). The federal Americans with Disabilities Act (ADA) was subsequently enacted as a civil rights law in 1990. Yet, even after these programs were implemented, obstacles persisted to coordinate specialized transportation among human-services and public transportation providers. To address this issue, an innovative approach for managing and delivering coordinated transportation services, called "United We Ride (UWR)," was initiated in the mid-2000s. Federal surface transportation legislation, beginning with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, imposed new planning and program requirements for coordinated transportation under the Section 5310 program. As a foundation for enhanced mobility and mobility management initiatives, it is important to assess the implications of subsequent federal surface transportation law mandates—including the 2015 adoption of the Fixing America's Surface Transportation (FAST) Act—and apply them to update Delaware's Statewide Action Plan and realign Delaware's Section 5310 program.

In conjunction with reviewing of DTC's Transit Redesign Initiative, various coordination models were researched and assessed as part of this evaluative task. Concurrent to interviewing and meeting with key service providers throughout Delaware, IPA staff also conducted a literature review to identify successful "best-practice" models of mobility management and specialized transportation coordination services in other states/regions/jurisdictions and assess whether these models could be applied in Delaware. Included in these best-practice models are emerging transit technologies and prospects for utilizing these technologies to expand and enhance mobility coordination and improve transit access for all riders.

Facilitation of Stakeholder Engagement and Outreach

To assess the overall "state of mobility management" in Delaware, information was obtained on various human-services transportation provision and provider organizations through survey research and outreach. This phase of work involved preparing and administering surveys of Section 5310 program transportation providers and general specialized transportation stakeholders in Delaware. Between January and May 2016, IPA worked with identified stakeholders and key transportation service providers throughout Delaware to conduct three county-based workshops. Survey outcomes provided the basis of workshop discussion and engagement. Research presented and information gathered during these workshops helped lay the groundwork for coordinating a statewide policy forum.

IPA, working with DelDOT and DTC staff as well and other identified specialized-transportation service providers, coordinated and facilitated a statewide mobility coordination forum in mid-October 2016. During this forum, initial research findings, literature review outcomes, and the interests of agencies and stakeholders in future coordination efforts were discussed. Information was also presented from the research and data collected on *Analyzing the Transportation Costs of Community Facility Locations* in Delaware, a concurrent 2016 research effort by IPA. Finally, input was obtained on recommendations and next steps to advance mobility management and coordination in Delaware.

Assessment of Current Mobility Management and Coordination Efforts in Delaware

Stakeholder Interviews and Outreach

Through teleconferences, in-person interviews, and other outreach efforts, IPA staff worked to better understand the primary roles, responsibilities, and interests of various entities that work with target populations and provide human-services and specialized transportation services to Delawareans. Interviews with these representatives offered perspectives and information on gaps in transportation services, transportation-disadvantaged groups, and new initiatives and partnerships underway in Delaware. IPA staff also attended and/or presented at several related events and committee meetings to ensure that stakeholders were aware of the efforts to assess current mobility management and coordination initiatives. The intent was to gather information on specialized transportation services and programs, identify critical stakeholder groups, and gain input on plans to convene stakeholder representatives at county-based workshops.

Discussions engaged representatives of DTC, including those from RideShare Delaware and the state's Section 5310 program, the Greater Lewes Community Village, Sussex County Advisory Committee on Aging and Adults with Physical Disabilities, UD's Center for Disabilities Studies, Brandywine Village Network, Delaware Department of Health and Social Services (DHSS), Delaware Telehealth Coalition, and LogistiCare. This effort ensured that a diverse group of stakeholders were invited to participate in discussions about current and future mobility coordination initiatives. A schedule of Outreach and Input Meetings, 2015–2016; PowerPoint presentations from the county-based workshops and statewide mobility coordination forum; and summary notes from teleconferences, meetings, events, workshops, the forum catalogues all engagement and outreach initiatives (Appendices A–H). Key themes derived from these outreach efforts include:

- There is insufficient information sharing among statewide transportation service providers and groups working with transportation-disadvantaged populations.
- Several innovative initiatives are successfully operating in Delaware and could be expanded in other areas of the state:
    - The "Village Model," an innovative consumer-driven approach that aims to promote aging in place.
    - ITN*SouthernDelaware*, a nonprofit volunteer transportation cooperative based in Sussex County that provides sustainable community-supported transportation services for seniors 55+ and adults with visual impairments.

  - Easter Seals and CHEER Partnership with DTC to coordinate transportation trips for clients in New Castle and Kent Counties during peak travel times.
  - Implementation of DHSS' Telehealth Strategic Action Plan and plans to advance partnerships to promote the use of telehealth and teledentistry in Delaware—including residents with developmental and physical disabilities who are located at the Stockley Center in Sussex County.
- While new or innovative initiatives are underway among the state's nonprofit and private sectors, little is known or easily available about the targeted clientele, service areas, and opportunities for coordination.
- There is a need for a one-stop shop information and resource portal that includes all transportation options in Delaware.
- Not all transportation-disadvantaged populations are represented at current DTC-related stakeholder meetings—currently, the Elderly and Disabled Transit Advisory Committee (EDTAC).
- There is a growing demand for non-emergency medical transportation (NEMT) among Medicaid clients and veterans in Delaware; veterans' organizations, DHSS, and LogistiCare—Delaware's transportation broker for Medicaid clients—should be more engaged in coordinating specialized transportation services and cost-containment strategies (e.g., trip limits) among providers.
- While aging in place is an increasingly important and relevant concept in Delaware, it also raises concerns about whether people living in rural or remote areas in Delaware can easily access services and/or be evacuated during a natural disaster or emergency.

Preliminary Inventory of Specialized Transportation Services in Delaware

Assessing the state of mobility management efforts in Delaware involved identifying the primary organizations either advocating for or providing human-services/specialized transportation services in Delaware to transportation-disadvantaged populations. This information helped to prepare a preliminary inventory of the current services and initiatives underway to coordinate specialized transportation services.

Advocacy Organizations and Social Service Stakeholder Groups

In Delaware, several state agencies, nonprofit organizations, and private entities either administer or provide specialized human/social service transportation or transportation-disadvantaged people who have challenges accessing transportation due to disability, age, health, lack of car ownership, income, or other reasons. Many of these stakeholder groups

maintain strong partnerships with other organizations within the aging, disabilities, health, and human/social services networks. The various advocacy organizations/provider agencies (listed in alphabetical order) that provide support services, resources, and/or addresses the unmet needs of special-needs populations in Delaware include:

- Advisory Committee on Aging and Adults with Physical Disabilities for Sussex County
- Advisory Council on Walkability and Pedestrian Awareness
- on Community-Based Alternatives for Individuals with Disabilities
- Delaware Aging Network
- Delaware Commission of Veterans Affairs (DCVA)
- Delaware Developmental Disabilities Council
- Delaware Veterans Coalition
- Easterseals Delaware
- Elderly and Disabled Transit Advisory Committee (EDTAC)
- Elwyn Delaware
- Freedom Center for Independent Living
- Governor's Advisory Council for Exceptional Citizens
- Governor's Advisory Council on Services for Aging and Adults with Physical Disabilities
- Governor's Commission on Building Access to Community-Based Services (Health Care Committee)
- Kent-Sussex Industries, Inc.
- State Council for Persons with Disabilities

Primary Providers of Specialized Transportation Services in Delaware

Due to the nature of Delaware's unique composition, size, and government structure, most of the primary transportation resources and services are provided at the state level. Currently, the majority of transportation-based funds are appropriated to two state agencies—the Delaware the Department of Health & Social Services (DHSS) and DTC, a subsidiary of DelDOT.

DHSS receives federal and state funding to provide transportation services to support programs for Delaware residents with a various disabilities or medical issues. DHSS is responsible for the oversight of NEMT and contracts exclusively with LogistiCare Solutions for the following divisions:

- Delaware Health Care Commission
- Division of Services for Aging and Adults with Physical Disabilities
- Division of Developmental Disabilities Services

- Division of Medicaid and Medical Assistance
- Division of Social Services
- Division for the Visually Impaired

Paid on a per-member, per-month basis, LogistiCare services the Medicaid population in Delaware and has a total of 60 transportation providers. According to the Delaware-Focused Program Integrity Review report, approximately 6,865 beneficiaries used NEMT in the first quarter of 2015 out of approximately 200,000 eligible Medicaid members (U.S. Centers for Medicare & Medicaid Services, 2016). In addition, several organizations in the state contract with DHSS to provide services to persons with disabilities who operate their own specialized-transportation systems (e.g., Kent-Sussex Industries, Inc. and Easterseals Delaware).

DART's transit fleet includes over 500 buses with 70 bus routes, a seasonal Resort Transit service, and extensive paratransit services. In FY 2016, DART ridership comprised 8.4 million rides on fixed-route transit, nearly one million (.98 M) rides on paratransit, and over one million rides (1.24 M) on commuter rail in New Castle County via a contract with the Southeastern Pennsylvania Transportation Authority (SEPTA). The State of Delaware provides annual operating subsidies to DTC, which accounts for almost 81 percent of DTC's total annual budget. In FY 2017, the amount of the subsidy targeted to DTC for transit operations was $86 million (DelDOT 2016).

In addition to transportation services supported or provided by DHSS and DTC, an array of nonprofit and private entities offer specialized transportation services to transportation-disadvantaged individuals. DTC is the *recipient* of federal Enhanced Mobility of Seniors & Individuals with Disabilities – Section 5310 program. Funds from this program are targeted to assist nonprofit groups provide specialized transportation services for older adults and persons with disabilities when transportation service provided is "unavailable, insufficient, or inappropriate to meeting these needs" (49 U.S.C. 5310). DTC administers Delaware's Section 5310 program and awards funding to subrecipient organizations (e.g., senior centers, faith-based organizations, and human/social service organizations) providing specialized transportation services. In FY 2015, a total of 266,852 rides were provided to patrons of 5310 subrecipient organizations. According to DTC estimates, among the 67 organizations providing specialized transportation services in FY 2015, the number of rides provided by 5310 subrecipient organizations ranged from a low of nine rides to a high of 52,009 rides.

Due to limited availability of fixed-route bus services in Kent and Sussex Counties, the state also provides annual operating subsidies to DTC. In turn, DTC administers and distributes funding through two "Elderly and Disabled" (E&D) transportation programs. In FY 2018, the Delaware

General Assembly appropriated $1.49 million to DTC for the "Kent and Sussex Transportation E&D." Within this appropriation, Delaware's FY 2018 Operating Budget Epilogue Section 259 (HB 275) mandates that at least $50,000 be allocated to both the Modern Maturity Center (Dover) and CHEER Activity Centers (Sussex County) for specialized transportation services (State of Delaware, 2017). The Kent and Sussex Transportation E&D provides a supplemental source of funding to Modern Maturity and CHEER. These senior centers also receive funding from other sources, including Delaware's Section 5310 program. In other cases, Kent and Sussex Transportation E&D may be the only significant source of revenue for organizations providing transportation services to older adults and persons with disabilities. In addition, the Delaware General Assembly provides an annual appropriation to DTC to subsidize taxi services in New Castle County for door-to-door transportation of the elderly and persons with disabilities. The annual appropriation for Taxi Services Support "E&D" in New Castle County was $148,500 in FY 2017, and funding remained at least at the same level in FY 2018 (State of Delaware, 2017).

The federal government has established a goal of improving and revitalizing public transportation in the United States, including improvements in "mobility for elderly individuals, persons with disabilities, and economically disadvantaged individuals in urban and rural areas…" (49 U.S.C. 5310(b)(7). The state's "E&D" appropriations via DTC enable Kent and Sussex County governments to distribute funds at their discretion to organizations serving older adults and persons with disabilities in in their jurisdictions. Yet, other organizations working to meet the needs of other transportation-disadvantaged populations have inherently been excluded from funding. Moreover, the "E&D" funding allocation process seems to be separate and distinct from the process used to allocate Delaware's Section 5310 program funds to subrecipient organizations and entities that also target specialized-transportation needs of older adults and persons with disabilities in Delaware.

Several categories of transportation programs and services are currently offered in Delaware to serve the needs of transportation-disadvantaged individuals. IPA prepared the *Preliminary Inventory: Delaware Specialized Transportation Provider Matrix* (Appendix I). It provides an overview of fixed-route, demand-responsive, NEMT, fee-based membership, non-fee based membership, brokered transportation, wellness-oriented, and ride-hailing and taxi services that are offered throughout the state by public transportation entities, private providers, nonprofit organizations, and Section 5310 funding subrecipients. The matrix is useful in developing survey participant lists, county-specific working group invitees, and statewide mobility coordination forum invitees.

Limitations to this work included gaps in contact information for all service providers, particularly among 5310 subrecipient organizations (e.g., email addresses) as well as service area locations (e.g., where services are provided and the overlap among providers). Also, rider and trip characteristics, funding sources, and costs and costs/per trip was restricted to organizations that maintain and are capable of sharing such information. Despite requests for information, the research team found it difficult to obtain comprehensive information on Section 5310 subrecipient organizations unless it was provided voluntarily.

TAKE-AWAY

Prepare Comprehensive Assessment/Inventory of Specialized Transportation Providers in Delaware

Many human-services and specialized-transportation providers/advocates are unaware of existing efforts, partnerships, and services being provided in Delaware. This represents a "missed opportunity" to coordinate and leverage resources to advance mobility management strategies. The Delaware Statewide Action Plan to Coordinate Human-Services Transportation (i.e., Statewide Action Plan) has not been updated since its 2007 publication. An updated plan is needed and should provide (1) an assessment of currently available specialized services provided by public, private, and nonprofit transportation providers and (2) strategies, activities, and/or projects to address the identified gaps between current services and special-needs transportation. While the Preliminary Inventory provides a first step to assess specialized transportation services in Delaware, recommendations include:

- Undertake a comprehensive assessment/inventory of specialized transportation services and gap analysis as part of a statewide action plan (i.e., coordinated plan) update.
- Use the comprehensive assessment/inventory and gap analysis as the basis for considering a one-call/one-click travel information portal/trip planning system and/or brokerage system that matches riders with available transportation providers.
- Require future candidates for Section 5310 program funding to submit comprehensive contact information, service-area information, client type, performance metrics, and other critical information as part of the application, renewal, and reporting processes.

Previous Studies and Plans

The need to coordinate human-services transportation in Delaware has been a topic of study over the past decade. Several reports and plans detail issues concerning human-services transportation coordination, the need advance mobility management, and issues related to rising costs and transportation-service inefficiencies. An annotated bibliography was prepared that lists studies—conducted during the past decade—that relate to the intersection of transportation equity, land use, and planning in Delaware (Appendix J). Key reports, listed in chronological order, include:

Delaware Statewide Action Plan to Coordinate Human-Services Transportation

This 2007 report summarizes outcomes of a UWR self-assessment process designed to help states build "fully coordinated transportation systems" that coordinate human-services transportation. Delaware's Statewide Action Plan sets forth goals to (1) provide greater mobility options for disabled, senior, and low-income Delawareans, (2) utilize transportation resources to maintain a good quality of life and independence for citizens in Delaware who are transportation disadvantaged, 3) utilize technology to increase and enhance coordination to better service the transportation disadvantaged, and 4) access to employment for low-income residents (DTC, 2007). DelDOT also produced related reports for Kent and Sussex Counties. Subsequent to the 2007 publication, the Statewide Action Plan has been incrementally updated with input from EDTAC. Yet, the document has not been comprehensively updated to reflect federal FAST Act legislation, needs of all transportation-disadvantaged populations in Delaware, recent Section 5310 policy and program changes, emerging transportation technologies, changing demographics, and new opportunities in shared-use mobility and on-demand services.

Framing the Issues of Paratransit Services in Delaware

Published by IPA in 2007, this extensive report listed over ten pages of short- and long-term recommendations. The purpose of this project is to frame the issues related to right-sizing paratransit services in Delaware. This report reinforces the importance of providing a fully accessible transit system and mobility options to provide each Delawarean with opportunities to obtain a good job, education and training, and needed medical and social services. An overview is provided of issues regarding paratransit service delivery and challenges related to the demand-responsive nature of paratransit services, both nationwide and in Delaware. Paratransit service is demand driven. Pressures to grow the system are impacted by several factors, including high customer expectations and changing demographics. Innovative approaches that are being successfully utilized by other transit providers to manage paratransit growth and escalating costs are explored. During the course of the project, it became apparent that there is a critical disconnect between transit and land-use planning. Geographic

Information System (GIS) technology was used to develop mapping prototypes that demonstrate the important connection between transit and land-use planning. Opportunities exist to utilize and share GIS data among state agencies to more accurately plan for future paratransit service demands. Short- and long-term strategy recommendations are made to frame the issues of paratransit service in relation to the larger family of transit and land-use planning needs. The study concludes that a coordinated, long-term planning strategy is needed to correctly size the paratransit system, shape the distribution of paratransit travel demand, and reconfigure the transportation network.

Improving Access to Taxi Service: Delaware's Missing Mode

DTC commissioned IPA to examine the taxicab industry in Delaware and explore ways the industry can become a partner in the delivery of paratransit services to Delawareans. This 2013 report investigates the possibility of DTC partnering with the taxicab industry to offset the rising costs of paratransit and increasing ridership burden. However, the research indicates that Delaware's taxicab industry does not operate in a manner that could effectively serve as an alternative form of public and paratransit transportation. To successfully integrate the taxicab industry into the public transit options available in Delaware, key regulatory issues require attention. Currently, the lack of industry standards creates inconsistencies in the level of service provided by the various taxicab operators in the state. Implementing a statewide fare structure, requiring the use of centralized dispatch by all providers, and accepting all forms of payment are essential first steps toward reforming the industry.

Transportation Services in Delaware for Persons with Disabilities and Senior Citizens

Conducted by IPA in 2013 on behalf of the Delaware General Assembly, this study assessed transportation services available in Delaware for seniors and persons with disabilities. The report affirmed a lack of coordination among specialized transportation providers—even LogistiCare and 5310 funding subrecipients heavily rely on DTC's paratransit services—and suggested the need to create an interagency council on specialized transportation.

Recommendations focused on improving the sustainability and efficiency of transportation for seniors and persons with disabilities including: (1) improving coordination among state agencies providing transportation services, (2) completing a strategic plan to address necessary changes to paratransit operations, (3) studying the impact the paratransit system has on the fixed-route system, (4) subsidizing a pilot project to enhance taxi and limousine services to relieve the burden on paratransit.

Wilmington Transit Moving Forward

The 2014 report was developed to advise and assist in setting a vision for the future of transit in Wilmington. It provides recommendations that are encompassed within a set of 19 principles, and implementation is prioritized into four timeframes. Recommendations of the study are applicable statewide, including the need to ensure ADA accessibility to walk-to-transit stations, link land-use and transit planning, use state-of-the-art technology to provide customer information, and emphasize transit service in selected corridors and provide supporting infrastructure.

2015 Accessibility and Mobility Report: A Transportation Justice Study of the WILMAPCO Region

WILMAPCO's study examines the opportunities and challenges faced by seniors (65+), persons with disabilities, and households without vehicles in navigating the transportation system in the New Castle County, Delaware, and Cecil County, Maryland planning area. Collectively, these client groups are referred to as "Transportation Justice" (TJ) populations. The study explores TJ mobility challenges and concludes that, because travel by automobile is the predominant mode of transportation in these areas, the three TJ groups would be better served through connected transit systems and safer, more accessible transportation alternatives. The study also presents opportunities and challenges related to comfortably "aging in place." Age-restricted housing (residential communities where all or the majority of residents are 55+) are often located in suburban areas with limited development, poor access to public transit, and pedestrian networks lacking connectivity. WILMAPCO's analysis reveals that only 12 percent of suburban, age-restricted communities in New Castle County provide pedestrian connections to surrounding destinations and bus routes. This makes future pedestrian connections unlikely, or a long-term prospect. It acknowledges difficulties faced by Delaware's Paratransit system, echoing the recommendations made in 2013 study by IPA. Finally, it recommends opportunities to better engage TJ groups in the public participation process.

The Plan to Achieve Health Equity for Delawareans with Disabilities

Published in 2015, the plan represents the consensus of a committee of designated DHSS staff and community partner representatives. It is presented as a comprehensive collection of specific activities that will guide public health and community leaders in transforming Delaware's system of care to meet the needs of individuals with disabilities. Objectives related to the intersection of health and transportation include:

- Objective 3.3 – To create accessible and inclusive environments to promote community living for people with disabilities by end of 2019.

- Review algorithm for timing signals at pedestrian crosswalks (DelDOT/ADA standards) and advocate for increased time to allow for pedestrians with disabilities.
- Identify and disseminate existing incentives for municipalities to make walkways more accessible.
- Advocate for a reliable, efficient, and affordable transportation system to impact access on healthcare by aligning with existing initiatives (WILMAPCO's Transportation Equity and Justice Plan, DART/paratransit).
- Compile listing of and assess private transportation services available in Delaware and make recommendations to address gaps in service.

The Delaware State Plan on Aging

Published in 2016, the Delaware State Plan on Aging was developed by DHSS' Division of Services for Aging and Adults with Physical Disabilities to meet the requirements to receive funding under Titles III and VII of the Older Americans Act (OAA). The act provides funding for a variety of programs and services for older Delawareans and their caregivers, including supportive services, nutrition programs, disease prevention and health promotion initiatives, elder rights protection activities, and caregiver support programs. The plan is effective October 2016–September 2020 and includes several primary goals and objectives related and significant to mobility coordination efforts in Delaware, including:

Goal 2: Carry out advocacy efforts to develop service structures that improve the lives of older persons and adults with disabilities

- Objective 2.1 – Promote the development of telehealth services statewide.
- Objective 2.2 – Carry out strategies that lead to greater emergency preparedness by and on behalf of older persons and persons with disabilities in Delaware.
- Objective 2.6 – Advocate for affordable, accessible transportation and mobility options, especially in areas with critical transportation needs.
    - Strategy 2.6.1 – Support DelDOT and other partners in planning initiatives that would broaden and improve the transportation options available to older persons and persons with disabilities, especially in rural areas of the state.
    - Strategy 2.6.2 – Collaborate with DelDOT to update and promote the safer senior drivers resources.
    - Strategy 2.6.3 – Build capacity in the state's home and community-based service infrastructure to respond to critical needs including transportation and promote as a viable transportation resource.

Overview of the Planning and Policy Landscape

The overview of the transportation planning and policy landscape underscores the urgency to develop a more contemporary and comprehensive state-level mobility management framework—one that better aligns with current and evolving federal mandates. It is clear that planning for coordinated public transit-human-services transportation has heightened the need to address barriers to mobility for all transportation-disadvantaged individuals—above and beyond older adults and individuals with disabilities. It is critical to regularly update a Coordinated Public Transit–Human-Services Transportation Plan (i.e., coordinated plan) to align with federal policies and conform to the same plan update cycle as a metropolitan planning organization's (MPO) transportation improvement program (TIP). As the foundation for enhanced mobility and funding mobility management funding allocation decisions under the Section 5310 program, a must be prepared locally with diverse stakeholder representation and address the needs of all transportation-disadvantaged populations. Moreover, public transit agencies are expected to lead efforts to coordinate specialized transportation services; advance mobility management protocols; and leverage resources, funding, and services under the Section 5310 program.

Federal Policy Framework

Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (ADA), Public Law 101-336, requires public transit agencies that provide fixed-route service to provide "complementary paratransit" service to people with disabilities who cannot use fixed-route bus service because of a disability. As federal civil rights law, ADA regulations specifically define a population of customers who are entitled to this service and minimum service characteristics that must be met to be considered equivalent to the fixed-route service.

ADA complementary paratransit service must be provided to origins and destinations within core transit corridors up to a width of three-fourths of a mile (on the sides and ends) of each fixed route. In addition, ADA requires that fares for complementary paratransit not exceed twice the fare that would be charged to individuals paying full fare (U.S. Code, 1990). The U.S. DOT's ADA regulations provide three categories of paratransit eligibility for:

1. Individuals with a disability (physical or mental impairment) who cannot board, ride, or disembark a fixed-route vehicle independently; or
2. Individuals with a disability who can board, ride, or disembark a fixed-route vehicle independently, but want to travel on a route and/or vehicle that is still not 100 percent accessible; or

3. Individuals who have a specific disability-related condition that prevents travel to/from a fixed-route bus stop in the system due to environmental barriers [US CFR 37.123(e)(1, 2, 3)].

ADA distinguishes between two types of paratransit service: (1) complementary paratransit service, which is required by public transit agencies to be in compliance with ADA and (2) non-ADA "demand-responsive" service, which is defined as "any non-fixed route system of transporting individuals that requires advanced scheduling by the customer, including services provided by public entities, nonprofits, and private providers" (49 CFR, § 604.3(g)).
ADA complementary paratransit service is an unfunded federal mandate. Under the ADA, "paratransit functions as a 'safety net' for people with disabilities who are unable to make use of the fixed-route—i.e., 'mainstream'—transit system" (FTA, 2016).

While ADA establishes the minimum requirements for complementary paratransit services, a transit operator may elect to provide any level of additional service—at its own cost—to address local community need. Service above and beyond ADA mandates includes providing paratransit service to individuals who do not meet the eligibility criteria, operating paratransit service beyond the fixed-route service area, providing service when the fixed-route system is not running, and/or by exceeding the basic next-day service requirement. To ease the burden on transit operators who elect to provide paratransit services that operate above the ADA mandate, FTA's Office of Civil Rights issued a guideline in 2002 and subsequent guidance in 2015 that allows "premium charges" for superior levels of paratransit service (FTA, 2015).

Establishment of Federal Transit Administration's Section 5310 Program

The U.S. Department of Transportation (U.S. DOT) Federal Transit Administration's (FTA) Enhanced Mobility of Seniors and Individuals with Disabilities – Section 5310 program was established in 1975 as a discretionary capital assistance program (49 USC, § 5310). A flexible, state-managed program, the Section 5310 program was intended to address gaps in specialized transportation services. It was designed to serve the specialized transportation needs of the elderly and persons with disabilities in cases where public transit was unavailable, insufficient, or inappropriate. FTA used a formula to distribute funds to state agencies (or recipients), which were allocated funds to eligible nonprofit organizations (i.e., subrecipients) involved in providing human-services transportation to their elderly and special-needs clients.

The passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) imposed new requirements on state recipients. It required states to actively encourage coordination among human-services transportation providers *and* required specialized transportation providers to participate in coordinated systems. Despite this mandate, a June 2003 report from

the Government Accountability Office (GAO) found obstacles to coordination efforts and a significant variation in the extent to which the programs coordinated their efforts (GAO, 2003).

In response, an Executive Order was signed by President George W. Bush on February 24, 2004, "to enhance access to transportation to improve mobility, employment opportunities, and access to community services for persons who are transportation-disadvantaged" (Office of the President, 2004). The Executive Order also established the interagency transportation Coordinating Council on Access and Mobility (CCAM) to:

- Promote interagency cooperation and the establishment of appropriate mechanisms to minimize duplication and overlap of federal programs and services to provide transportation-disadvantaged persons with access to more transportation services;
- Facilitate access to the most appropriate, cost-effective transportation services within existing resources;
- Encourage enhanced customer access to a variety of transportation and resources available;
- Formulate and implement administrative, policy, and procedural mechanisms that enhance transportation services at all levels; and
- Develop and implement a method for monitoring progress on achieving the goals of the Executive Order.

UWR and Coordinating Councils

In 2004, CCAM developed UWR, a federal interagency initiative aimed at improving the availability, quality, and efficient delivery of human-services transportation delivery systems for older adults, people with disabilities, and individuals with lower incomes. UWR advocated simplifying customer access to transportation, reducing the duplication of transportation services, streamlining federal rules and regulations that may impede the coordinated delivery of services, and improving the efficiency of services using existing resources.

State human-services transportation coordinating councils (i.e., coordinating councils) are recognized by the National Conference of State Legislatures (NCSL) as "a key strategy for improving mobility." A 2015 report by NCSL indicates that Delaware is *not* among the 20 U.S. states/territories that have an active state coordinating council. While it recognizes that state coordinating councils are not a one-size-fits-all solution, NCSL reports that they commonly coordinate among diverse transportation and human-services providers to synchronize special-needs transportation, provide a forum for discussing issues and initiating change, and provide oversight and direction to the state's coordination agenda (NCSL, 2015). Many state coordinating councils actively engage in developing plans and strategies to address gaps in specialized transportation services, funding, and programs.

Membership within active state coordinating councils is broad to represent diverse client bases, programs, and transportation providers. State coordinating council membership may include consumer advocates, Section 5310 funding subrecipients, state agencies (transportation, disability, health and social services, aging, and labor/employment), human-services and transportation providers (e.g., transit agencies, social service agencies, NEMT providers/brokers, private providers, ridesharing services, and nonprofit organizations), service providers (e.g., healthcare providers, social service centers, senior centers, nonprofits), employers, transportation-justice communities, and stakeholders.

Mobility Management Initiative

Mobility management, an innovative approach for managing and delivering coordinated transportation services, was advanced under UWRUWR. Mobility management is described as "an innovative approach for managing and delivering coordinated transportation services to customers, including older adults, people with disabilities, and individuals with lower incomes" (UWR, 2007). The initiative focused on enhancing traditional transit service by:

- Meeting individual customer needs through a wide range of transportation options and providers.
- Coordinating transportation services to achieve a more efficient transportation service delivery system.
- Providing a "family of transportation services" through a range of travel options, services, and modes to meet community needs and demographics.
- Utilizing mobility managers to service as policy coordinators, transportation service brokers, and customer travel navigators.
- Advancing the use of Intelligent Transportation Systems (ITS) to provide "one-click (via website visit)/one-call (via phone) transportation resource centers to provide trip planning information and/or make travel reservations for customers (UWR, 2007).

Transportation technology and innovation are rapidly changing and impacting mobility management practices. Moreover, public agencies and private enterprises realize that there are advantages to create partnerships to:

- Achieve economies of scale and reduce transportation costs.
- Compete for funding opportunities that result in seamless connections among modes of transportation.
- Provide multi-modal transportation options to more efficiently move people and address the needs of transportation-disadvantaged populations.

FTA encourages public transit agencies to assume a broader transportation-planning role by coordinating available specialized transportation services, conducting education and outreach, and informing the public of available public and private mobility options.

Origin of Coordinated Public Transit–Human-Services Transportation Plans

UWR's mission was strengthened through the 2005 passage of federal surface transportation legislation known as SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users). Part of this reauthorization established new requirements for grantees under the New Freedom Initiative (Section 5317), Job Access and Reverse Commute (JARC, Section 5316) and Elderly and Disabled Transportation (Section 5310) programs starting FY 2007. It clarified that the purpose of these funds was to serve the special transportation needs of transit-dependent populations—above and beyond traditional public transportation services and Americans with Disabilities Act (ADA) complementary paratransit services.

These new requirements included the creation of Coordinated Public Transit–Human-Services Transportation Plans (i.e., coordinated plans) at the state, regional, and local levels. The plans are meant to establish goals, criteria, and strategies for delivering efficient, coordinated services to elderly, underemployed, financially disadvantaged persons, and persons with disabilities.

FTA issued additional guidance on the coordinated planning process in August 2006. It stated that projects selected for program funding under SAFETEA-LU must be "derived from a locally developed, coordinated human-services transportation plan" and that the plan be "developed through a process that includes seniors, individuals with disabilities, representatives of public, private, and nonprofit transportation and human-services providers and other members of the public" utilizing transportation services."

Eligible Mobility Management Activities

Under SAFETEA-LU, a range of mobility management activities became eligible to receive funding. The law defined mobility management as "short-range planning and management activities and projects for coordination among public transportation and other transportation service providers carried out by a recipient and subrecipient through an agreement entered into with a person, including a government entity; but excluding operating public transportation services" (Dalton and Hosen, 2008, 10). Examples of eligible capital projects for mobility management activities included:

- Development of coordinated plans.
- Maintenance and operation of transportation brokerages to coordinate providers, funding agencies, and customers.

- Development and maintenance of other transportation bodies and their activities, including Transportation Management Organizations (TMOs) and neighborhood travel coordination.
- Development and support of transportation coordination information centers, including one-stop call centers and management of eligibility requirements and arrangements for customers among supporting programs.
- Acquisition and operation of intelligent transportation system (ITS) technologies to implement one-click/one-call travel information portal/trip planning systems and operate coordinated transportation systems (Dalton and Hosen, 2008).

Veterans Transportation and Community Living Initiative

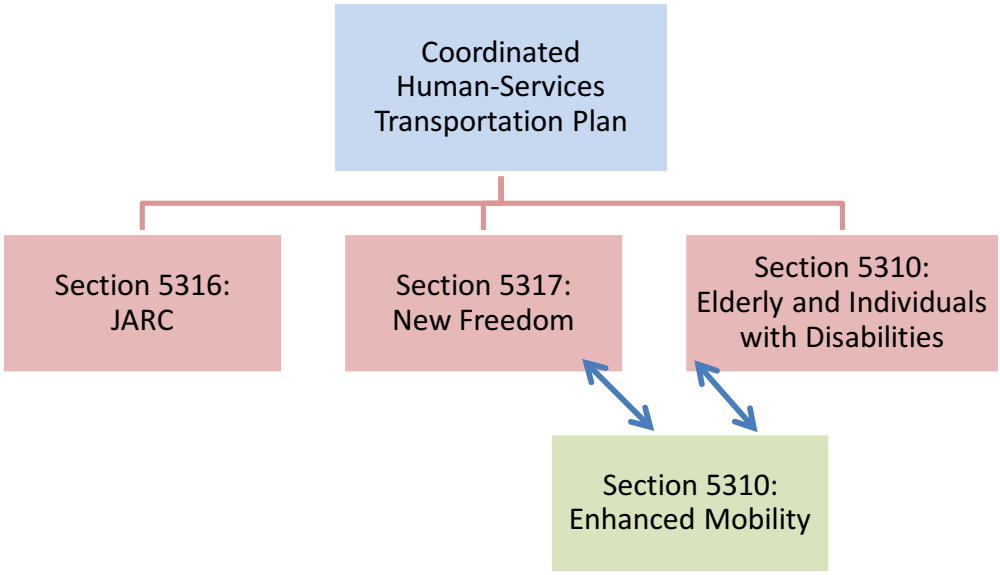
In July 2011, FTA made competitive funding available under the Section 5309 Bus and Bus Facilities program to finance a Veterans Transportation and Community Living Initiative (VTCLI). Operating under the auspices of CCAM, the initiative was launched in partnership with FTA and the Departments of Defense, Health and Human Services, Labor, and Veterans Affairs and targeted veterans, active service members, military families as underserved populations in need of transportation access. It was designed to provide affordable transportation options to veterans, active service members, and military families needing to travel to healthcare, employment centers, and vital community services. A discretionary (competitive) grant, the VTCLI grant provided capital expenses for technology investments to build one-click/one-call travel information portal/trip planning systems to disseminate information on travel options and schedule rides for veterans. It was available to entities eligible to receive FTA Section 5301 funding, including public agencies, transit authorities, local governments, MPOs, state governments, or Native American tribes.

A total of 119 VTCLI grants were issued, totaling $64 million in awards, in 2011 and 2012. Collectively, a total of 55 recipients received $29 million in grants in 2011, while 64 recipients collectively received $35 million in grants in 2012. According to a recent report on linking specialized transit users and riders (Rodman, Berez, and Moser, 2016), the VTCLI grants are credited with advancing the design and implementation of nationwide one-click/one-call travel information portal/trip planning systems that meets the transportation needs of all customers, including those who rely on specialized transportation services.

MAP-21

President Barack Obama reauthorized the federal surface transportation law—Moving Ahead for Progress in the 21st Century (MAP-21), which became effective on October 1, 2012. This legislation continued the coordinated transportation planning requirements for the Section 5310 program administered by FTA. Under MAP-21, Sections 5316 (JARC) and 5317 (New Freedom) were deemed redundant and subsequently repealed and eliminated as standalone funding sources. Activities eligible under 5316 were moved to the Urbanized Area Formula program (Section 5307) or the Rural Area Formula program (Section 5311). Activities funded by Section 5317 were folded into Section 5310 and placed an emphasis on "Enhanced Mobility" for all transportation-disadvantaged individuals.

Figure 1. Changes to the JARC, New Freedom, and Section 5310 programs under MAP-21



Coordinated Plan Requirements

MAP-21 stressed the need for the coordinated plan to serve as a framework (1) to improve coordination among transportation service providers and human-services agencies and (2) enhance mobility and services for transportation-disadvantaged populations. This provision also continued the federal mandate to prepare locally developed coordinated plans achieved through a participatory planning process with broad stakeholder representation. Moreover, MAP-21 emphasized the need to address barriers to mobility for all transportation-disadvantaged individuals—above and beyond seniors and individuals with disabilities—to include low-income populations, veterans, no-car households, non-drivers, and persons in need of non-emergency medical transportation (NEMT). FTA provided specific guidelines and four key requirements of a coordinated plan (FTA C 9070.1G, 2014):

1. An assessment of available services that identifies current transportation providers (public, private, and nonprofit);
2. An assessment of transportation needs for individuals with disabilities, older adults, and people with low incomes. This assessment can be based on the experiences and perceptions of the planning partners or on more sophisticated data collection efforts, and gaps in service;
3. Strategies, activities, and/or projects to address the identified gaps between current services and needs, and opportunities to achieve efficiencies in service delivery; and
4. Priorities for implementation based on resources (from multiple program sources), time, and feasibility for implementing specific strategies and/or activities identified.

Planning Mandates

The importance of the coordinated plan, as the foundation for enhanced mobility and mobility management projects, was heightened under MAP-21. The coordinated plan planning process is intended to serve as a tool for planning and implementing mobility management services and programs. FTA imposed the requirement that the coordinated plan follow the same plan update cycle as transportation improvement programs (TIPs) prepared by metropolitan planning organizations (MPOs). A MPO's TIP may be described as the first four years of a region's long-range transportation plan that lists all regionally significant and federally funded transportation projects and services in the planning area. MAP-21 required states to incorporate TIPs into a four-year statewide transportation improvement program (STIP). As such, most states/regions have either (1) synced the coordinated plan update schedule to match the TIP update cycle or (2) integrated the planning processes to simultaneously update both the coordinated plan and TIP.

Eligible Activities – MAP-21

Under MAP-21, two categories of eligible activities were defined:

1. **Traditional Section 5310 Projects** – These are defined as public transportation capital projects that are planned, designed, and carried out to meet specific needs of seniors and individuals with disabilities when "public transportation is insufficient, unavailable, or inappropriate" (FTA C 9070.1G, 2014). It required that not less than 55 percent of funds apportioned to a state (or designated recipient) be available for Traditional Section 5310 projects.
2. **Non-Traditional 5310 Projects** – These projects are also referred to as "New Freedom-" type projects. In addition to required use of Traditional Section 5310 funds for capital projects, up to 45 percent of funds could be allocated toward "additional public transportation projects" that:
    - Exceed ADA minimum requirements;

- Improve access to fixed-route service and decrease reliance by individuals with disabilities on ADA complementary paratransit service; or
- Provide alternatives to public transportation to seniors, individuals with disabilities, and other transportation-disadvantaged populations (FTA C 9070.1G, 2014).

FAST Act

The FAST Act (Fixing America's Surface Transportation), which became law on December 4, 2015, replaces MAP-21 and generally extends the Section 5310 program. Again, not less than 55 percent of funds must be allocated toward Traditional Section 5310 projects, up to 45 percent may be allocated toward Non-Traditional Section 5310 projects, and up to 10 percent allocated toward project administration.

The FAST Act also maintains the requirement to establish Section 5310 funding priorities based on a locally developed coordinated plan. A direct recipient (e.g., a state DOT) has the flexibility as to how subrecipient projects are selected for funding, but the decision-making process must be clearly stated in a state program management plan. In addition, the direct recipient has the discretion to select subrecipient projects based on a formula or a competitive or discretionary process. Moreover, states or local governments that operate a public transportation service and that are eligible to receive direct grants under 5311 (Rural Transportation Assistance Program) or 5307 (Urbanized Areas Formula Grants) are now eligible as direct funding recipients. Section 5310 recipients are responsible for:

- Developing project selection criteria consistent with the coordinated planning process.
- Notifying eligible local entities of funding availability.
- Soliciting applications from potential subrecipients.
- Allocating funds to subrecipients on a fair and equitable basis.
- Submitting an annual program of projects (POP) and grant application to FTA.

Section 5310 recipients are responsible for administering a project selection process, determining the eligibility of applicants, and conducting an initial review of applications. In addition, most Section 5310 recipients also form evaluation committees comprised of stakeholders. Once a first-level competitive selection process is conducted, a committee may review, score, and select applicants based on criteria that reflect priorities established in the coordinated planning process.

Eligible Activities – FAST Act

Under the FAST Act, the coordinated plan continues to be emphasized as the foundation for enhanced mobility and mobility management projects. Public-transit operators and/or private companies providing shared-ride transportation are now eligible to apply for non-traditional program grants. Non-traditional projects focus on enhancing mobility management activities to promote, coordinate, and facilitate transportation-service access for individuals with disabilities, seniors, low-income individuals, and other transportation-disadvantaged persons. Many Section 5310 recipients are refocusing their programs to include a stronger emphasis on coordination of transportation activities both at the regional and state levels. In many states, regional mobility managers are designated for each MPO or council/association of government. Regional mobility managers are responsible for building partnerships and consensus regarding best use of available resources to improve mobility and access for persons requiring specialized transportation. In addition, mobility managers may be designated to assist with pre-screening Section 5310 grant applicants to determine application eligibility, whether a proposed project has been identified within an updated coordinated plan, and whether a proposed project is recommended for funding on the project prioritization list.

Figure 2. FAST Act Section 5310 Program Administration (Up to 10% of Allocation)

Traditional Section 5310 (Capital) Projects At Least 55% of Allocation	Non-Traditional Section 5310 Projects Up to 45% of Allocation
• Open to private nonprofit organizations and/or state or local governments • Vehicle procurement (buses, vans, accessible taxis) • Approved vehicle overhaul • Support facilities and capital equipment (e.g., computer hardware/software, transit-related IT, dispatch systems, fare-collection systems) • Support for mobility management and coordinated programs (public transportation and human-services transportation) • Cost of leased or contracted transportation services • Lease or purchase of equipment and/or passenger facilities (e.g., lifts, ramps, securement devices, benches, shelters)	• Open to private nonprofit organizations, state or local governments, public-transit operators, and/or private companies providing shared-ride transportation • Enhanced travel training • Volunteer driver and aide programs • Enhancements to pedestrian infrastructure (e.g., sidewalks and curb cuts), pedestrian signals, and/or way-finding IT • Mobility management programs • Bus stop and pedestrian accessibility improvements • One-call/one-click call travel information portal/trip planning systems: Operation of coordinating transportation brokerages, coordination of ridesharing and vanpooling programs

Shared Mobility and Public Transit

Advancements in mobile (i.e., "smart") devices, web applications, and related public transportation technology innovations are driving the growth of shared-mobility concepts and on-demand solutions like ridesharing[3] and innovative demand-response bus services. To advance the concept of shared mobility, FTA sponsors research and grant-funded demonstration/pilot programs to:

- "Improve transportation efficiency by promoting agile, responsive, accessible, and seamless multimodal service inclusive of transit through enabling technologies and innovative partnerships.
- Increase transportation effectiveness by ensuring that transit is fully integrated and a vital element of a regional transport network that provides consistent, reliable and accessible service to every traveler.
- Enhance the customer experience by providing each individual equitable, accessible, traveler-centric service leveraging public transportation's long-standing capability and traditional role in this respect" (Office of the Federal Register, 2016).

FTA encourages transit agencies to embrace partnerships with transportation network companies (TNCs)[4], shared-, and on-demand services that use technological innovation to expand and improve the provision of transit services. A recent report from the American Public Transportation Association, *Shared Mobility and the Transformation of Public Transit*, discusses the beneficial linkage between TNCs and public transit (APTA, 2016). Research shows that the more people use shared modes, the more likely they are to use public transit, own fewer cars, and spend less on transportation costs. TNC services are being explored as a means to complement and work together with public transit, especially for first- and last-mile connectivity. Moreover, public-transit operators and private TNCs are collaborating to improve paratransit options using emerging strategies and technology.

Section 3006(b) of the FAST Act provides new discretionary (competitive) pilot programs to assist in financing innovative projects to improve coordinated access and mobility. This discretionary funding is open to Section 5310 recipients to assist in financing innovative pilot and demonstration projects for transportation-disadvantaged populations. Section 3006(b) grants focus on improving personal mobility using emerging technologies, applications, practices, and service models in concert with existing public transportation systems and resources.

[3] The term "**ridesharing**" describes peer-to-peer car services such as ride-sharing, carpooling, and car-sharing that is arranged through a transportation network company.

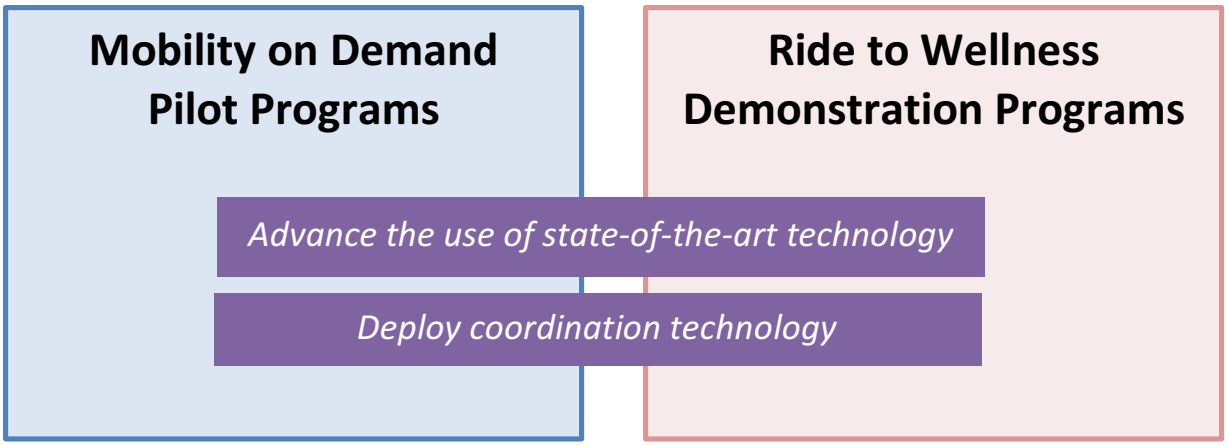
[4] A **transportation network company** (TNC) provides on-demand transportation services (via a mobile app or website) to connect paying passengers with drivers who provide the transportation on their own non-commercial vehicles. Examples of TNCs are Uber and Lyft (ACT, 2014).

Two competitive Section 3006(b) grants are available. FTA's **Rides to Wellness** (R2W) Demonstration Program seeks to address challenges for the transportation-disadvantaged to improve (1) the coordination of transportation services and (2) access to NEMT services. The R2W pilot program focuses on:

- Developing replicable, innovative, sustainable solutions to healthcare access challenges;
- Fostering local partnerships among health, transportation, home and community-based services, and other sectors to collaboratively develop and support solutions that increase healthcare access; and
- Demonstrating the impacts of transportation solutions on improved access to healthcare and health outcomes and reduced costs to the healthcare and transportation sectors (Office of the Federal Register, 2016).

Mobility on Demand describes a concept where travelers are able to use on-demand information, real-time data, and predictive analysis to optimize transportation choices that best meet their specific needs and circumstances. FTA's **Mobility on Demand (MOD)** Sandbox Demonstration Project provides competitive funding for innovative, partnership-drive projects that use innovative technology, integrate transit and with MOD solutions, and promote equitable mobility service for all travelers (Office of the Federal Register, 2016).

Figure 3. FAST Act Section 3006(b) Discretionary Pilot Program Funds Competitive Funding for Innovative Coordinated Access and Mobility



Advance use of state-of-the-art technology

Section 5310 Program Competitive Selection Framework

IPA conducted a preliminary analysis of select state departments of transportation (DOTs), MPOs, and councils/associations of government that have developed Section 5310 program competitive selection frameworks. The following information provides a synopsis of selection criteria that reflect changes to the Section 5310 program following the passage of MAP-21 (in

2012) and/or FAST Act (in 2015). More in-depth research is needed to assess "best-practice" Section 5310 program competitive selection frameworks that consider applicant scoring and evaluation criteria, and other aspects that reflect current federal requirements.

1. Responsiveness to Coordinated Plan Gaps and Strategies

To align with federal requirements, Section 5310 projects must continue to be identified and included in a "locally developed" coordinated plan and coordinate with other federally assisted programs. A selection process may evaluate a project based on the extent to which it addresses transportation gaps, responds to strategies described in a coordinated plan, and/or delivers benefits to target populations.

In addition, Section 5310 grant applicants may be evaluated or receive points based on the extent to which their organization actively participates in ongoing activities to coordinate specialized transportation services. The organization's participation in the process to prepare or update coordinated plan, attendance at Section 5310 grant workshops, level of involvement in coordinating services/resources with other agencies, and evidence of executive-level support for transportation coordination may be scored as part of the evaluation process.

2. Evidence of Financial Capacity and Management

Financial capacity is an important criterion for qualifying for a grant under the Section 5310 program. Many 5310 recipients require subrecipients, as part of the grant application and evaluation process, to verify their financial capacity to carry out the proposed project. Section 5310 program applicants may be required to:

- ✓ **Provide a Local Match** – Local matches may vary by program and funding type. FTA allows local matches to come from other federal programs that support transportation. When funds are leveraged in this way, programs can be one hundred percent (100%) federally funded program (FTA, 2016).
- ✓ **Track Eligible Expenses** – Accounting procedures should be in place to track and verify eligible expenditures through an annual audit.
- ✓ **Conduct Financial Reporting** – Adequate financial procedures, recordkeeping, and reporting systems must account for program expenditures
- ✓ **Provide Performance Measures** – Project progress reports and close-out reports should show performance outcomes and metrics.
- ✓ **Demonstrate Experience Managing Transportation Services for Transportation-Disadvantaged Populations**

3. Coordination of Transportation Resources and/or Services

Coordinated transportation occurs when agencies, jurisdictions, and nonprofit organizations work together to eliminate duplications to improve the quality of service and maximize transportation services for transportation-disadvantaged individuals. Section 5310 grant applicants may be evaluated, or awarded points, based on the extent to which their organization or agency:

- ✓ Establishes partnerships with other agencies or organizations to coordinate transportation services.
- ✓ Shares information with other agencies or transportation service providers.
- ✓ Shares resources such as vehicles, facilities, technology, or training.
- ✓ Reduces duplication of services.
- ✓ Reduces reliance on paratransit services.
- ✓ Shares, coordinates, consolidates, or leverages transportation services with other agencies or specialized transportation providers.
- ✓ Improves communication among agencies and providers through new technologies and coordinated services to improve frequency, travel time, and availability of specialized services.

4. Mobility Management

A Section 5310 grant applicant may be evaluated or scored based on the extent to which the organization or agency conducts activities or services that improve coordination among public transportation and other transportation service providers. Some examples of mobility management activities include:

- ✓ Developing and operating transportation brokerages (e.g., one-click/one-call travel information portal/trip planning system) to coordinate transportation information/trip scheduling across all modes.
- ✓ Providing travel training and trip planning activities.
- ✓ Planning, implementing, and utilizing state-of-the-art technology to coordinate transportation services to address service gaps, tackle unmet needs, lessen service duplication, and improve service-delivery inefficiencies.
- ✓ Using on-demand information, real-time data, scheduling, and routing to provide a more customer-oriented and responsive transportation system.
- ✓ Leveraging new technology to address transportation coordination challenges by maximizing vehicle utilization, dynamically scheduling and transporting to/from healthcare visits, and improving transportation reliability.

State of Delaware Policy Framework

Complementary Paratransit Services Exceed ADA Mandates

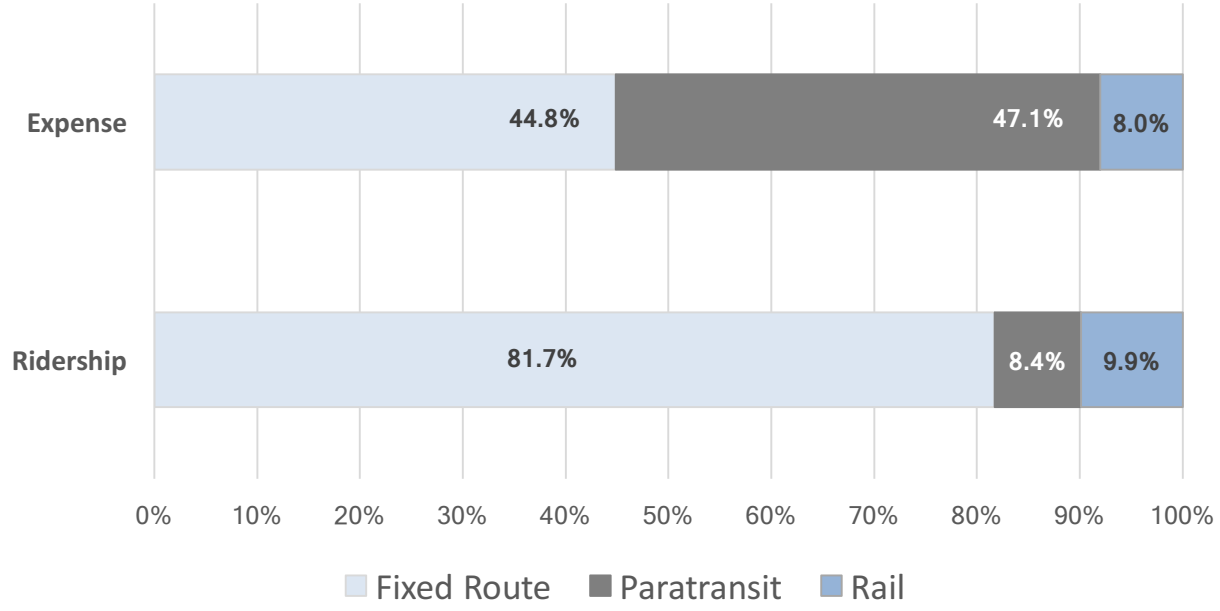
In the mid-1990s, the State of Delaware made a policy decision to treat complementary paratransit both as a transportation and social service. Consequently, DART provides complementary, door-to-door paratransit services that significantly exceed ADA mandates. DART transports eligible patrons from origins to destinations outside the ADA service area of three-fourths of a mile from fixed-route transit corridors. In addition, DART paratransit vehicles also transport renal care patients for dialysis treatments and transport persons aged 60 years or older who do not have disabilities (on a space-available basis in Kent and Sussex Counties). As is the case with ADA-eligible customers, these services are provided from origins to destinations beyond the ADA three-fourths of a mile service area.

To improve fixed-route transit accessibility, DTC has made substantial investment to ensure that all DART fixed-route buses are lift-equipped for use by individuals using mobility devices or those unable to use steps. In addition, DART's kneeling buses lower to the ground, which provides a curb-level, no-step entry for individuals with mobility difficulties. DART also offers travel training to assist persons with disabilities to use the fixed-route bus service to enhance their independence.

Despite these investments, growing demand for paratransit services in Delaware has led to escalating paratransit costs. Two studies conducted by IPA attribute the increases in demand for ADA paratransit services to a combination of factors, including DTC's paratransit eligibility standards that exceed ADA mandates; growth in Delaware's older population; influx of retirees to resort areas and/or low-cost, rural areas that are not served by fixed-route transit; "leapfrogging" of development patterns in undeveloped, rural areas; and draw of transportation-disadvantaged populations to live in low-cost, rural communities. Both studies conclude that the current model of transporting paratransit customers, regardless of location and costs, is unsustainable and inefficient (Institute for Public Administration, University of Delaware, 2013; Scott & Tuttle, 2007). They affirm the need for alternative transportation options, affordable transportation choices, and ultimately the reduction of the unrestricted use of specialized door-to-door paratransit system in Delaware.

According to former Secretary of Transportation Shailen Bhatt, the cost of Delaware's paratransit program increased 233 percent, from $15 million in 2000 to $50 million in 2013 (Metro, 2013). According to DTC "almost fifty percent of its operating budget [is expended] to provide statewide paratransit. In FY 2014, paratransit ridership accounted for 8.4% of total ridership, but consumed 47.1% of DTC's budget"(DTC, 2015).

Figure 4. Delaware Transit Corporation Ridership vs. Expense – FY 2014



Source: (Delaware Transit Corporation, 2015)

In addition, a recent Delaware-specific study affirmed that costs per trip for NEMT were greater for rural users than urban users. While the study focused on LogistiCare-brokered services in Delaware for NEMT services, it concluded that "adults in rural areas have unique transportation barriers to accessing medical care, which include a lack of mass transit options and considerable distances to health-related services" (Smith et al., 2017 p. 2).

Seven Delaware councils, commissions, and committees are working to address challenges faced by transportation-justice populations. Many of the stated missions, goals, and objectives of these groups echo the need to improve mobility, multi-modal connections, and transportation choice. Studies by the Wilmington Area Planning Council (WILMAPCO), the Delaware Health and Social Services Division of Services for Aging and Adults with Physical Disabilities, and UD's Center for Disabilities Studies recommend using state-of-the-art technology, instituting plans to broaden transportation options—especially in rural areas, better coordinating specialized transportation services, and addressing transportation service gaps.

Delaware Statewide Action Plan to Coordinate Human-Services Transportation

In January 2005, DTC received funding for a UWRUWR grant from the U.S. DOT, FTA, and partners at the Departments of Health and Human Services, Labor, and

Education. The grant enabled the State of Delaware to conduct a statewide assessment of existing specialized transportation services, needs or "gaps" in service, and strategies to address these gaps in service provision for target populations. As a result of this effort, "Coordinated Transit/Transportation Plans" were prepared and published in 2007 for New Castle, Kent, and Sussex Counties, which continue to be available on DART website at http://www.dartfirststate.com/information/programs/transportation_plans/. In September 2007, DTC published the *Delaware Statewide Action Plan to Coordinate Human-Services Transportation,* which set forth four state action plan goals (DTC, 2007):

1. Provide greater mobility options for disabled, senior, and low-income Delawareans;
2. Utilize transportation resources to maintain a good quality of life and independence for citizens in Delaware who are transportation disadvantaged;
3. Utilize technology to increase and enhance coordination to better service the transportation disadvantaged; and
4. Access to employment for low-income residents.

The coordinated plan should be updated to (1) provide a framework for improving coordination among transportation service providers and human-services agencies to enhance transportation services for all transportation-disadvantaged populations, (2) meet federal requirements for a "locally developed, coordinated human-services transportation plan," and (3) guide DTC's grant process, eligibility requirements, and the administration of its Section 5310 program. Because the program no longer focuses strictly on transportation needs of seniors and individuals with disabilities, the planning process and resulting plan should reflect needs of all transportation-disadvantaged individuals in Delaware. Based on high-priority projects/programs identified in a coordinated plan, Section 5310 funding can now be directed to assist with costs for innovative mobility management activities, the purchase of capital equipment, and operations to meet the mobility needs of all transportation-disadvantaged populations. An updated plan also will better position DTC to compete for Section 3006(b) discretionary funding for Mobility on Demand, Rides to Wellness, and coordination technology pilot programs.

TAKE-AWAY _____

Update Delaware's Coordinated Plan

While DTC, with input from the Elderly and Disabled Transit Advisory Committee (EDTAC), has incrementally revised Delaware's 2007 "Statewide Action Plan," it has not been comprehensively updated in the past decade. It is critically important to maintain a current coordinated plan because it provides the foundation to allocate and better leverage federal funding under FTA's Section 5310 Coordinated Mobility program. To achieve plan updates, it is recommended that DTC:

- Review current federal FAST Act requirements and reporting standards that guide the development of coordinated public transit–human-services transportation plans.
- Review and assess the current 2007 Statewide Action Plan to determine if Delaware-specific practices, policies, processes and plan components meet new federal requirements.
- Assess whether the process for developing an updated coordinated plan should be conducted independently, or as part of an MPO TIP planning process.
- Determine options to form committees (either by county and/or statewide) that meet federal law representation requirements to update the plan.
- Consider recommendations developed through the participatory planning process county/statewide committees and obtain input through additional stakeholder outreach and engagement.
- Draft an updated plan that is developed and approved through a participatory planning process that meets federal guidelines/requirements to (1) identify the transportation needs/gaps of transportation-disadvantaged populations, (2) provide strategies for meeting those needs, and (3) strategically allocate resources to "high-priority" transportation services, projects, and programs under the Section 5310 program.

Delaware's Section 5310 Program

DTC administers the federal Section 5310 program in Delaware. DTC's primary responsibilities include advertising the application period, reviewing applications, selecting eligible organizations for funding, and administering the program. In addition, DTC is responsible for the procurement of vehicles and monitoring the use of awarded equipment as well as the overall operation of the program.

DTC recently revised its *FTA Section 5310 Program Applicant Information Guide* for 2017. The revised guide better describes categories of eligibility, funding distribution and priorities, and emphasis on the need to prioritize funds to "agencies indicating a willingness to participate in a coordinated transportation program" (DTC, 2016). It further describes the FY 2017 award evaluation criteria for applicants as follows (DTC, 2016 p. 10):

1. Transportation needs of the clientele to be served as stated in the organization's application;
2. Organization's use of existing transportation providers;
3. Coordination efforts with other nonprofit and public transportation service providers;
4. Proposed utilization of requested vehicle(s) as well as past utilization of previously funded equipment, if appropriate;
5. Fiscal and management capabilities;
6. If the applicant is a current program participant, whether or not that applicant is in
7. full compliance with program objectives. Any applicant currently participating in the
8. program, and who is not in full compliance, will not be funded until full compliance is achieved;
9. Contributed capital for the purchase of the vehicle(s) or equipment.

Yet, the focus of Delaware's 5310 program continues to provide capital assistance to public agencies and private nonprofit organizations for vehicles and specialized equipment to meet the needs of transportation-dependent individuals. Delaware's Section 5310 does not fully align with changes to FTA's Section 5310 program that advance a mobility management framework.

The FAST Act requires at least 55% of the Section 5310 program to be spent on capital public transportation or "Traditional" projects that are planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The other 45 percent may be used for "Non-Traditional" type projects. Non-Traditional projects reflect "high-priority" transportation services, projects, and program strategies derived from a coordinated plan. These include capital and operating projects that (1) exceed the requirements of ADA, (2) improve access to

fixed-route service and decrease reliance on complementary paratransit, and/or (3) expand specialized and affordable public transportation options, improve mobility infrastructure, and/or provide innovative technology (e.g., travel information portal/trip planning system). Under the FAST Act, both states and local government entities operating public-transit services may be direct recipients of Section 5310 assistance. This could be used to support innovative pilot programs in partnership with Section 5310 funding subrecipients.

TAKE-AWAY

Align Section 5310 Program with Federal Requirements

To better align its Section 5310 program with federal requirements, Delaware needs to update its coordinated plan (statewide action plan) to identify high-priority projects/programs that advance a mobility management framework. To better align its Section 5310 program funding criteria to meet new federal mandates for allocating funding and conducting coordination activities, it is recommended that DTC:

- Assess the need to revamp the Section 5310 program application process and eligibility criteria to enable DTC to better allocate and leverage resources.
- Develop a Section 5310 program funding allocation process that aligns with the need to select "high-priority" projects, services, and programs that are derived from a coordinated plan.
- Revise the Section 5310 program grant management process and applicant eligibility requirements based on new federal funding guidelines.
- Conduct an inventory of "best-practice" Section 5310 program administrators (e.g., DOTs, MPOs, regional associations/councils of governments) that have realigned programs to conform to new federal mandates.
- Consider the need to introduce requirements for Section 5310 applicants to:
    - Actively contribute to mobility management efforts, engage in coordination activities, and participate/attend coordinated plan committee meetings.
    - Demonstrate project management (e.g., financial management, asset management, safety and training, and performance reporting).

DART First State Transit Redesign

DTC recently instituted several successful programs that address the growing demand for specialized transportation services and escalating costs of providing unrestricted paratransit services statewide. In addition to relieving some of the burden placed on the state's paratransit service, this program is intended to offer the advantages of a fixed route with the added convenience of curbside service.

In January 2015, DTC, in coordination with transit riders, transportation equity advocates, state agencies, legislators, and other transportation stakeholders, initiated a transit redesign implementation plan. The objective of this plan was to advance transportation options in Delaware for all riders, including the transportation disadvantaged. Consistent with FTA initiatives—including the Mobility on Demand (MOD) principles—the plan aims to support a more integrated and connected multi-modal system. DART's Transit Redesign Plan resulted in (DTC, 2015):

- **Fixed-Route Expansions** – Service expansions and changes became effective February 2014 in New Castle County, Kent County, and an intercounty route.
- **Flex Bus Services** – Following extensive public education and outreach, a successful launch of a pilot Flex program was initiated in Sussex County on November 10, 2014, to better accommodate riders who live near designated "flag zones," which are located along several of the county's busiest routes. In addition to relieving some of the burden placed on the state's paratransit service, this program is intended to offer the advantages of a fixed route with the added convenience of curbside service. Three new Flex bus routes were introduced and began operating weekdays from 6 a.m. to 7 p.m. The Flex routes provide regular bus service to designated bus stops, but also have the flexibility to accommodate off-route, curbside pick-up and drop-off locations up to one mile of the regular route by reservation. While a GoLink Flex service was subsequently extended into Kent County, it may be discontinued in 2017 due to no/low usage.
- **Improved Service Delivery** – Effective September 2014, paratransit service model changes resulted in a restructured reservation process, enhanced on-time performance, an improved eligibility and recertification process, expanded travel training to encourage fixed-route ridership, and modifications to the "no-show" paratransit policy.
- **Distinction between ADA Mandated and Premium Paratransit Services –** Effective July 1, 2014, DTC began to delineate between ADA and non-ADA (demand response) paratransit services. While paratransit services continue to be offered beyond three-quarters of a mile of a local fixed-route service, higher fares were instituted for premium, non-ADA paratransit service.

- **Fixed-Route/Paratransit Fare Increases** – Fare increases for fixed-route, ADA paratransit, and non-ADA (demand response) paratransit services were phased in over a three-year period between 2014 and 2016.

Other Community-Based Services and Alternative Mobility Options in Delaware

To provide more options to transportation-disadvantaged populations and advance a mobility management framework in Delaware, innovative and alternative forms of public or subsidized transportation are being explored and implemented. For example, as discussed in IPA's *Improving Access to Taxi Service: Delaware's Missing Mode* report*,* many jurisdictions across the United States have engaged the services of private carriers, such as taxicabs, to meet identified public transportation needs. By partnering with independent taxicab companies, the state can offload a portion of the growing demand and cost burden currently facing its public-transit operations. However, regulatory reforms and the expansion of the current subsidy program are needed to provide an important starting point to end taxicabs' status as Delaware's missing transit mode.

RideShare Delaware is DART's program designed to aid commuters with finding and using alternative modes of transportation, such as carpooling or vanpooling. The possibility of expanding this program to areas with large clusters of older adults is being explored. More recently, private ridesharing companies, such as Uber and Lyft, are identifying new opportunities to market and provide seamless transportation services to special-needs populations. In late 2016, Nemours/Alfred I. duPont Hospital for Children in Wilmington, Delaware, adopted Circulation, a new Uber-integrated transportation management platform to provide NEMT services. As a "customizable, patient-centric digital transportation platform," Circulation uses a digital platform that connects Uber with patients, care and transportation coordinators, and healthcare providers to reduce missed doctor's appointments. In addition, Nemours Children's Health System and healthcare technology company RoundTrip announced a partnership in November 2016 to improve patient experience by providing a better option for on-demand, non-emergency patient transportation. Nemours will use RoundTrip's web-based portal and mobile platform to coordinate non-emergency medical transportation services and connect patients with certified drivers in real time (Nemours, 2016).

Another notable development is the shift from DART shift providing funds directly to social service providers like Easterseals and CHEER (senior centers in Sussex County) to provide transportation services. While the contracting option provides a cost-savings measure, the initiative represents a local best-practice strategy to coordinate specialized transportation services that improves transportation access and service efficiencies. This innovative transportation strategy is applicable to other contractual arrangements with specialized 5310

and human-services transportation providers elsewhere in Delaware—including the Dover, Delaware, area.

Cooperative transportation models and programs like ITN*SouthernDelaware*, which is based on the national ITN*America* model, show promise in fill gaps in mobility and transportation service in Sussex County. Village networks, like the Greater Lewes Community Village (Sussex County) and the Brandywine Village Network (in northern New Castle County and now operating as the Sussex Village Network in Sussex County) have the potential to bridge gaps in mobility and transportation needs in targeted locations in Delaware where there are concentrations of older adults.

TAKE-AWAY

Advance a Mobility Management Framework in Delaware

Opportunities for Delaware (with DTC as the "lead" agency) to compete for federal funding could greatly increase the likelihood of advancing a mobility management framework in Delaware. It is recommended that DTC:

- Implement a one-click/one-call travel information portal/trip planning system to serve as "one-stop shop" resource making travel arrangements across multiple modes and transportation providers.
- Advance the state's mobility management framework by the evaluating, expanding, and possibly replicating current programs (e.g., Flex, RideShare Delaware) designed to target transportation-disadvantaged populations.
- Offer additional services to seniors and persons with disabilities.
- Evaluate operational efficiencies the operations of DTC services and programs.
- Conduct outreach to Delaware's medical centers and healthcare systems to explore partnerships with ride-hailing companies using modern, app-based technology.
- Determine the cost savings of partnerships with Easterseals and CHEER aimed at offsetting burden place on Paratransit service and determine whether partnerships should be continued or expanded based on assessment of these arrangements.

Land Use and Transit Connection

The dispersion of various specialized transportation programs and lack of coordination across agencies and organizations can lead to ineffective, inefficient, and/or gaps in specialized transportation services. Despite DTC's longstanding efforts to coordinate human-services transportation and public transportation in the Delaware, many obstacles and challenges still exist. Changes in demographics, shifts in land-use patterns, and the disconnection between land-use and transit planning can all drive demand for paratransit and specialized transportation services in Delaware. Potential "demand drivers" of paratransit services in Delaware include the development of "age-restricted" communities in remote areas, evolution of seasonal to year-round manufactured home communities in coastal areas, policies permitting private roads and cul-de-sacs, first- and last-mile barriers to transit, and the location of community service facilities relative to transit. IPA is conducting concurrent research to identify and map community facilities that drive demand for specialized public transportation services in Delaware.

In Delaware, local governments historically have had primary responsibility for land-use planning, but have played a minor role in planning for transportation investments. By law, Delaware local governments (municipalities and counties) are required to prepare and adopt comprehensive plans as a blueprint for growth and development. Delaware Code Title 22, Chapter 7, Section 702 requires Delaware municipalities to prepare comprehensive plans that "[encourage] the most appropriate uses of physical and fiscal resources of the municipality and the coordination of municipal growth, development, and infrastructure investment actions with those of other municipalities, counties and the State" (22 Del. C. § 702 (b)).

Delaware local governments (municipalities and counties) are also mandated to prepare and adopt comprehensive plans as a blueprint for growth and development. Delaware Code Title 22, Chapter 7, Section 702 requires Delaware municipalities to prepare comprehensive plans that "[encourage] the most appropriate uses of physical and fiscal resources of the municipality and the coordination of municipal growth, development, and infrastructure investment actions with those of other municipalities, counties and the State" (22 Del. C. § 702 (b)). Delaware Code Title 9 requires counties to prepare and adopt comprehensive plans (9 Del. C). Delaware local governments must prepare and re-adopt comprehensive plans at least every ten years, with revisions, updates, or amendments conducted as needed. Each comprehensive plan is reviewed and certified by the Office of State Planning Coordination (OSPC), which affirms that the county or municipal comprehensive plan has incorporated the state's goals, policies, and strategies and includes all the required elements set forth in the Delaware Code (9 Del. C § 2656).

Because there is a need to link land use and transportation, transportation is a required element of comprehensive plans for jurisdictions with populations greater than 2,000. According to Office of State Planning Coordination, a "Transportation Plan must include policies, statements, goals, planning components and a map which serve to define any critical transportation issues and strategies and actions to improve the transportation system which serves the town" (OPSC, 2015, p. 5).

Although transportation is a required element, Delaware local governments (other than the City of Newark's Unicity Bus System) do not operate public-transit systems. Yet, according to TransitCenter, a foundation dedicated to urban mobility, "[local] land use [patterns] can determine the viability of transit" (Accuardi, 2017). It states that, "Walkability is one of the keys to high transit ridership, and yet much of the nation's transit is located in low density, "unwalkable" places. As a result, the U.S. transit industry faces the need to create "first- and last-mile" connections to and from transit" (Accuardi, 2017). While transit agencies are in the business of operating bus and trains, addressing first- and last-mile connectivity traditionally falls within the purview of local governments. To achieve high-transit ridership, safe access and first- and last-mile connectivity to transit hubs or stations must be addressed in comprehensive plans. Moreover, improved coordination of housing, transportation, and land-use policy can help transportation-constrained populations live closer to transit and/or within walking distance of the services of daily living.

Delaware's Strategies for State Policies and Spending provides a policy framework for planning in Delaware and guidelines to coordinate land-use decision-making with the provision of infrastructure and services (OSPC, 2015). The Preliminary Land Use Services (PLUS) process enables state agencies to review and comment on development projects and comprehensive plans during the preliminary stages of local development. Both master planning and planning for transportation improvement districts (TIDs) are also being advanced as strategies that can support efficient land use by integrating transportation investments and land-use decisions. Area-wide master plans can help to implement local government certified comprehensive plans by spelling out the details of, and the responsibilities for, the provision of infrastructure services in an efficient, timely, and cost-effective manner (OSPC, 2012). When TIDs are considered and mapped within a comprehensive plan, and used in conjunction with a sound capital improvement plan, they can be an effective tool for ensuring adequate infrastructure to accommodate growth where and when it is anticipated (Scott and Watkins, 2014).

"Transit-oriented development" (TOD) calls for the creation of compact, walkable, pedestrian-oriented, mixed-use communities centered near high-quality transit stations or hubs. Yet, multi-modal, first- and last-mile connections around transit stations have proven to be the greatest

barrier to TOD. Advanced by FTA, "transit-supportive development" (TSD) is described as "the type of development that may be supported by transit and that, in turn, may support transit" (Santasieri, 2014, 2). A more general policy approach that integrates regional transit investment with local land use, TSD is applicable to communities that may not yet have extensive transit service but seek to create development patterns that are conducive to future transit expansion and TOD. Research suggests that coordinating regional, corridor, and local planning is key to planning transit-friendly places. "To succeed, transit needs to be accepted and accommodated by local communities that regulate local development" (Santasieri, 2014, 7).

TAKE-AWAY

Local Governments Should Consider TSD as a General Policy Approach that Integrates Regional Transit Investment with Local Land Use

To foster TSD, local governments can:

- Improve street network connections and infrastructure barriers that prevent "first- and last-mile" connections to and from transit.
- Plan for transit-oriented development (TOD), regulatory changes, policies, and community design that put people within walking distance to transit.
- Integrate TSD considerations and guidelines within comprehensive plans, regulatory policies, and community design characteristics.
- Implement local complete streets policies that support multi-modal transportation options to meet the needs of people of all ages and abilities.
- Enhance streetscapes to create destination-oriented places with "walk appeal," which incorporate pedestrian-, bicycle-, and transit-friendly design.
- Adopt regulations that enable mixed-use development along transit corridors and nodes and create a balance of activities near transit.
- Adopt regulations that allow for increased development density near transit corridors and service areas.
- Update its Americans with Disability Act (ADA) self-evaluation plan and address barriers to accessibility identified through the jurisdiction's transition plan.
- Ensure pedestrian facilities in the public right-of-way are readily accessible to and usable by pedestrians with disabilities, as per the Americans with Disability Act (2010) Standards for Accessible Design (U.S. Access Board, 2011).

Mapping Age-Restricted Communities in Delaware

According to industry analysts, the senior housing industry has largely recovered from its slump during the Great Recession. The National Association of Home Builders (NAHB) predicts that "the 55 and older segment of the construction market for single-family houses is expanding by 49.6 percent a year, far outpacing the 3.7 percent growth rate for the overall single-family market" (Jordan, 2015). Steve Bomberger, Chair of NAHB's 55+ Housing Council and the president of Benchmark Builders in Delaware, notes that "Demand for 55-plus housing has never been higher" (Jordan, 2015). As the housing market has rebounded in Delaware, there has been an upswing in the development of age-restricted communities (also called "active adult, 55+, or 62+ independent living communities). These communities are distinct from "assisted-living, continuing care, or skilled nursing" facilities where residents generally are medically dependent and unable to drive. More age-restricted communities are being developed in areas not well served by fixed-route transit—including coastal resort areas in Sussex County and in undeveloped rural areas where the land prices are lower and housing is more affordable. While young retirees may be able to drive when they move to these communities, poor network connectivity and a lack of transit facilities present additional challenges to addressing mobility as residents "age in place." This trend may generate a future demand for paratransit and/or specialized transportation services as residents of age-restricted communities lose their ability to drive and lack transit access.

WILMAPCO's 2015 Transportation Justice (TJ) report provides accessibility and connectivity analyses between TJ areas and age-restricted communities in both the Cecil County, Maryland, and New Castle County, Delaware planning areas. The analyses explored issues in suburban areas with respect to walking accessibility to bus stops, transportation system connections from TJ neighborhoods to important TJ destinations, and age-restricted housing and transportation connectivity. WILMAPCO developed a methodology, known as the Age-Restricted Community Connectivity Assessment (ARCCA), to explore pedestrian connections from existing and emerging age-restricted communities (Swiatek, 2015). The report notes "many of these communities are located in areas with limited development and have poor access to public-transit and pedestrian networks."

Building upon this methodology, IPA—in collaboration with WILMAPCO and DTC—mapped the location of age-restricted retirement communities in Delaware. IPA requested information from local government planners, OPSC circuit-rider planners, and DSHA on existing age-restricted communities and new communities that have been approved for development, but not yet built. A spreadsheet was created that provides information on age-restricted communities in each county, including community names, primary and "geo-based" addresses, number of residential units within each community, and development status (existing or planned).

With assistance from WILMAPCO, the spreadsheet was used to create a KML file format, which displays geographic data in a Google Map (available at goo.gl/kSe3pF). Additional GIS layers, added to the Google Map data by a DTC planner, provide the location of age-restricted communities in Delaware in relation to transit service and land use. A Google Earth file (available at goo.gl/43w2rS), allows for the geospatial analysis of data layers. The file allows the locations of age-restricted communities in each county to be viewed relative to map layers such as State Strategy Level Areas 1–4; bus stops and routes; weekday, Saturday, and Sunday ADA (¾ mile) buffer zones (as of June 2016), and Flex service buffer zones. Figures 5–10 provide comparisons of the Google Maps and the Google Earth maps for New Castle, Kent, and Sussex Counties.

The major takeaways of this mapping exercise are twofold. First, other than WILMAPCO, no planning entities are actively tracking the location of existing or planned age-restricted communities relative to access to transit services. Second, with the improved housing market and Delaware's favorable tax environment for retirees, demand will continue to grow for relatively inexpensive retirement homes in coastal areas. To track the proliferation of age-restricted communities statewide, the future conversion of the KML file to an ArcGIS compatible format and "open access" the file via FirstMap Delaware is recommended. This will enable planners to share information and conduct more detailed geospatial analysis statewide. For example, DTC prepared a map showing locations of age-restricted communities in relation to bus stops and the ¾-mile paratransit buffer in New Castle County (Figure 11 and Appendix M).

Figure 5. Location of Existing and Planned Age-Restricted Communities in New Castle County

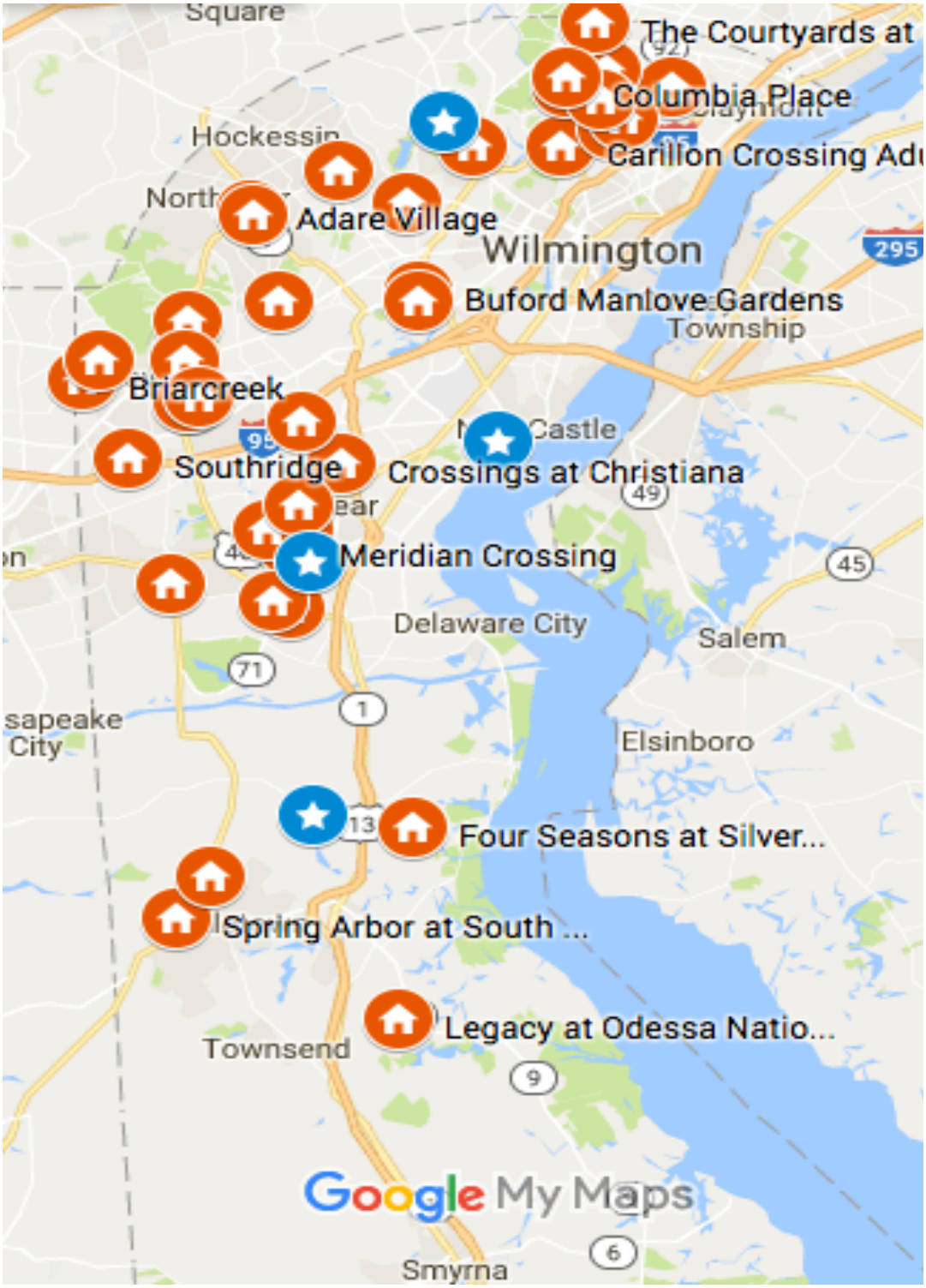


Figure 6. Location of Existing and Planned Age-Restricted Communities in New Castle County in Relation to Additional Data Layers (see Appendix K for larger image and legend)

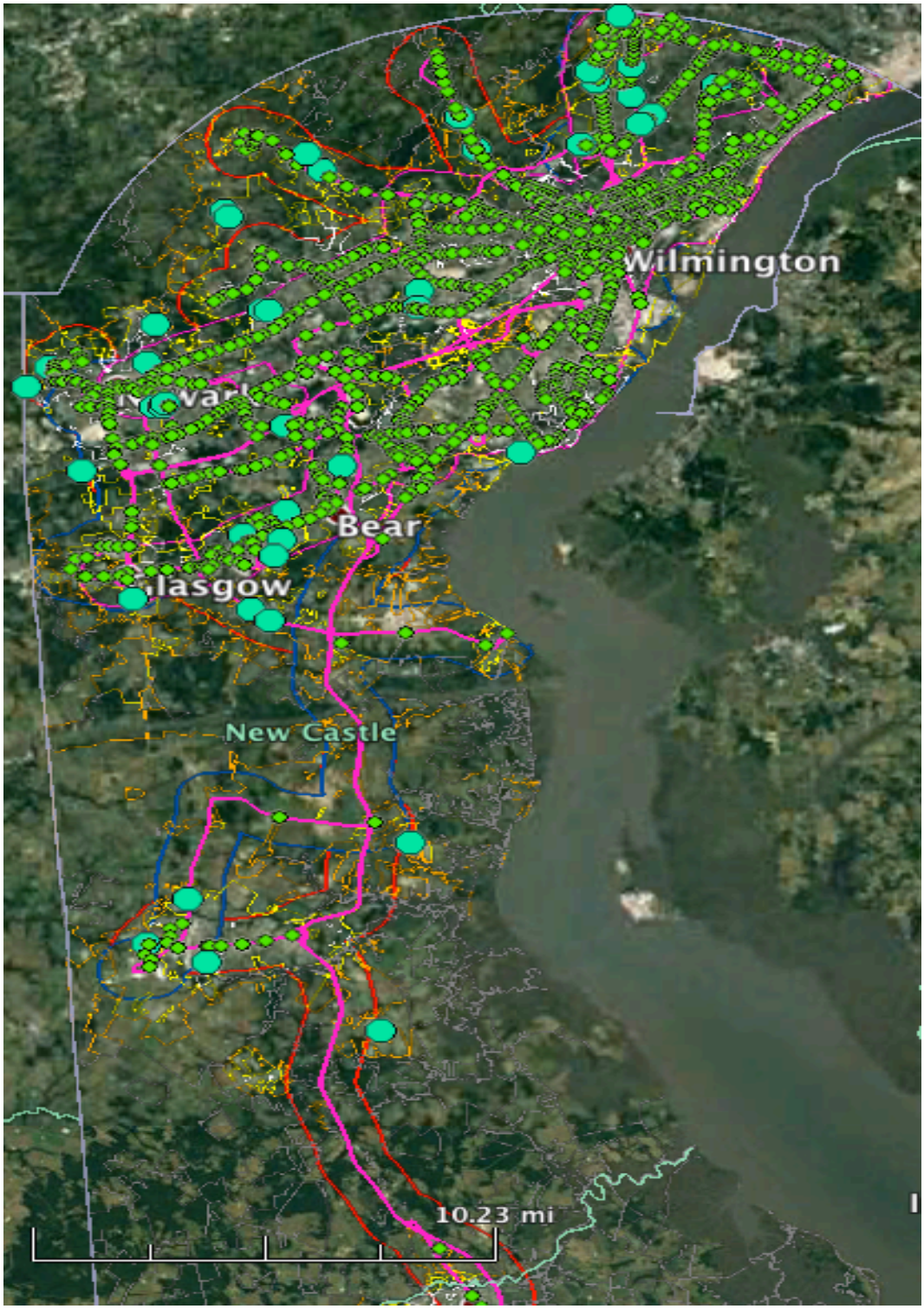


Figure 7. Location of Existing and Planned Age-Restricted Communities in Kent County

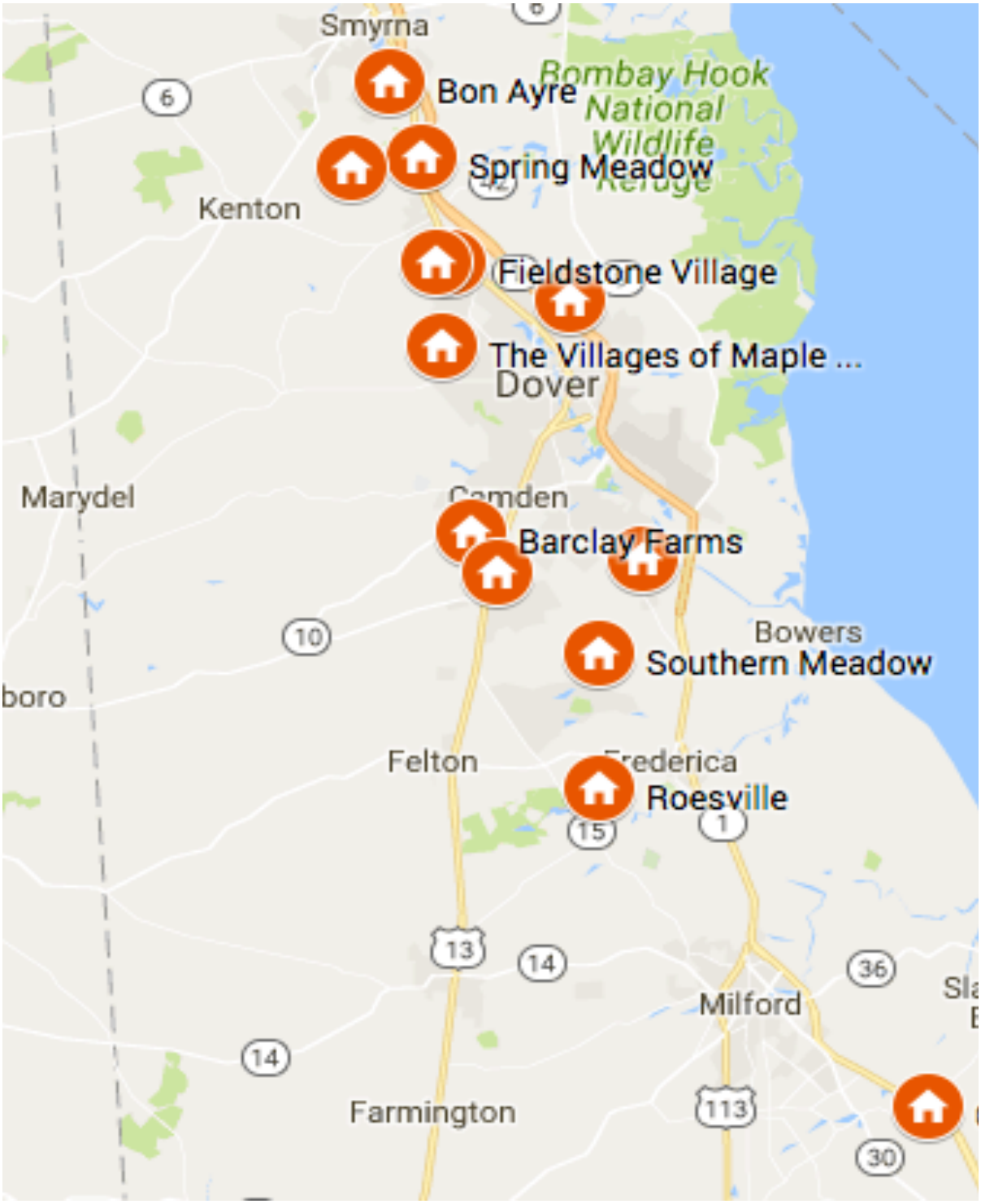


Figure 8. Location of Existing and Planned Age-Restricted Communities in Kent County in Relation to Additional Data Layers (see Appendix L for larger image and legend)

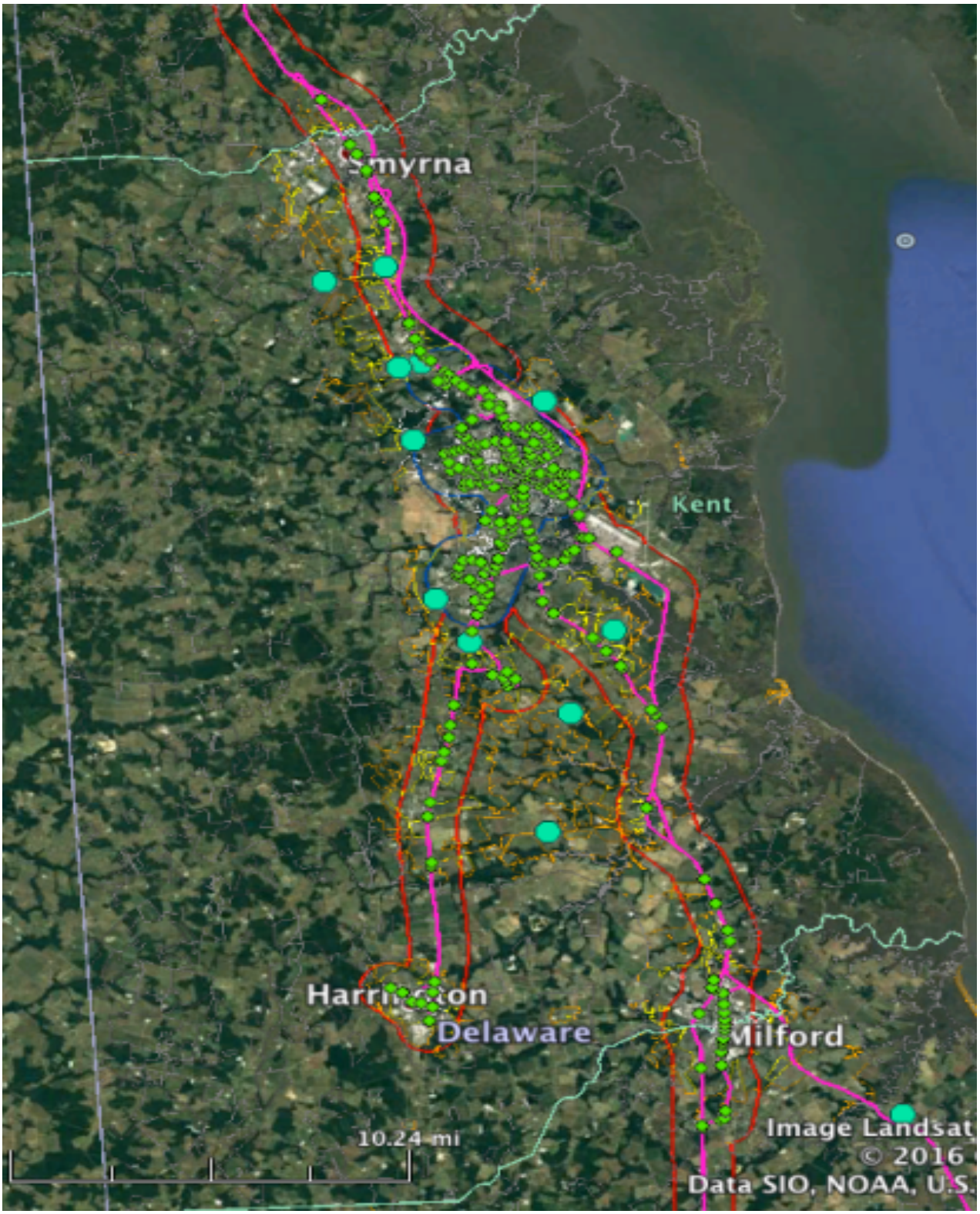


Figure 9. Map of Locations of Existing and Planned Communities in Sussex County

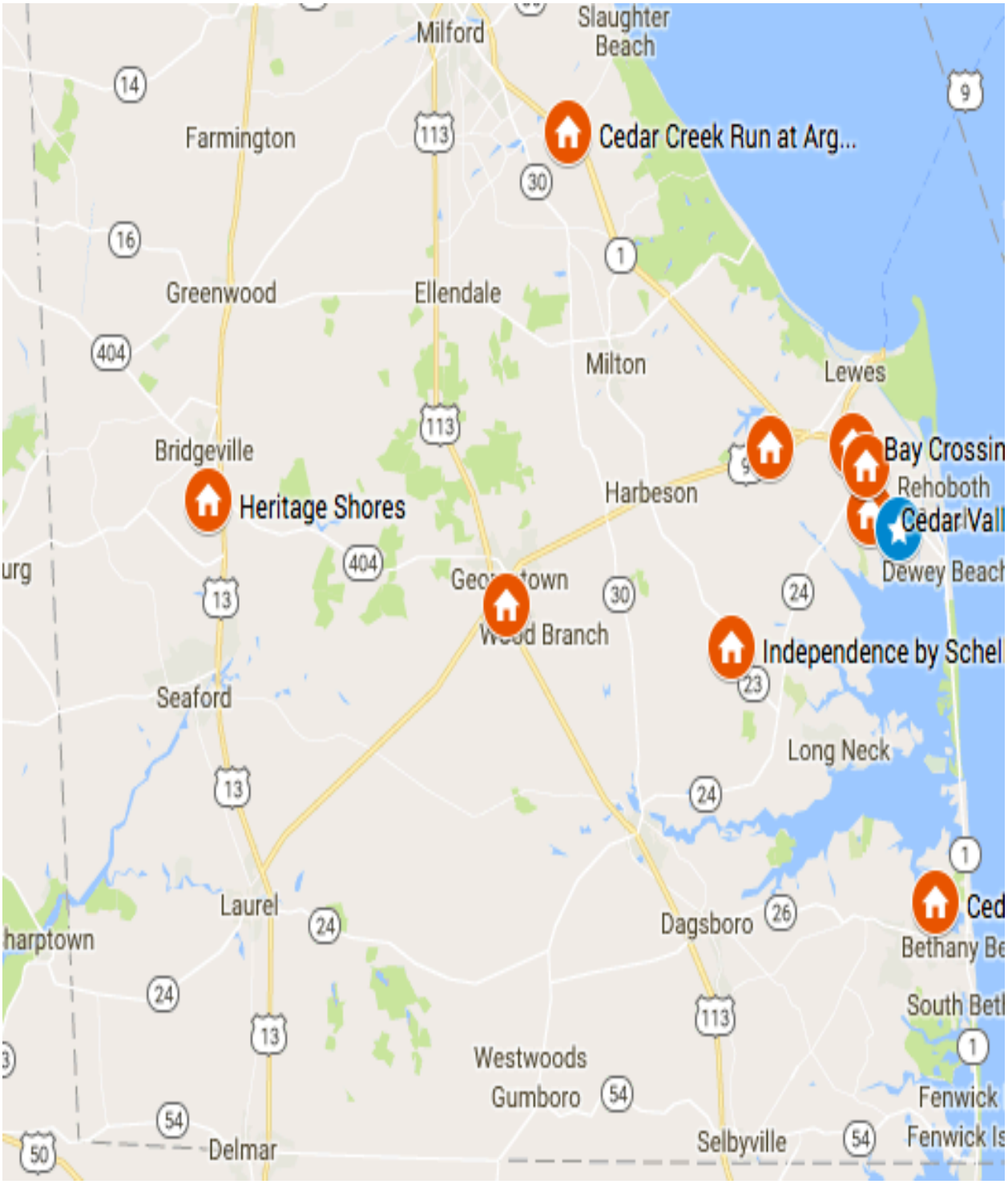


Figure 10. Map of Locations of Existing and Planned Age-Restricted Communities in Sussex County in Relation to Additional Data Layers (see Appendix M for larger image and legend)

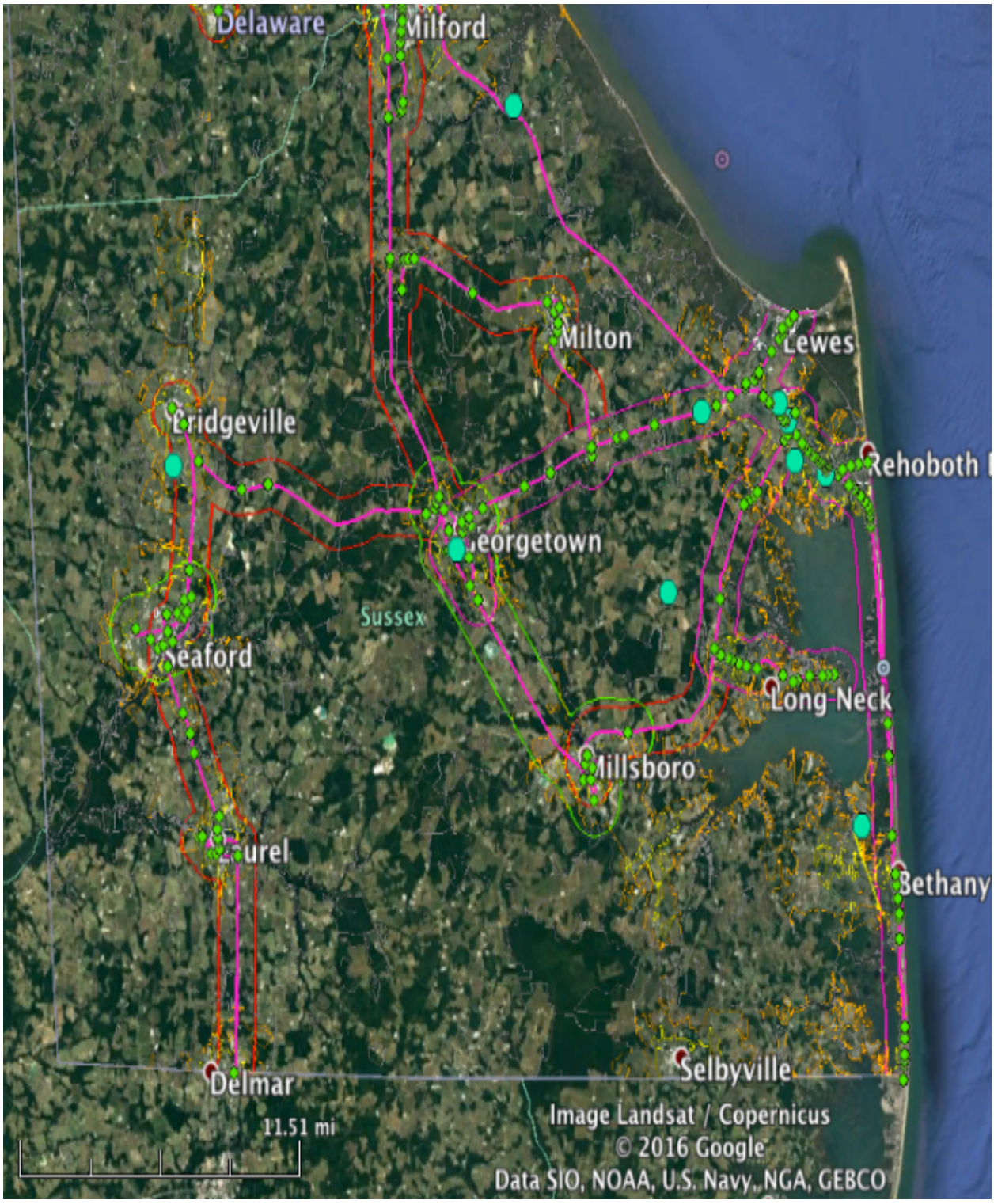
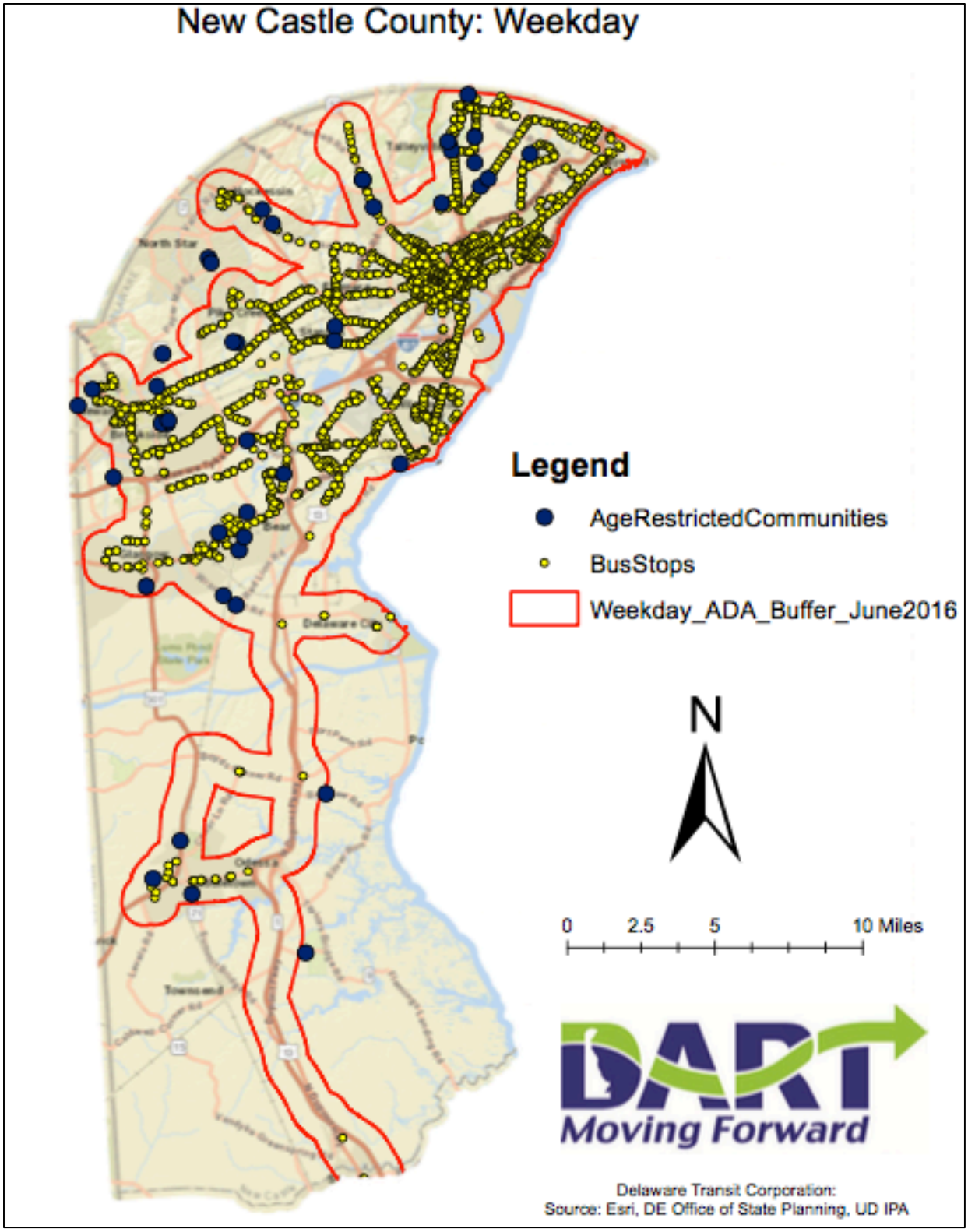


Figure 11. Map Showing Locations of Age-Restricted Communities in Relation to Bus Stops and the ¾-Mile Paratransit Buffer in New Castle County (see Appendix M for larger map)



Mapping Locations of Seasonal, Manufactured/Mobile Home Communities

In addition, preliminary research points to issues concerning the evolution of seasonal, resort-oriented manufactured home communities in Sussex County to year-round, residential, and mixed-use communities. As part of a separate project, an IPA graduate student prepared a GIS Story Map to illustrate taxing issues concerning communities zoned in Sussex County as "manufactured home parks." According to the Sussex County Zoning Code, a manufactured home park (i.e., RV/trailer park, trailer court, mobile home park, or campground) is "any tract of land used or offered for use for the location of manufactured homes of other ownership to be occupied as dwellings" (Sussex County Zoning Code §115-4). By definition, a manufactured home (i.e., house trailer, single-wide, double-wide, mobile home) is "a movable or portable dwelling not less than 450 square feet in size, constructed to be towed on its own chassis, connected to utilities and designed with or without a permanent foundation for year-round occupancy, which can consist of one or more components that can be retracted for towing purposes and subsequently expanded for additional capacity or of two or more units separately towable but designed to be joined into one integral unit " (Sussex County Zoning Code §115-4).

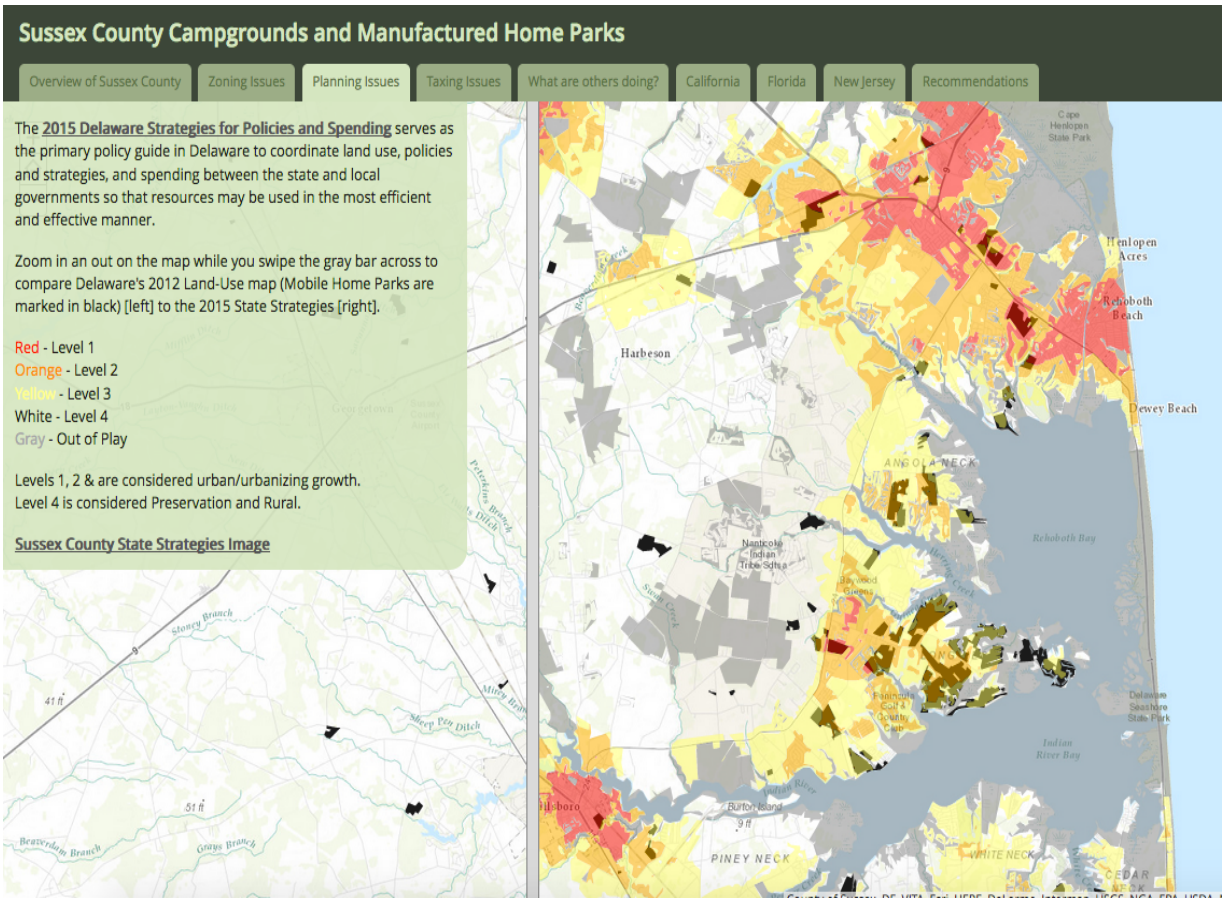
As illustrated in the GIS Story Map, and reported in a *Cape Gazette* article, manufactured home/RV parks and campgrounds in Sussex County slip into a "gray zone." Homeowners in manufactured home/RV parks do not pay Sussex County taxes, but pay park owners a seasonal lot rental fee plus utilities. Some park owners require recreational vehicles (RVs) to be moved or stored elsewhere off-season. Other park owners allow manufactured homes to remain onsite during off-season until utilities are turned off, as long as homeowners pay seasonal fees in advance.

Yet, many of the issues identified are larger than Sussex County taxing issues. While some communities (e.g., Pot-Nets Communities in the Millsboro/Long Neck, Delaware area) started out as small, seasonal communities, they are now being marketed as year-round, mixed-use "gated" residential communities. Some mobile home communities in Sussex County offer both year-round and summer residency options with recreational amenities such as marinas, swimming pools, golf course, clubhouses, and large entertainment venues (e.g., Pot-Nets' Paradise Grill in Long Neck). The combination of manufactured homes in a land-lease community makes living in coastal Delaware affordable to retirees and individuals on fixed incomes.

As illustrated in Figure 12, one tab of the GIS Story Map (https://goo.gl/c3pnBB) shows communities are located in State Strategy Levels 3 and 4 that are not intended for growth, development, state services (including transportation such as transit/paratransit services), and infrastructure investment. It is unclear whether manufactured/mobile home communities that

are intended for temporary, seasonal uses are now being converted into year-round residential areas (that may violate existing zoning code or housing regulations). In addition, scrolling down on this GIS Story Map tab (http://arcg.is/2dDIHQ3) shows that many communities are located are environmentally sensitive locations subject to severe flooding and road closures. This may pose public safety problems if evacuations take place during a weather emergency. Unfortunately, because the GIS Story Map is based on Delaware's 2012 Land-Use Map, it may not accurately show many of the new campgrounds/RV/mobile home communities that have been recently developed or have been approved for development. It is also difficult to tell where and to what extent existing communities are (1) either being expanded or (2) evolving from seasonal to year-round, mixed-use residential communities that are becoming major destinations for tourists, retirees, and others on fixed incomes. This land-use/transportation/environmental/public safety planning issue needs to be addressed in Sussex County's Comprehensive Plan as well as the MPO's long-range transportation plan.

Figure 12. Map Showing of Location of Sussex County Campgrounds and Manufactured Home Parks Relative to Delaware State Strategy Level Areas (see Appendix O for larger image)



TAKE-AWAY

Use GIS to Track and Assess Potential Demand Drivers for Paratransit Services in Delaware

Potential demand drivers for paratransit in Delaware include (1) the development of age-restricted communities in areas not served by transit and (2) the evolution of seasonal, manufactured home communities into year-round destinations in State Strategy Level areas that are not targeted for growth and development. Planners need access to geospatial data to determine whether shifts in land use may have implications for future state services and investment. In addition, it is recommended that:

- WILMAPCO's ARCCA methodology be adapted for use by other planners in Delaware to track the location and development of urban age-restricted communities statewide (Swiatek, 2015).
- The location of age-restricted communities be evaluated during the Preliminary Land Use Service (PLUS) process relative to State Strategy Levels, proximity to fixed-route transit service and stops, Flex zone areas, and ADA ¾-mile paratransit buffer areas.
- Encourage, using a mix of restrictions and incentives, the development of age-restricted communities near destinations of daily living and with alternative transportation connections.
- Raise awareness of the existence or lack of alternative transportation connectivity to potential homebuyers in age-restricted and mobile/manufactured home communities.
- Incorporate mapping and data for Delaware's age-restricted information into FirstMap, Delaware's enterprise Geographic Information System (GIS). FirstMap allows for the sharing of data among state organizations, academia, local governments, and the general public (available at http://firstmap.delaware.gov/).
- Create and share GIS datasets and maps (via FirstMap Delaware: http://firstmap.gis.delaware.gov/) with layers displaying the age-restricted communities and their relation to fixed routes, bus stops, paratransit buffer, flex zone buffer, and state strategy levels.
- Evaluate implications of development in remote, sensitive areas relative to the need to provide emergency services, paratransit, and evaluation during weather-related storm events.

Evaluation of National Best-Practice Strategies and Models

"Best-practice" research refers to a systematic process used to identify, describe, and evaluate potentially replicable strategies to address mobility management issues nationwide. Through this research, IPA identified themes and strategies to improve mobility and coordination of specialized transportation services. These include:

- One-Stop Travel Information and Trip Planning Systems
- Expanded Specialized Transportation Mobility Options
- Transportation Technology
- Fee-Based Transportation Co-ops
- Enhanced Coordination
- Land-Use and Transportation Planning Integration
- Shared-Use Mobility to Public Transit
- Improved Mobility Infrastructure
- Pilot Expansion of Rideshare Programs.

For each theme, the research team identified several best-practice examples that could be replicated in the state of Delaware. A Matrix of Mobility Best Practices, which summarizes applied examples of each theme, is presented in Appendix P.

Develop and Implement a One-Stop Travel Information and Trip Planning System

One of the hallmarks of a customer-focused, mobility management system is creating "one-stop shop for mobility options" (American Public Transportation Association, 2012). Real-time, state-of-the-art travel information and trip planning systems provide comprehensive transportation portals for customers to make appropriate, customized travel arrangements. Such a portal could assist Delaware's transit customers and transportation providers with a better understanding of existing transportation options and arrange local trips through a "one-call" or "one-click" process.

Veterans Trip Planning (211) Systems

The Federal Transit Administration (FTA) encourages the use of information portals through a Veterans Transportation and Community Living Initiative Grant. This grant, although no longer available, established one-call/one-click information centers to streamline access to public transportation options for veterans and their families. VetLink and MoVET are two examples of programs funded through this grant.

VetLink was designed to assist with the transportation needs of veterans and their families in California by providing online and telephone travel information. VetLink began through a partnership among the Riverside (California) Transit Agency, 2-1-1 Riverside County, 2-1-1 San Bernardino County, and Riverside's 2-1-1 Community Connect transit agencies (Riverside Transit Agency). The VetLink Trip Planner provides the one-click component of this program and consists of a Find-A-Ride-type web portal that provides specific trip information from a database of almost 42 provider organizations. Consumers supply specific information about their trip and travel needs to determine their eligibility for services and compare service accommodations. The one-call component of this program is initiated by calling 2-1-1 to speak with a community resource advisor in Riverside County or San Bernardino County. Users speak directly to a representative that will assess their trip needs and provide information about available options (San Bernardino, California). In addition to the one-click component, the ability to call is particularly attractive because populations that do not have access to, or are unfamiliar with, the Internet can utilize it.

MoVET is a one-call/one-click center developed by the Montachusett Regional Transit Authority (MART), to assist area veterans and families of active duty military. MoVET's website allows individuals to schedule trips by entering basic information such as trip origin, destination, time and date of travel, how far they are able to walk to access transportation, whether they require an assistive device, and whether they will be traveling round trip. The website uses this information to provide a list of transportation options including buses, third-party transportation providers, carpooling services, and volunteer drivers. Users can also learn about trip costs and the average travel times. In addition to their website, MoVET has a one-call component that connects veteran agencies and other transportation providers through a single number. Veterans can receive trip information during off-peak hours, cancel rides, and speak to transportation providers to schedule trips (Montachusett Regional Transit Authority).

Trip Planning and Scheduling (511) Systems

In addition to providing transportation information to veterans and their families, similar one-call/one-click models can be used by all travelers via web-based information portals and 511 services. These one-stop shops are established in areas such as New York and Washington State, where individuals have access to public transportation information 24 hours a day, seven days a week.

In King County, Washington, a transportation information portal has been established allowing individuals to explore the county's various transportation options. The web-based portal is located on the county website under a tab titled, "Explore Your Options." It includes

information on four categories of transportation—public transit, walking, biking, and carpool/vanpooling.

"511" services are another example of trip planning and scheduling systems that provide access to information on transportation services and traveling conditions. The 511 number is the national phone number reserved for such information. In New York State, the 511 service is a free, comprehensive telephone and web service that offers transportation information via landline, cellular phone, or computer. The 511NY service provides and efficient method of locating information on traffic conditions, trip-planning, and alternative transportation options and allows registrants to call about their inquiries or comments related to the Metropolitan Transportation Authority's subways, buses, railroads, or bridges and tunnels. The web service includes traffic information, a transit trip planner, rideshare information, and other travel links (511NY).

Applicability in Delaware

Establishing a similar one-stop travel information and trip planning system in Delaware could offer greater efficiency in the use of transportation resources and strengthen collaboration and coordination among the state's transportation providers. Furthermore, investing in technology that promotes information sharing among providers and commuters could increase the visibility and usage of alternative transportation options and related information. Delaware has undertaken steps toward one-stop travel information portals (e.g., DTC's trip planner and links to bus schedules and paratransit information on DART's website). Additionally, Delaware has received funding under the 511 Planning Assistance Program to establish a 511 system that would be useful for residents with little or no access to or knowledge about the Internet (U.S. Department of Transportation).

Expand Specialized Transportation Mobility Options

Expanding specialized mobility options for transportation-disadvantaged individuals involves identifying and promoting other means besides paratransit. Expanding these options helps better address the needs of populations that may have little or no access to public transit or require additional assistance when traveling. Ridesharing and social services transportation are examples of such options.

Expanded Social Services Transportation

In the greater Phoenix, Arizona area, a decade-old volunteer program has been serving the area's senior citizens who rely on specialized transportation to independently access social services and other important support programs. The Outreach Program for Ahwatukee Seniors (OPAS) began at a local Lutheran Church, grew in popularity, and became a program of the

Ahwatukee Foothills Family YMCA. Currently, the "Y OPAS" program is a community effort that offers free support services for the seniors of Ahwatukee and their caregivers (Valley of the Sun YMCA). The program not only provides transportation, but also friendly visiting, caregiver relief, reassurance calling, minor handyman repairs, business help, and support after being discharged from the hospital. The service offers several free rides per week and takes seniors wherever they need to go within the city limits. This service has been extremely beneficial to the aging community after the city's ALEX circulator experienced cutbacks and the dial-a-ride program made changes to its eligibility requirements (Meehl, 2010).

Ridesharing

Another specialized transportation option growing in popularity has been the use of ridesharing. Ridesharing occurs when passengers share the use of a vehicle, which can include carpooling, vanpooling, and public transportation. Ridesharing helps to not only coordinate transportation for multiple users, but also helps address traffic congestion and automobile emission concerns. Private ridesharing options such as Uber, Bridj, Lyft, and Lift Hero are options that help first- and last-mile connectivity issues. First- and last-mile connectivity involves the additional transportation needed to get to and from a transit station or hub. Many individuals face issues at the beginning or ending areas of their trip simply because they do not reside close to or cannot easily access a public-transit stop. Out of the various ridesharing options available today, Lift Hero is a private ridesharing option located in California that has focused on providing specialized transportation services for seniors. Many of Lift Hero's drivers are students studying and training to be doctors or other healthcare professionals and thus have a working knowledge of issues and challenges facing older adults, especially while traveling (Schiller, 2014).

Similar to Lift Hero, Direct Mobile Transit is a new transportation company in Delaware focusing on providing door-to-door service for older New Castle County residents and people with disabilities. Drivers receive first aid and CPR certification along with special training for assisting riders with a variety of disabilities. The company uses wheelchair-accessible vans that are specially equipped with GPS systems to help avoid traffic jams and better coordinate services. Direct Mobile Transit's ability to provide wheel-chair accessible transportation at prices comparable to those of local cab companies might help alleviate the need for alternative specialized transportation options in Delaware (The News Journal, 2016).

Applicability in Delaware

Given Delaware's increasing senior population, "on-demand" mobility options and other specialized transportation services could be extremely beneficial to Delaware residents. Establishing programs like Y OPAS at local YMCAs in Delaware could benefit residents and their families who require the assistance of additional services besides transportation. Additionally,

expanding the service area of transportation providers like Direct Mobile Transit and Uber could be beneficial for seniors and persons with disabilities in areas like Kent and Sussex Counties, where coordinating rides to and from nonemergency medical appointments can be extremely difficult. As Delaware's communities face increased demands for and reliance on specialized transportation, social-service-related transportation programs and ridesharing options can help address the needs of Delaware's populations.

Utilize Transportation Technology

Technological developments will continue to play a significant role in mobility and transportation coordination. Traffic congestion and population growth continue to create demand for additional transportation infrastructure, and new transportation technologies are emerging to meet these various challenges. Technology can also improve existing services.

Hackathons

New York University and the Metropolitan Transportation Authority have been teaming up to host a number of "hackathons"—events in which computer programmers, planners, and others interested in a particular topic come together and collaborate on software projects. In New York, 150 participants came together, submitting 15 proposals on ways to transform the Staten Island Bus Service (Susan, 2016). Prior to this event, a hackathon was held for purposes of developing a transportation mobile application.

Community Travel Videos

Technology is also useful to communicate and inform commuters about the range of available travel options, network of diverse transportation services, and solutions offered by providers. In Washington State, the King County Mobility Coalition maintains its vision of facilitating "a coordinated transportation network that allows all people to move freely around King County and the Puget Sound region. [It seeks to] improve mobility for people with limited transportation options due to age, income, disability, limited English proficiency, or other limiting factors" (King County, Washington). The Coalition has utilized current technology to pursue its vision is through the development of short video series on its YouTube channel (https://goo.gl/Oas5ua). Videos, which are available in different languages, describe available transportation options and how to use and pay for them.

Transit Applications

Now, more than ever, mobile technology (i.e., devices and smartphones) is playing a larger role in how individuals access transportation services. Transportation applications provide real-time route information and prompt trip scheduling. With up-to-date information about public-transit options, riders can easily and efficiently navigate to and from their destinations.

Valley Metro in Phoenix is the regional public transportation agency that provides coordinated, multi-modal transit options to area residents. In keeping with the agency's commitment to making transit easy and accessible, Valley Metro has created a free mobile app called "Ridekick." Ridekick enables residents to obtain up-to-the-minute arrival times of bus or light rail options, identify park-and-ride locations, and plan a trip. The app includes GPS and filters, which enable users to find the best available public transportation option based on their specific needs and current location (Valley Metro, 2015).

A broader application is GoSmart, a website and call center that serves as a gateway to information on transportation options for North Carolina residents. GoSmart's website includes links to transit and other modes of travel, such as ridesharing, cycling, and walking, as well as a link to GoLive, a mobile app and web-based program that provides real-time travel information to transit customers across the region. Users can download the app or go online and instantly view route information for eight public-transit systems. GoLive also includes real-time locations of all transit system vehicles and lists important announcements. For commuters who do not use smartphones, GoLive also has a text message option to receive real-time arrival times for specific transit stops (Research Triangle Regional Public Transportation Authority).

Advanced Trip Planning Technology

Many public transportation providers now have trip planners accessible through the agency website where users can input their current location, destination, time and date of departure, and time and date of arrival. The trip planner uses this information and provides a list of available transportation options, along with schedules and fares. Given this information, commuters can then evaluate their options and customize their trips.

The Regional Transportation Authority (RTA) of Chicago provides an abundance of information on their website for users looking for more information on how to commute via public transportation. On RTA's website, users are able to input start and end destinations and view directions in either Google Maps or the RTA Trip Planner. Google Maps for Transit is a public transportation-planning tool that integrates transit stops, routes, schedules, and fare information into the Google Maps service. The Chicago Transit Authority has collaborated with Google Transit, allowing users to access schedule and route information with Google Maps and Google Maps for Mobile. The RTA Trip Planner, on the other hand, is a multi-modal trip planner that enables riders to locate schedules, fares, and trips by using only accessible services. This system enables riders to choose among the bus, train, driving, or any combination of non-motorized modes, such as biking and walking (Chicago Transit Authority). Additionally, multi-modal transportation information is available with its new "goroo" app. This mobile app is an extension of the online trip planners and includes all of the great features from RTA's Goroo

website (Regional Transportation Authority, 2012). Finally, the RTA Travel Information Center is available to provide travel information via telephone from 6 a.m. to 7 p.m. every day.

Another example of advanced trip planning technology is Iowa's Rideshare website, an Iowa Department of Transportation (IADOT)-sponsored site that is grant funded via the Federal Transit Administration's (FTA) Veterans Transportation and Community Living Initiative. State-of-the-art mapping technology allows users to search for possible carpool and vanpool matches based on commute routes. An interactive Google Map helps individuals identify and email potential sharing matches for single or repetitive trips. "Members are encouraged to work together to find what works for them and are responsible for setting up the parameters of their individual carpool. Users can sign up for options to be a passenger only, if they do not have a vehicle for a carpool" (Traffic Technology Today, 2016).

Dynamic Transport-Network Visualization

The use of technology to create online travel-planning applications continues to evolve as current initiatives push to improve the visualization of these applications. Web-based visualization practices provide users with a new experience by illustrating results through a detailed lens and providing directions that are much easier to understand than other travel planning applications.

In Arlington, Virginia, the Transit Tech Initiative has created a library known as Transitive.js that leverages the latest in web-based visualization to make trip-planning results easy to understand. In essence, the Transit Tech Initiative aims to provide a clear-cut representation of the various lines of transit modes, including stops and other points of interest, while having the interactivity and individualization of online journey planners. A key element of this project involves the importation of network information such as routes, stops, and individual trip information into a multimodal routing engine. This information generates a representation of the network that is more suitable for schematic mapping. Once the underlying structure of the transportation network is modeled and simplified, the Transitive.js library allows basic visual manipulation such as zooming and panning. The library, used alongside other toolkits, can create a fully interactive experience. The Transitive.js library helps commuters understand their transportation options by bringing together the visual simplicity of traditional mapping with the interactivity and customization of online trip planners (Emory, 2014).

Applicability in Delaware

Many of the aforementioned technologies could be applied Delaware. For instance, hosting a hackathon event at local community center might encourage individuals and organizations to get involved in the creation of new and innovative strategies that address the various transportation challenges within the state. In addition to hosting hackathons, the state could

also work on creating a community travel video series that informs residents about existing or emerging transportation options and how they would be employed. Finally, the state could further integrate multimodal options and web-based visualization into existing trip planning services to better coordinate existing services and increase ease of use.

Fee-Based Transportation Co-ops

Nonprofit Transportation Co-ops

Fee-based transportation co-ops are membership-based organizations that provide transportation within a designated service area. Members pay an annual fee and a small per ride fee is withdrawn from their pre-funded personal accounts. Money is not exchanged during rides. Two examples of these transportation co-ops are the Riders Club Cooperative in Pennsylvania and ITN*SouthernDelaware*.

The Riders' Club Cooperative is a nonprofit organization founded in 1984 that provides transportation to seniors, children, and the ambulatory disabled in Northwest Philadelphia and Eastern Montgomery County. Anyone who lives, works, or goes to school in these areas are eligible for membership. Drivers are also members of the cooperative and familiar with the community. This cooperative allows for flexibility and customized transportation that enhances the quality of life for those relying on alternative modes of transportation (Riders' Club Cooperative).

Established in 2015, ITN*SouthernDelaware* provides arm-through-arm, door-to-door service for Sussex County seniors who are 55 and older as well as visually impaired adults who are 21 and older. Rides may be booked at any time, with discounts available for those who provide advanced notice. The service is available 7 days a week, 24 hours a day for any purpose. Members utilize their own automobiles to provide volunteer transportation services for other members. In exchange, volunteers receive "ride credits" for themselves or another family member. As Delawareans strive to age in place and a growing number of communities are located away from public-transit stops, ITN*SouthernDelaware* aims to provide reliable transportation for these individuals (ITN*America*).

Public–Private Transportation Co-ops

FTA's mobility research agenda is seeking to improve public transportation services through the adaption of new mobility options that increase geographic coverage and service times, address "last-mile" issues for travelers, and ensure accessibility. Furthermore, the FTA and the federal Department of Transportation are involved in several new alternative mobility research initiatives, including Mobility on Demand (MOD) Sandbox Demonstration Program, Rides to

Wellness, and Accessible Transportation Technologies Research Initiative (ATTRI). These initiatives seek to research, identify, test, and implement, technologies, applications, and approaches that improve to reliable transportation.

Mobility on Demand (MOD) Sandbox Demonstration Program

The MOD Sandbox Demonstration Program provides $8 million to local projects that demonstrate innovative approaches to greater individual mobility. The MOD Sandbox Demonstration Program provides a platform for mobility on-demand concepts and solutions to be locally or regionally piloted. These MOD projects help to create more integrated, automated, and accessible transportation systems, while offering better connections to both transportation infrastructure and public/private transportation options (U.S. Department of Transportation, 2016).

MOD Sandbox Demonstration Project funds support activities such as planning and developing business models, obtaining equipment, acquiring or developing software and hardware to implement, and operating demonstration projects. By funding such specific and diverse activities, FTA is encouraging organizations to get further involved in public transportation issues and identify reliable and effective solutions that can increase transit ridership and deliver more customer-centered services. One of the guiding principles of the MOD Sandbox Program is that it is partnership driven. Potential projects should demonstrate collaborative efforts between the public and private sectors. For example, deploying on-demand transit systems such as those produced by Via Technologies, Inc. (e.g., a mobile application that matches users with a vehicle headed their way), local agencies or nonprofit organizations can work together to increase transit ridership, improve first- and last-mile connectivity, and provide more integrated, on-demand mobility options (Federal Transit Administration, 2016).

Rides to Wellness Demonstration Grants

Rides to Wellness Demonstration Grants “find and test promising, replicable public transportation healthcare access solutions that support the following Rides to Wellness goals: increased access to care, improved health outcomes and reduced healthcare costs” (Federal Transit Administration, 2016). The program aims to improve access to essential health and wellness services for transportation-disadvantaged individuals. Applicants must demonstrate that proposed projects among transportation, healthcare, and human-services organizations are collaboratively planned.

During the six-month grant period, Rides to Wellness Demonstration grantees test assumptions about their proposed solutions with potential users and plan how they will implement solutions on a broad scale. For example, Interfaith Senior Programs, Inc., a project based in Waukesha,

Wisconsin, focuses on providing access to preventative and primary healthcare options. The organization has been awarded the grant to test several concepts. The first is a one-call center/central dispatch system for scheduling rides to health screenings. The second involves travel training for seniors and persons with disabilities on using fixed-route bus services and creating individual transportation plans. By testing these concepts, the organization will identify the impact of services on the target populations and develop appropriate implementation strategies (Kansas Rural Transit Assistance Program).

Accessible Transportation Technologies Research Initiative (ATTRI)

Inadequate transportation and lack of accessible mobility options can make it extremely difficult for some individuals to complete important tasks. However, utilization of the latest technology and increased access to information can lead to integrated solutions that advance accessible transportation alternatives. Accessible Transportation Technologies Research Initiative (ATTRI) encourage the research, development, and implementation of solutions, applications, and systems that address universal mobility needs (IdeaScale, 2016).

ATTRI is being conducted in three phases that span over a total of six years. During each phase, a number of activities are conducted to solicit feedback from stakeholders regarding user needs and barriers to mobility. In May 2016, the U.S. DOT published the "User Needs Assessment: Stakeholder Engagement Report," ending the first phase of the ATTRI program. In this report, the U.S. DOT identified five technology focus areas as having significant potential to address many of the user needs and barriers to mobility mentioned by various stakeholders. Furthermore, these five technology focus areas will continue to be explored and prototyped as part of the second phase of ATTRI. The five technology focus areas include: Wayfinding and Navigational Solutions, Assistive Technologies, Automation and Robotics, Data Integration, and Enhanced Human-Services Transportation (U.S. Department of Transportation).

Wayfinding and navigational solutions seek to explore and develop systems, equipment, and technologies that can assist with waypoint navigation, path planning, and advanced warning of events. Such solutions have the ability to increase awareness and provide further assistance with navigation and obstacle avoidance for older adults, persons with disabilities, and veterans with disabilities.

Assistive technologies are the second technology focus area and they aim to provide accessible transportation through the combination of traditional devices and newer nomadic devices. Nomadic devices include wearable technology that can be integrated with vehicles, infrastructure, and pedestrians to further provide connectivity throughout an entire trip.

The third technology area is automation and robotics technology, which has grown in recent years, most notably with the research and development of autopilot functions and autonomous vehicles. Vehicle automation has the potential to solve first-mile/last-mile connectivity issues and better connect commuters to transportation hubs. Also, the use of robotic technology is being viewed as having the ability to assist commuters with their travel plans and decision making.

Data integration is the fourth technology focus area and it involves collecting and sharing information that travelers with disabilities both need and can provide. Collecting and sharing this information can improve transportation planning by identifying specific route information and ensuring that service providers are prepared for necessary accommodations.

The final focus area identified by ATTRI's extensive stakeholder outreach is enhancing human-service transportation. Human-service transportation technology focuses on applications that help travelers make decisions and identify the accessible transportation solutions that best meet their needs. Applications that enhance human-service transportation can include integrated payment systems, online trip planning, and those that link paratransit, demand-response, and fixed-route transit (U.S. Department of Transportation).

Applicability in Delaware

Fee-based co-ops and partnerships not already employed in Delaware can assist in addressing service delivery inefficiencies and improving mobility options. For example, MOD Sandbox Demonstration Projects can encourage better coordination among existing public-transportation providers—DTC, nonprofits, and healthcare organizations—particularly for NEMT services. Rides to Wellness-type programs promote collaboration among transportation and healthcare providers to minimize barriers to treatments and important preventative health screenings. Recognition and expansion of collaborative initiatives among organizations in Delaware are important components to updating the state's coordinated plan for specialized transportation and mobility and better positioning the state to be eligible for programming funding. This was realized in the summer of 2016, when DTC, IPA, the Modern Maturity Senior Center, and Via Technologies, Inc., submitted a proposal to pilot a "Wellness on Wheels" NEMT program in the Dover area. While several key stakeholders and service providers supported this initiative, Delaware's lack of an updated coordinated plan put the proposal at a distinct competitive disadvantage.

Enhance Coordination

Other examples of mobility coordination involve data sharing, centralized computer-assisted dispatching, and use of mobile data terminals. The Paducah Area Transit System, in cooperation

with three other rural travel providers, opened the Paducah Area Regional Transit Travel Management Coordination Center. This center enables the four agencies to offer integrated and seamless transportation services for residents in the surrounding rural counties (Bregman, 2010). The center also allows for reservations to be made online or by telephone. Similar cooperation among service providers within the state of Delaware could provide useful for coordinating trips and reducing inefficiencies. The research team is also aware of a grant that has recently become available to existing transportation partnerships under the FAST Act. Recent program additions to this act include a Pilot Program for Innovative Coordinated Access and Mobility, which distributes funding for innovative projects that improve the coordination of transportation services with NEMT services (Federal Highway Administration). Current partnerships within the state of Delaware could begin to identify effective coordination efforts and apply for this grant during the next round.

Valley Metro is another example of effective regional coordination efforts. Valley Metro's central mission is to establish a network of transportation services, which include bus/light rail, neighborhood circulators, dial-a-ride, and car and vanpooling. Valley Metro has also adopted a five-year strategic plan that includes a strategic assessment, data-oriented comparison with peer agencies, and best-practice research from the public transportation industry (Valley Metro, 2015).

Applicability in Delaware

As the state of Delaware's population and the need to meet mobility objectives continues to grow, increasing demand will be placed on existing public-transit systems. This means that current systems must expand their service area, increase service frequency, and improve efficiencies to meet the demands of the population and continue to provide effective and efficient transportation. A similar partnership among service providers within the state could provide useful for coordinating trips and reducing inefficiencies. Establishing a similar network within Delaware could be beneficial to coordinate multi-modal transportation options for commuters, seniors, and persons with disabilities.

Link Land-Use and Transportation Planning

Transit-friendly land-use patterns and development practices should be evaluated to advance a fully integrated transportation system—one that integrates transit with the planning and design of transportation facilities. Planning for TOD and TRD should be considered, and/or incentivized, to encourage a diversity of mutually supporting land uses and circulation systems, provide a strong network of multi-modal connections, and improve access to destinations of daily living. A combination of TOD- and TRD-friendly tools should be considered, including strategies such as land assembly; zoning changes that support a vibrant, mixed-use

environment with higher density; overlay zoning that may provide greater development incentives or design flexibility; financing; and public–private partnerships (PPPs).

In Washington, for example, the Puget Sound Regional Council has created the Growing Transit Communities Strategy that has successfully integrated its transportation plans with those of land-use and economic development strategies. This regional coalition of businesses, developers, local governments, transit agencies, and nonprofit organizations have worked together to promote high-quality development around the region's $25 billion investment in transit (light rail, bus rapid transit, express bus, streetcar, and commuter rail) that promotes community involvement and benefits all residents in the surrounding area. Beyond building transportation infrastructure, the community envisioned the investment as an opportunity for additional housing, jobs, and services to be located near transit (Puget Sound Regional Council, 2013).

Applicability in Delaware

In Delaware, several initiatives are underway to provide incentives for and/or direct development to areas that have existing infrastructure and are targeted for state investment. For example, the Downtown Development Districts Act was created in 2014 to leverage state resources in a limited number of designated areas in Delaware's cities and towns to spur private capital investment, improve vitality of downtown areas, and build community stability. In 2016, the Healthy and Transit-Friendly Development Act was passed in Delaware to pioneer a new partnership approach for developing "complete communities," or compact, walkable, transit-accessible, and mixed-use neighborhoods (Transportation for America, 2016). This legislation will enable local governments to enter into agreements with DelDOT to create transportation-friendly areas and establish regulatory tools to foster "transportation hubs" as centers of economy, housing, and services. Moving forward, the continued collaboration among a wide spectrum of public, private, and nonprofit agencies and organizations will be needed to develop a vision for transit-friendly land-use patterns and development practices.

Link Shared-Use Mobility to Public Transit

Linking shared-use mobility, such as private rideshare options, to public transit could play an important role in addressing first- and last-mile connectivity issues. For example, in Pennsylvania, the private rideshare provider Uber partnered with SEPTA, to increase access to the existing public-transit system. As part of this partnership, Uber discounted trips to and from 11 suburban regional rail stations; stations were selected base on ridership demand and parking availability. The pilot program was part of an ongoing study conducted by SEPTA to assess the impact of ridesharing services on the provision of public transit (Southeastern Pennsylvania Transportation Authority, 2016).

Applicability in Delaware

Delaware could benefit from private ridesharing partnerships as one solution to addressing the state's first- and last-mile issues. Limitations to current ridesharing options present challenges and may restrict services to resort communities and more densely populated areas of the state.

Improve Mobility Infrastructure

Investments in transportation-related infrastructure increase mobility and access to essential services. Infrastructure improvements are paramount to facilitating easy, safe, and efficient access to current transit systems.

In Los Angeles, California, the Southern California Association of Governments (SCAG) has created First/Last Mile Strategic Plan & Planning Guidelines. The planning guide outlines specific strategies designed to coordinate infrastructure investments in station areas and to facilitate efficient access to the Metro system, with a goal of extending the reach of transit and increasing ridership. Within the strategic plan, the SCAG also mentions the concept of "The Pathway," which is a proposed county-wide, transit access network design to reduce the distance and time it takes people to travel. Planning for "The Pathway," starts with evaluating each station area and its characteristics, accessibility, and possible "Pathway" networks that could improve mobility. The Pathway aims to overcome critical access barriers through flexible deployment of infrastructure, such as crossing enhancements and connections, signage and wayfinding, bicycle racks and transit station lockers, and plug-in components (e.g., carshare, bikeshare, and feeder services) (Los Angeles County Metropolitan Transportation Authority & Southern California Association of Governments, 2014).

Applicability in Delaware

The state of Delaware should consider working on a first/last mile strategic plan that outlines a step-by-step process for evaluating current access to services and potential improvements that could be made to increase access to existing services. Furthermore, the PDF published by the SCAG does a great job of explaining the step-by-step process that could be taken. Delaware should also consider working with diverse stakeholders on the development of a state-specific toolbox that includes first- and last-mile connectivity strategies. This toolbox could include specific strategies for each county that help to build a larger ecosystem that increases the accessibility of transit and helps build upon infrastructure investments over time.

Pilot Expansion of DART's RideShare Program

DART's RideShare Delaware is a service of DART First State dedicated to aiding commuters with finding and using alternative modes of transportation. The RideShare program provides a

Guaranteed Ride Home (GRH) benefit, which is available to registered commuters actively ridesharing to work (DART First State). Recently, program coordinators have explored ways to coordinate existing transportation services and expand Delaware's RideShare program to serve senior citizens and persons with disabilities.

Facilitation of Stakeholder Engagement and Outreach on Mobility Coordination

To further assess the overall "state of mobility management" in Delaware, information was obtained on various human-service transportation provision and provider organizations through survey research and outreach. This phase of work involved preparing and administering surveys of Section 5310 program transportation providers and general specialized-transportation stakeholders in Delaware. Between January and May 2016, IPA worked with identified stakeholders and key transportation service providers throughout Delaware to conduct three county-based workshops. Survey outcomes provided the basis of discussion and engagement of stakeholders during each workshop.

Project work and stakeholder engagement efforts culminated with an October 18, 2016, statewide mobility coordination forum. The event convened many of the county-specific workshop attendees and other stakeholders, who came together to share information about the workshops, identify common themes, highlight mobility- and transportation-related issues such as land use and connectivity, and build consensus on "next steps" for expanding current partnerships, engaging stakeholders, and developing a strategic plan for Delaware.

Stakeholder Surveys

In addition to conducting research on national best practices and innovative service delivery models, IPA, in collaboration with DTC staff, developed stakeholder surveys. The primary purpose of conducting stakeholder surveys was to better understand the nature of specialized transportation services in Delaware, focusing on organizations that provide services for seniors, individuals with disabilities, and transportation-disadvantaged populations. Additionally, the research team wanted to gauge these organizations' interests in coordinating mobility services to address unmet transportation needs or gaps, eliminate service duplication, and improve inefficiencies.

Survey results were used to help generate discussions at a series of county-based working group meetings and report outcomes to planners and program directors at DelDOT and DTC.

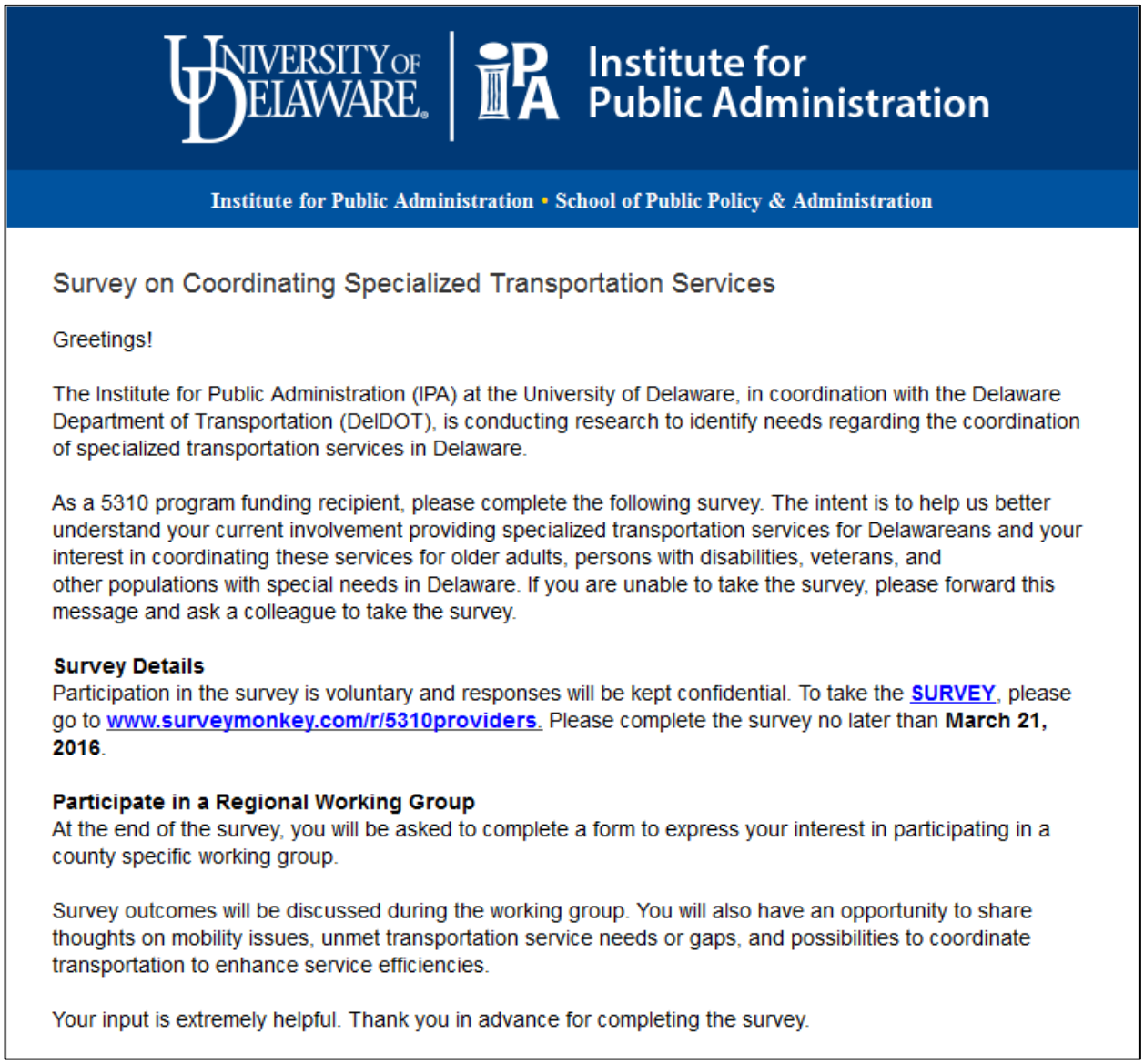
Methodology

IPA's research team drafted two survey protocols with similar content to target (1) subrecipient organizations/agencies in Delaware that receive Section 5310 funding to provide specialized transportation services to older adults and persons with disabilities and (2) other nonprofit organizations, advocacy groups, or entities in Delaware that do not receive Section 5310

funding, but transport older adults, veterans, person with disabilities, and/or other special needs populations (referenced hereafter as "general providers").

Using the online software tool SurveyMonkey, two surveys were generated that included "informed-consent agreements," along with ten questions of varied formats (e.g., open-ended questions, rank ordering, yes/no responses). The electronic survey was distributed through the email marketing platform MailChimp. Email addresses were obtained from DTC, other state agencies, and online resources.

Figure 13. Survey of Section 5310 Transportation Providers



UNIVERSITY OF DELAWARE | IPA Institute for Public Administration

Institute for Public Administration • School of Public Policy & Administration

Survey on Coordinating Specialized Transportation Services

Greetings!

The Institute for Public Administration (IPA) at the University of Delaware, in coordination with the Delaware Department of Transportation (DelDOT), is conducting research to identify needs regarding the coordination of specialized transportation services in Delaware.

As a 5310 program funding recipient, please complete the following survey. The intent is to help us better understand your current involvement providing specialized transportation services for Delawareans and your interest in coordinating these services for older adults, persons with disabilities, veterans, and other populations with special needs in Delaware. If you are unable to take the survey, please forward this message and ask a colleague to take the survey.

Survey Details
Participation in the survey is voluntary and responses will be kept confidential. To take the **SURVEY**, please go to **www.surveymonkey.com/r/5310providers**. Please complete the survey no later than **March 21, 2016**.

Participate in a Regional Working Group
At the end of the survey, you will be asked to complete a form to express your interest in participating in a county specific working group.

Survey outcomes will be discussed during the working group. You will also have an opportunity to share thoughts on mobility issues, unmet transportation service needs or gaps, and possibilities to coordinate transportation to enhance service efficiencies.

Your input is extremely helpful. Thank you in advance for completing the survey.

Survey Questions

	5310 Provider Survey	General Provider Survey
1	To which of these target population(s) does your organization provide services? Check all that apply.	Please read the following statements and check all response(s) that describe your role in providing/coordinating specialized transportation services.
2	The organization that you represent is a:	That organization that you represent is a:
3	Please provide the jurisdiction in which your organization(s) is located:	Please provide the jurisdiction in which your organization(s) is located:
4	Please rank the following in order of the most frequent destinations of your trips.	Please rank the following in order of the most frequent destinations of your trips.
5	Please select the best answer to the following statement: On average, vehicles traveling to/from destinations are filled to capacity.	Please select the best answer to the following statement: On average, vehicles traveling to/from destinations are filled to capacity.
6	In addition to specialized transportation services provided or coordinate by your organization under the 5310 program, do members utilize other transportation services on a routine basis?	In addition to specialized transportation services offered or coordinated by your organization, do members utilize other transportation services on a routine basis?
7	Do you currently coordinate any aspects of your transportation services with other organizations, providers, or nearby 5310 program recipients?	Do you currently coordinate any aspects of your transportation services with other organizations, or specialized transportation providers?
8	Please select the best answer to the following statement: There is a need to coordinate specialized transportation services in Delaware to maximize mobility, address unmet transportation needs of clients, and improve service gaps.	Please select the best answer to the following statement: There is a need to coordinate specialized transportation services in Delaware to maximize mobility, address unmet transportation needs of clients, and improve service gaps.
9	Rank what you believe is the most important priority in terms of improving specialized transportation services for your organization.	Rank what you believe is the most important priority in terms of improving specialized transportation services for your organization.
10	Would a representative from your organization be willing to participate in a county-specific, mobility coordination working group?	Would a representative from your organization be willing to participate in a county-specific, mobility coordination working group?

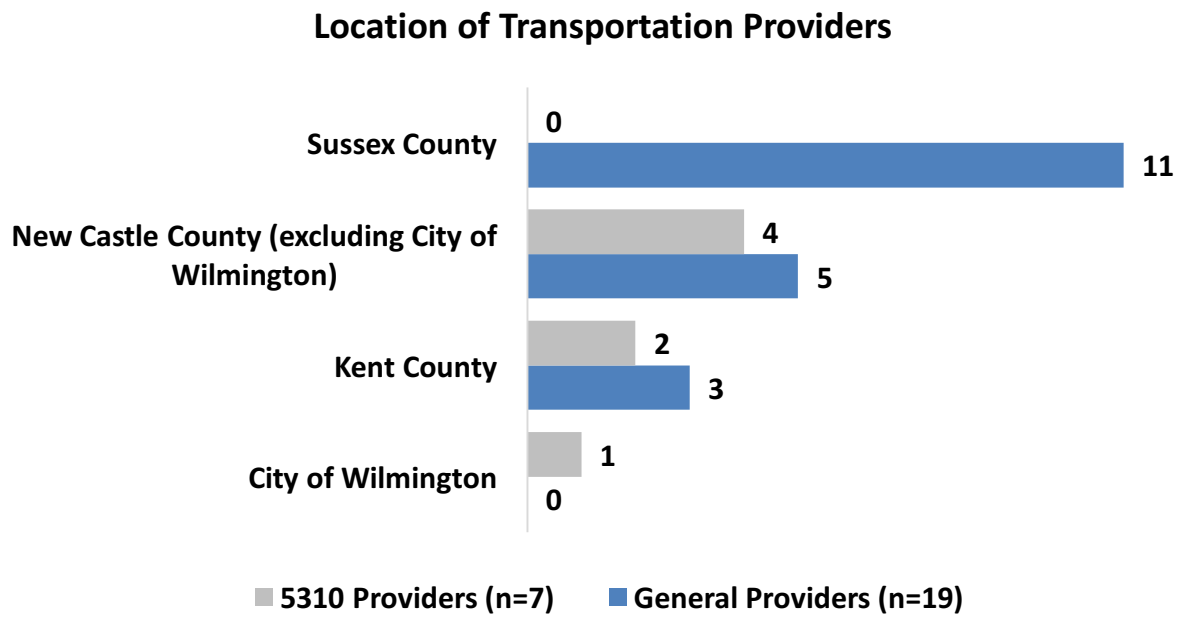
Outcomes

Survey responses helped identify (1) agency and provider roles involved in specialized transportation services and (2) interests in coordinating specialized-transportation services for seniors, individuals with disabilities, veterans, and other special-needs populations in Delaware. Survey topic areas and responses are described below.

Location of Transportation Providers

Due to geographic and demographics differences among the state's primary jurisdictions, survey respondents were asked to report on the location of their organizations: New Castle County, Kent County, Sussex County, or the City of Wilmington.

Figure 14. Graph illustrating Location of 5310 and General Transportation Providers within the State of Delaware

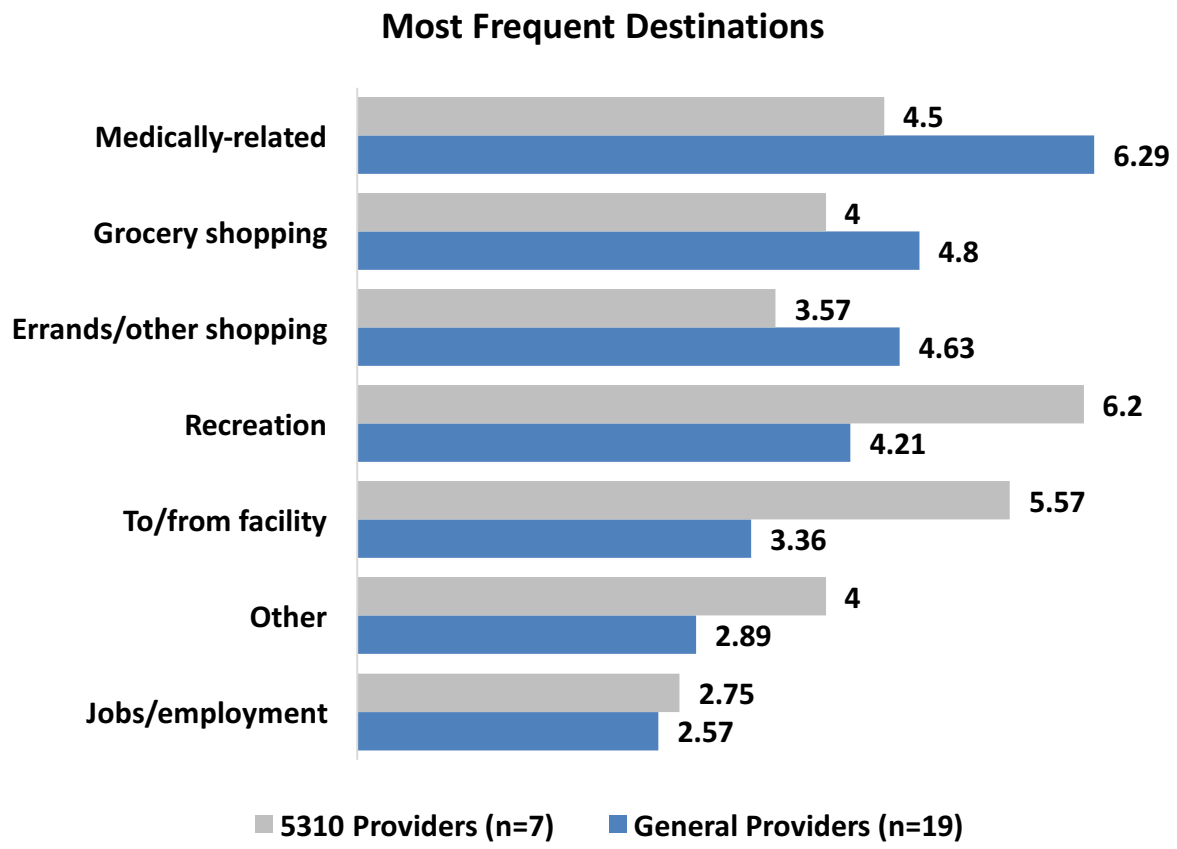


As shown in Figure 14, a majority of general providers indicated that their organization is located in Sussex County, followed by New Castle and Kent Counties, respectively. In contrast, the majority of 5310 respondents indicated they were located in New Castle County, followed by Kent County and the City of Wilmington. Service area information was not collected, but will be an important component to future research and inventory updates.

Destination Frequencies

Destination frequencies are important in understanding why transportation services are requested and can, therefore, help service providers coordinate trips and reduce inefficiencies.

Figure 15. Graph Showing the Most Frequent Destinations for 5310 and General Transportation Providers



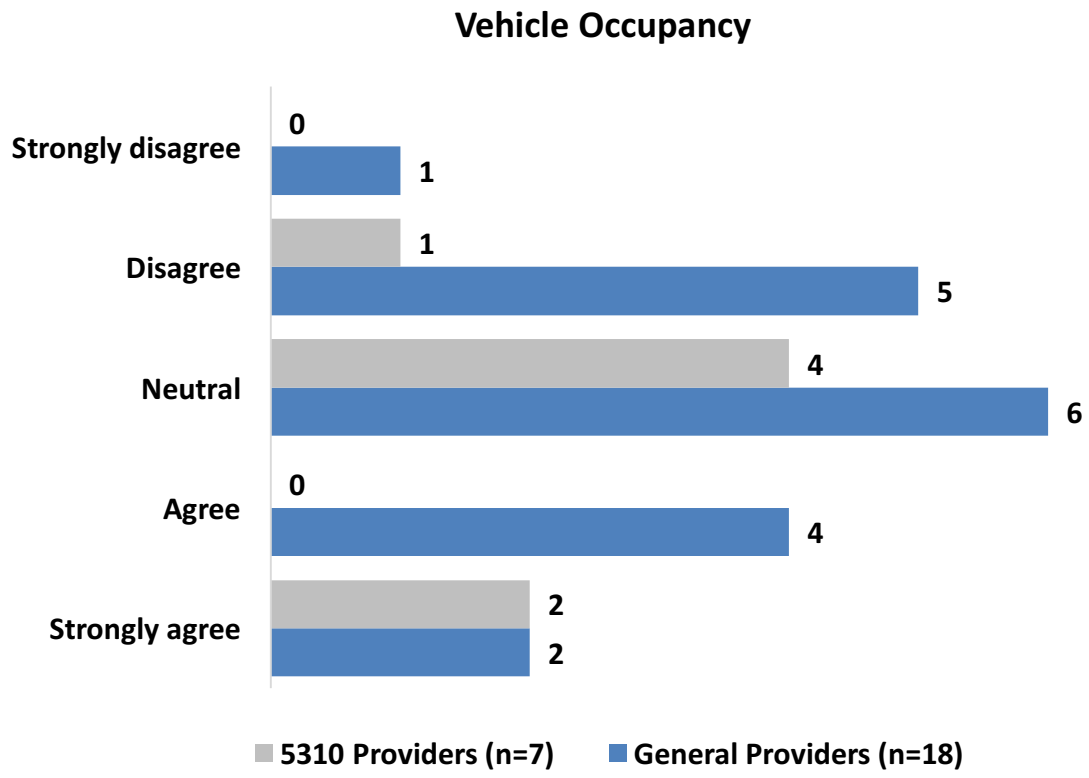
As noted in Figure 15, the most frequently traveled destinations reported were for recreation (that included social activities such as going to the movies); grocery shopping; errand/other shopping; medically related; to/from the facility; jobs/employment; and "other."

General providers indicated that their most frequent trips were medically related, followed by trips for grocery shopping, and errands/other shopping. For 5310 providers, the most frequent destinations reported were recreational in nature, followed by trips made to/from the provider facility, and medically related trips.

Vehicle Occupancy

To help identify efficiencies in service delivery and utilization of other transportation services, survey participants were asked about vehicle occupancy during trips.

Figure 16. Graph Showing Responses of 5310 and General Transportation Providers When Asked to Respond to the Statement, *"On average, vehicles traveling to/from destinations are filled to capacity."*

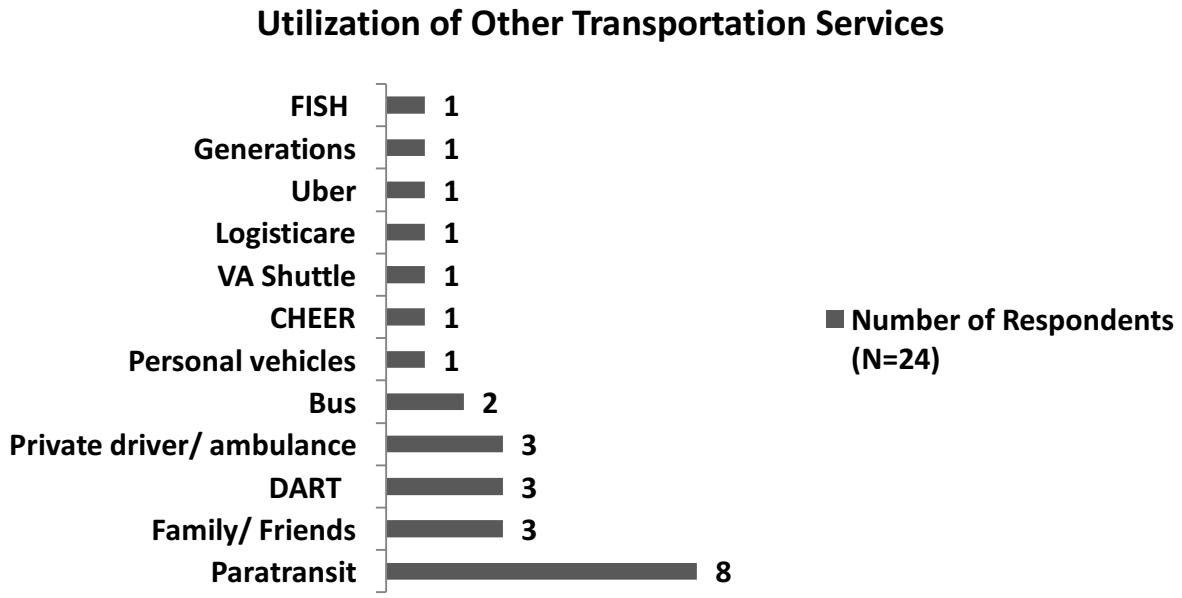


As shown in Figure 16, general providers mostly disagreed or were neutral about the statement that their vehicles traveling to/from destinations were filled to capacity. In contrast, 5310 providers were predominantly neutral about the statement.

Utilization of Other Transportation Services

In terms of survey participants' responses regarding other transportation services utilized by members/riders, paratransit was the service reported to be most routinely utilized, followed by family and friends, DART, and private drivers/ambulances.

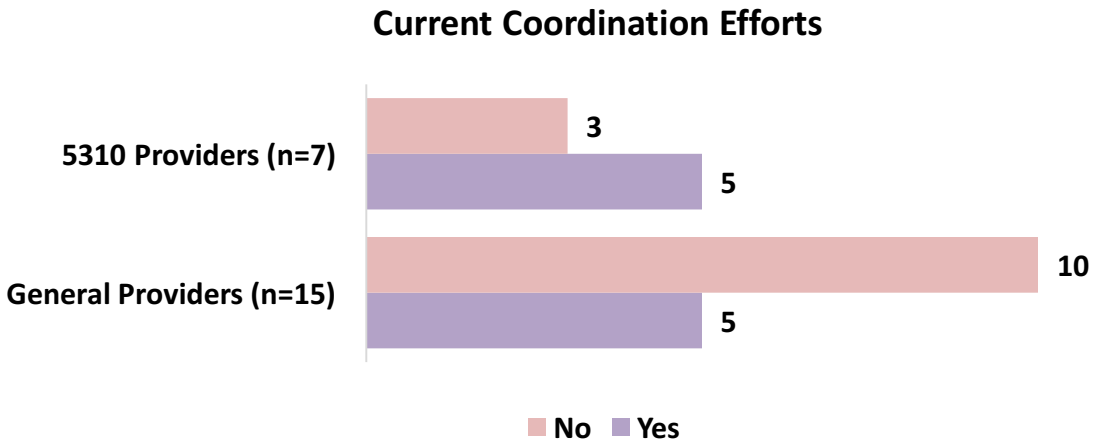
Figure 17. Graph Illustrating Riders' Utilization of Other Transportation Services



Current Coordination Efforts

To better understand coordination efforts among transportation service providers in Delaware, survey participants were asked to report on current activities with other agencies or specialized transportation providers and perceived barriers preventing shared service-delivery arrangements.

Figure 18. Graph Illustrating Coordination Efforts with Other Agencies, Providers, or Nearby 5310 Program Recipients

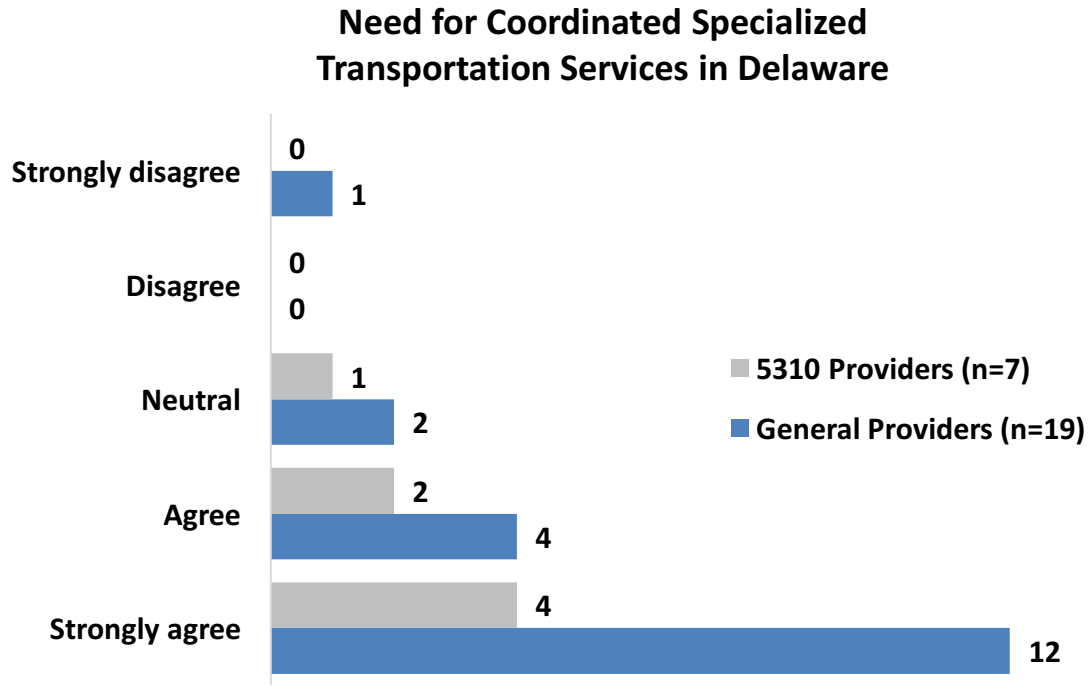


As illustrated in Figure 18, the majority of general service provider respondents indicated they coordinated some efforts of their services. Consistent with updated federal 5310 program goals, Delaware's program recipients should be guided on opportunities and obligations to partner with other program affiliates.

Need for Coordinated Specialized Transportation Services

To further gauge the needs and interests in coordinating transportation services, participants were asked to respond to the statement, "There is a need to coordinate specialized transportation services in Delaware, to maximize mobility, address unmet transportation needs of clients, and improve service gaps."

Figure 19. Graph Illustrating Responses to the Statement: "There is a need to coordinate specialized transportation services in Delaware to maximize mobility, address unmet transportation needs of clients, and improve service gaps."

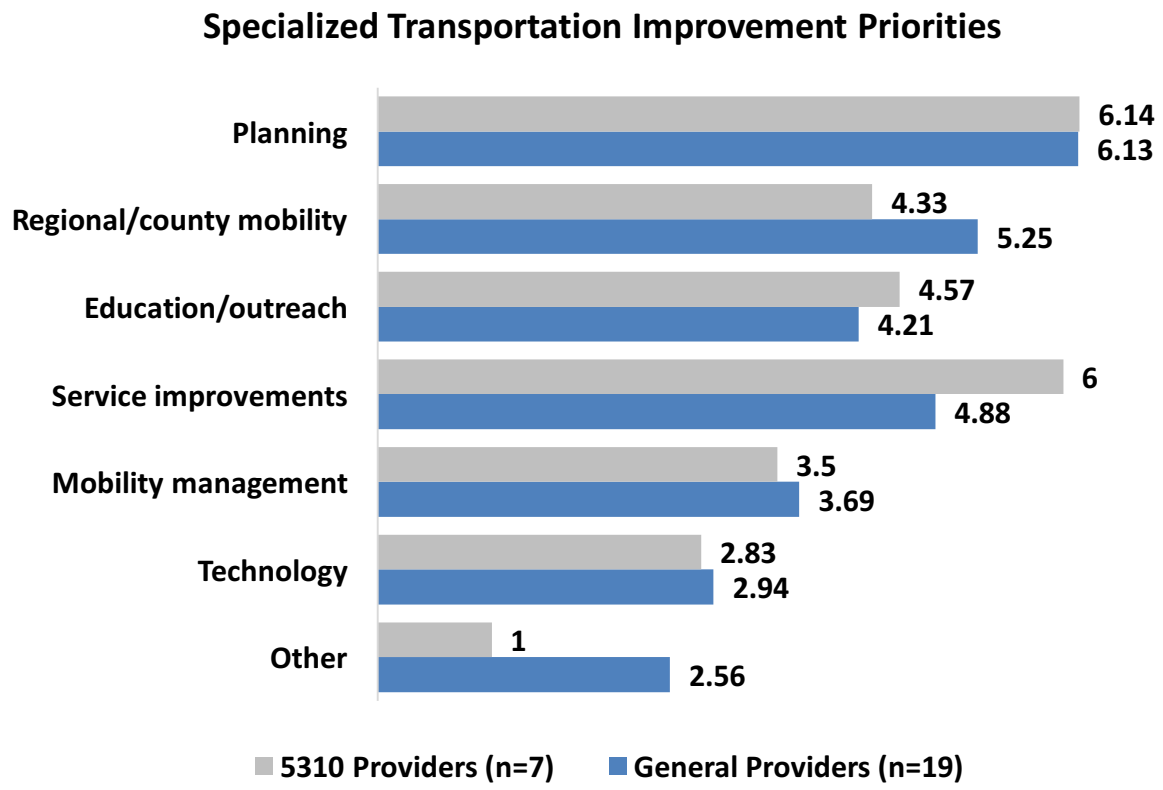


As shown in Figure 19, a majority of both general and 5310 providers agreed with the statement. While current efforts vary among providers, there is consensus on the need for more specialized transportation coordination.

Priorities in Improving Specialized Transportation Services

Based on IPA's best-practice research and information obtained prior to survey facilitation, participants were asked to review and priority rank a list of potential areas of improvement for specialized transportation services in Delaware.

Figure 20. Graph Illustrating Rankings of Transportation Improvement Priorities



As indicated in the Figure 20, general providers ranked *planning* as the highest priority, followed by *regional/county mobility coordination* and *service improvements*. Similarly, 5310 providers ranked *planning* as the highest priority, followed by *service improvements* and *education/outreach*.

Regional Workshops

Purpose

The purpose of the three county-based workshops was to collectively engage Delaware's transportation service providers and related stakeholders in a participatory planning process to help define state's future mobility coordination goals. Participants from each county were asked to identify ongoing challenges in their jurisdictions and discuss opportunities to

collaboratively address those challenges. Another primary goal of the workshops was to identify successful initiatives, partnerships, and programs already underway that could be expanded and/or replicated in other areas of the state.

Information obtained from the three workshops was used to identify common themes and unique transportation coordination issues within each county. The information was used to develop a statewide policy forum agenda.

Outreach

Specialized transportation service professionals and those representing organizations that receive federal 5310 funding for vehicles to support human-services-related trips were invited to one or more of the county workshops. Email contacts were obtained from DTC, other state agencies, and online resources that were obtained by IPA through its research process.

Based on availability, interest, and location of organizations, individuals were invited to attend at least one of the workshops held between April and June of 2016. Based on DART's statewide service range and public transportation oversight, agency staff attended all three workshops.

Outcomes

The first regional workshop took place on April 21, 2016, at the Newark Senior Center. Approximately ten people attended the event, with representatives from various organizations, including Military Order of the Purple Heart, Mary Campbell Center, and the Newark Senior Center. Notes from the New Castle County workshop can be found in Appendix E.

The second regional workshop took place in Sussex County and was held on April 25, 2016, at the CHEER Community Center, which is located near Georgetown. Approximately 12 participants attended the workshop, including representatives of the Milford Senior Center, Sussex County Planning & Zoning Office, and CHEER. Notes from the Sussex County workshop can be found in Appendix G.

The third and final regional county workshop took place on May 2, 2016, at the Modern Maturity Center (MMC). The workshop drew 11 participants, with representatives from LogistiCare, Dover/Kent County Metropolitan Planning Organization, and MMC. Notes from the Kent County workshop can be found in Appendix F. The PowerPoint presentation used in the county-based workshop meetings can be found in Appendix B.

Each workshop began with introductions and a brief IPA presentation on mobility management and specialized transportation services in Delaware. Workshop participants were asked to take

part in reviewing a list of identified ongoing specialized transportation issues in their respective jurisdictions and throughout Delaware. From the list, participants identified the issue(s) that they believed to be the greatest challenge in Delaware. Options included:

- Coordination challenges among service providers.
- Demand drivers of specialized transportation (e.g., changing demographics and locations of facilities and housing).
- Specialized transportation efficiency issues.
- Unmet needs and gaps in service delivery.
- Lack of information sharing among providers.
- Other challenges or issues.

Results of the exercise were similar across the three workshop groups. As seen in Figure 21, participants in the Sussex and Kent County workshops ranked "coordination challenges among service providers" as the top challenge, while New Castle County workshop participants ranked "'demand drivers' of specialized transportation" as the greatest specialized transportation challenges with coordination issues reported as their second challenge.

Figure 21. Greatest Specialized Transportation Challenges in Delaware, Ranked by County Workshop Participants

Rank	New Castle County	Sussex County	Kent County
1	"Demand Drivers" of Specialized Transportation	Coordination Challenges among Service Providers	Coordination Challenges among Service Providers
2	Coordination Challenges among Service Providers	"Demand Drivers" of Specialized Transportation	Unmet Needs and Gaps in Service Delivery
3	Unmet Needs and Gaps in Service Delivery	Specialized Transportation Efficiency Issues	Specialized Transportation Efficiency Issues

Common Themes

Several common themes were identified in the workshop summaries. These included a(n)

- Need for improved information management and dispersal among current providers;
- Agreement that a "one-size-fits-all," statewide mobility coordination solution is unrealistic and inappropriate; and

- Desire for organized transportation "hubs" with "feeder" systems designed to help fill service gaps in more rural, less densely populated areas while better utilizing vehicles and current systems.

The need for a more accurate and up-to-date resource with current information and options regarding all specialized transportation options in Delaware was discussed during all three workshops. Participants mentioned "resource page," "one-click/one-call" trip planning system, and "one-stop-shop" travel information portal in describing the necessity for a more comprehensive source. Many reported having not heard of a particular service or program before attending the workshop(s) and that the information would be valuable for their members or customers.

With regard to improving the state's specialized transportation coordination efforts, attendees were in general agreement that each area of the state not only represents a unique population, but also faces distinctive transportation challenges and issues. For example, NCC service providers confront high demands for transportation services among a large and diverse senior population. Sussex and Kent Counties, on the other hand, are experiencing a growing percentage of older adults located in sprawling areas that are often underserved by traditional fixed-route services. Therefore, paratransit trips requests in these areas are relatively high but typically outside the federal guidelines of being within ¾-mile of a fixed-route bus stop. Discussions about whether newly developed pilot programs, such as DART's Flex service and iTN*SouthernDelaware's* volunteer network, might be better connected to formulate local "feeder networks" were noted as positive and possible opportunities to bridge gaps among providers and their services in these areas. Such networks might include senior centers and other 5310 vehicle recipients, healthcare providers, DART, and other niche transportation services that have been recently implemented.

Suggested Solutions

The following table summarizes suggested solutions for improving specialized transportation services throughout Delaware. For additional information about these suggestions, more detailed county workshop outcomes, please see Appendices E–G.

Figure 22. Suggested Solutions for Improving Specialized Transportation

New Castle County	Kent County	Sussex County
• Expand Partnerships with DART • Senior Centers as Specialized Transport Hubs • Non-Essential Paratransit Trips in Off-Peak Hours • Advance Telemedicine • Explore Uber Partnerships (e.g., senior rides) • Expand RideShare Delaware	• Explore Public Carrier Law Changes • 5310 Fund Purchase of Accessible Vehicles • Expansion of DART Flex Service and Routes	• Develop Information Portal • Create One-Call, One-Click Center • Use Flex as Backbone for Specialized Transportation • Consider FTA Pilot Programs • Communicate and Coordinate Planning (counties, states) • Consider Future Demand Drivers

Statewide Mobility Coordination Forum

Purpose

The purpose of the statewide mobility coordination forum was to discuss IPA's current research and work with DTC, share county workshop discussions and themes, and identify potential next steps of a strategic planning process for improving specialized transportation and mobility coordination in Delaware. This process would involve a solutions-oriented approach that engages a diverse set of stakeholders willing to explore partnerships and innovative opportunities to improve mobility for all Delawareans—especially those who are transportation disadvantaged.

Outreach

As with the county-based workshops, invitations to the statewide forum were sent electronically through MailChimp. All survey participants and workshop attendees were invited to attend, along with all 5310 federal funding recipients and human-services organizations for which contact information was available. A recommendation to require all 5310 applicants and recipients to provide email contact information is included in the Final Recommendations and Path Forward section of this report.

Outcomes

The forum took place on October 18, 2016, at the Dover Public Library. With 44 stakeholders attending and representing a wide array of organizations, the IPA-facilitated forum was rich in presentation and discussion.

IPA staff began the forum with a presentation on the county-based workshop outcomes and provided an overview of the identified common themes and unique challenges raised during the meetings. Also highlighted was the identified need among many workshop participants to build consensus on a strategic path forward by expanding current partnerships, creating new pilot programs, and updating the state's current mobility coordination plan.

As part of its discussion on Delaware's current mobility landscape, IPA staff also presented information on the location of the state's existing and planned "age-restricted" retirement communities (also referred to as "active adult, 55+, or 62+, and independent living communities), and shared preliminary maps that illustrate mixed-use manufactured home communities in Sussex County located in flood-prone areas and/or state strategy levels—areas not designated for state investments in infrastructure and services (e.g., fixed-route transit, paratransit). Research on and examples of best practices for mobility management and coordination as well the federal government's current transportation policy and funding priorities were also outlined.

Speakers and panel participants focused on community facility locations, accessibility and mobility issues among the state's transportation disadvantaged, best-practice programs in Delaware, and county/regional planning for transit-oriented communities and transportation-disadvantaged populations. The following excerpts highlight the major ideas of each presentation or panel. The forum summary can be found in Appendix H and the PowerPoint presentation in Appendix C.

Transportation Costs of Community Facility Locations – Troy Mix, AICP, IPA Policy Scientist

- Paratransit service costs and demand are rising, and lower-density land-use development is exasperating the issue.
- Facilities tend to be more centrally located and in more populated areas, whereas residences are more dispersed among suburban or rural areas.
- In October 2014, there were 88,907 one-way trips (i.e., doctors' offices to homes).
- Out of those one-way trips, 6,110 were to unique pick-up and drop-off sites,
- Furthermore, 150 (or 2%) of these sites accounted for 35,953 of these trips (or 40%).

2015 Accessibility and Mobility Report: Transportation Justice Study – Bill Swiatek, AICP, Senior Planner, WILMAPCO

- Persons with disabilities accounted for over half of the sampled population that expressed difficulty accessing services like grocery shopping, social activities, medical care, or other services.
- Lack of a personal vehicle accounted for about 10 percent of the sampled population that expressed difficulty accessing services like grocery shopping, social activities, medical care, or other services.
- Seniors accounted for over half of the sampled population that expressed difficulty accessing services like grocery shopping, social activities, medical care, or other services.

Panel 1: Coordinating Specialized Transportation Services in Delaware: Best Practices and Potential Replicability

Facilitator: Julia O'Hanlon, Institute for Public Administration, University of Delaware

Panel Members: Kenneth S. Bock, Executive Director, CHEER; Peggy Markovitz, Contract Operations Manager, Delaware Transit Corporation; Maggie Ratnayake, Director, Brandywine Village Network; and Jackie Sullivan**,** Executive Director, Greater Lewes Community Village

Discussion points provided a/an:

- Overview of changing demographic landscape in Sussex County and how transportation providers in the county are addressing increasing demand.
- Description of benefits and results of DART's Flex service, which is currently available in Sussex County.
- Highlights of the success of the community-driven "Village Model," in Delaware, specifically the Brandywine Village Network and the Greater Lewes Village Network and addressing wheelchair accessibility issues.

Panel 2: County/Regional Planning for Transit-Oriented Communities and Transportation-Disadvantaged Populations

Facilitator: David L. Edgell, Principal Planner, Delaware Office of State Planning Coordination

Panel Members: Mary Ellen Gray, Assistant Director, Kent County Department of Planning Services, Division of Planning and James C. Smith, Jr., Esq., Assistant General Manager, New Castle County Department of Land Use

Discussion points focused on the need to:

- Address network connectivity from a land-use planning perspective in Kent and New Castle Counties through "growth zones," redevelopment, and encouraging transit infrastructure.
- Expand transit-supportive elements beyond available infrastructure and sewer capacity.
- Address complete streets barriers: cost, identification of roads, and long-range coordination with state transportation agencies.
- Encourage inclusive communities that are ADA accessible, aging-friendly, and transit supportive.

Polling of Service Providers and Stakeholders

To gain direct feedback from forum participants about moving the state's specialized transportation and mobility coordination agenda forward, the research team planned, organized, and facilitated an interactive polling session using the OMBEA Audience Response System (ARS). Participation in the ARS session was voluntary and IPA staff provided technical assistance in the use of the ARS hand-held clickers. While the poll was not scientific or representative of all stakeholders interested in Delaware's specialized transportation and mobility coordination efforts, several results are worthy of review and future investigation. Forum participants were asked a variety of questions on current initiatives and programs, potential replicability of best practices and pilot initiatives, and whether the 2007 Delaware Statewide Action Plan to Coordinate Human-Services Transportation should be updated.

Figure 23. Poll Reflects Consensus on the Need for an Updated Statewide Action (Coordinated) Plan

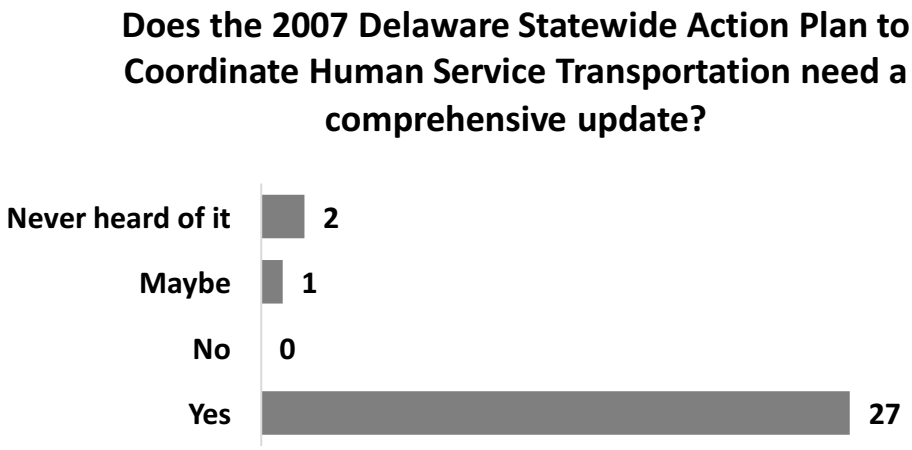
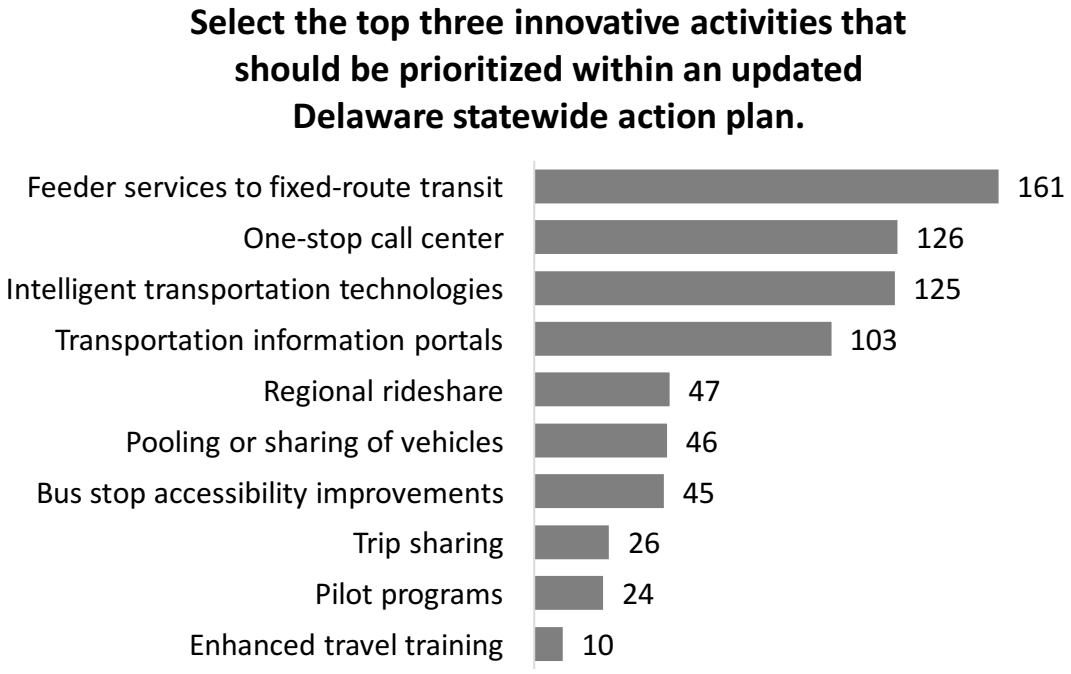
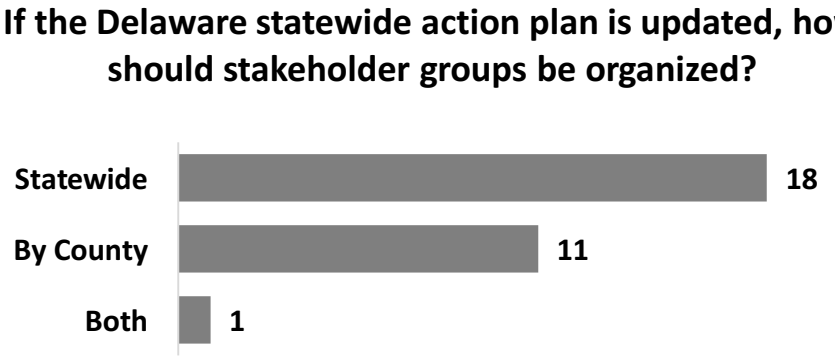


Figure 24. Poll Reveals Top Interests in Innovative Mobility Strategies in Delaware



Of the approximately 30 forum participants who participated in the polling session, a majority indicated that the Delaware Statewide Action Plan is in need of a comprehensive update (Figure 23). Given the federal government's current transportation and mobility coordination policy priorities, an update could make Delaware more competitive when applying for federal funding. Additionally, an updated plan would generate new state goals and objectives that align with services and initiatives already underway. Forum participants also ranked innovative activities that they believed should be prioritized within an updated plan. The highest-ranked activity was feeder services to fixed-route transit, followed by a one-stop call center, and intelligent transportation technologies (Figure 24).

Figure 25. Preference for Organizing a Statewide Stakeholder Group



When asked how stakeholder groups should be organized in updating the plan, a majority of participants (18) indicated that a statewide committee was needed, while 11 participants believed that county committees were needed (Figure 25). While there are benefits to either a top-down or bottom-up approach, it was recognized that there is a need to address the unique jurisdictional challenges for each county and align local objectives with statewide priorities.

Figure 26. Poll Indicates a Strong Interest in a Competitive Section 5310 Process

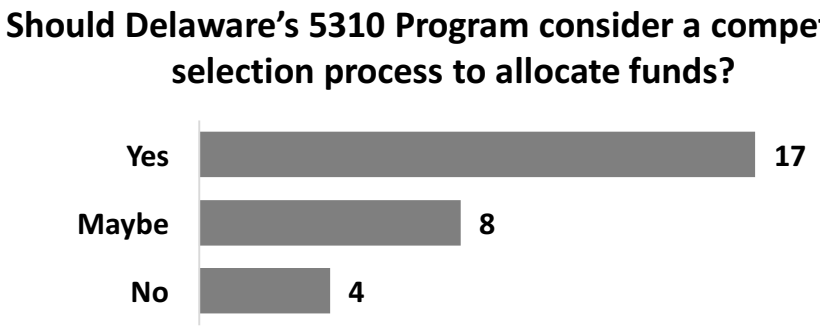
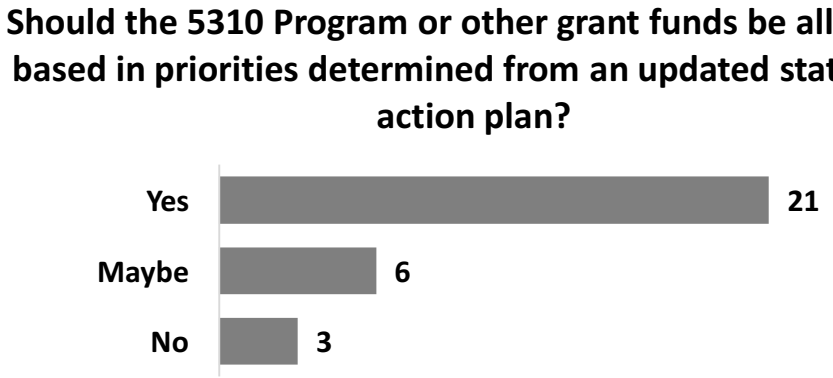


Figure 27. Poll Reveals a Strong Support for the Allocation of Section 5310 Funds Based on Priorities Determined from an Updated Statewide Action Plan Selection Process



A majority of forum participants supported the idea of a competitive application and allocation process for federal 5310 funding (Figures 26 and 27). A competitive process might encourage more innovative and coordinated services among transportation providers. Participants also indicated that the 5310 program and other grant funds should be allocated on the basis of priorities stipulated in an updated statewide action plan.

Figure 28. Poll Indicates a Preference to Expand Specialized Transportation Mobility Options in Delaware

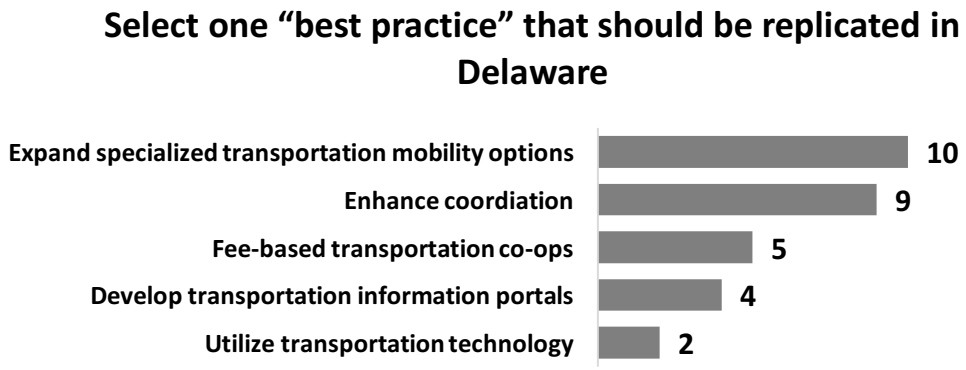
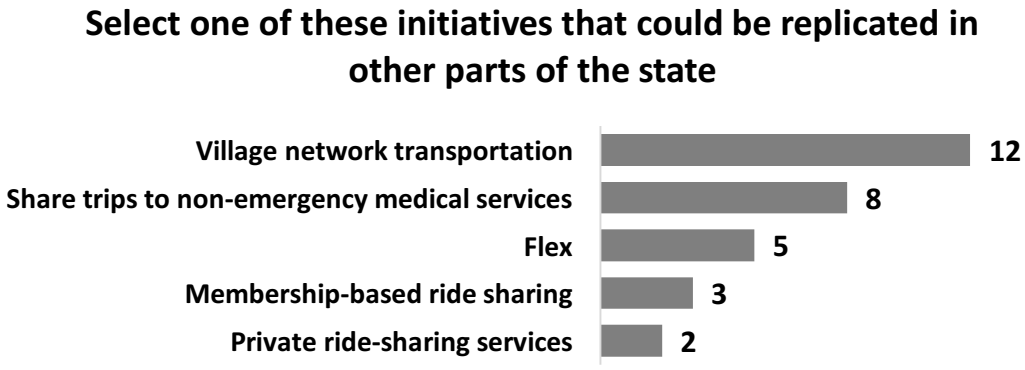


Figure 29. Poll Shows a Strong Interest in Village Network Transportation Followed by NEMT Partnerships



Of the best practices discussed during the forum, most participants selected *expanding specialized transportation mobility options* as the practice that should be replicated in Delaware (Figure 28). This involves identifying alternative specialized transportation options beyond paratransit and 5310-related services. The second most popular response was *enhanced coordination*. To address inefficiencies and duplication of services, coordination efforts would be organized among transportation providers, local governments, developers, businesses, and nonprofit organizations.

When asked to identify current Delaware initiatives that could be replicated in other parts of the state, most participants selected (1) *village network transportation* and (2*) partnerships to share trips to non-emergency medical services* (Figure 29).

Figure 30. Interest in Partnerships Ranks High

A final question posed to forum participants was "*Would your organization be interested in exploring partnership opportunities*?" As illustrated in Figure 30, a majority responded positively.

Final Recommendations and Path Forward

Outcomes of Phase I work identified several recurring themes and ongoing challenges with specialized transportation services in Delaware and suggested that a comprehensive strategy is needed to address the changing landscape of transportation coordination and mobility management. The following recommendations aim to support and advance initiatives currently underway by the Delaware Transit Corporation (DTC) to reduce cost pressures for all transit modes, address unrestricted use of paratransit services, and create alternative and affordable transportation options for all Delawareans and transportation-disadvantaged populations.

1. Update the Statewide Action Plan (i.e., coordinated plan)

Enacted on December 4, 2015, the FAST Act created a new federal transportation law that provides an increased emphasis on Coordinated Public Transit–Human-Services Transportation Plans. While Delaware's 2007 "Statewide Action Plan" has been incrementally revised by the DTC, with input from Elderly and Disabled Transit Advisory Committee (EDTAC), it has not been comprehensively updated in the past decade. It is critically important to maintain a current coordinated plan because it provides the foundation to allocate and better leverage federal funding under FTA's Section 5310 Coordinated Mobility program.

An updated Statewide Action Plan (i.e., coordinated plan) for Delaware should (1) provide a framework to improve coordination among transportation service providers and human-services agencies to enhance transportation services for all transportation-disadvantaged populations, (2) meet federal requirements for a "locally developed, coordinated human-services transportation plan," and (3) guide DTC's grant process, eligibility requirements, and the administration of its Section 5310 program. The program no longer focuses strictly on transportation needs of seniors and individuals with disabilities. Based on high-priority projects/programs identified in a coordinated plan, Section 5310 funding can now be directed to assist with costs for innovative mobility management activities, the purchase of capital equipment, and operations to meet the mobility needs of all transportation-disadvantaged populations. An updated plan also will better position DTC to compete for Section 3006(b) discretionary funding for Mobility on Demand, Rides to Wellness, and/or other innovative pilot programs that use technology to demonstrate mobility-on-demand solutions within a public transportation framework. To begin, IPA suggests:

- Reviewing current federal FAST Act requirements and reporting standards that guide the development of coordinated public transit–human-services transportation plans.

- Reviewing and assessing the current 2007 Statewide Action Plan to determine if Delaware-specific practices, policies, processes, and plan components meet new federal requirements.
- Garnering cabinet-level support for the planning process that will provide the political will to implement action items and move forward identified short- and long-range mobility efforts.
- Determining options to form committees (either by county and/or statewide) that meet federal law representation requirements to update the plan.
- Considering recommendations developed through the participatory planning process county/statewide committees and obtaining input through additional stakeholder outreach and engagement.
- Drafting an updated plan that is developed and approved through a participatory planning process that meets federal guidelines/requirements to (1) identify the transportation needs/gaps of transportation-disadvantaged populations, (2) provide strategies for meeting those needs, (3) strategically allocate resources—**through a competitive process**—to "high-priority" transportation services, projects, and programs under the Section 5310 Program, and (4) identify potential risks for further changes and funding decreases at the federal level that could diminish current services and programs in Delaware.

2. Realign Delaware's Section 5310 Program

Both MAP-21 (enacted in 2012) and the FAST Act (enacted December 4, 2015) made important changes to FTA's Section 5310 program by advancing a mobility management framework. MAP-21 required at least 55 percent of the Section 5310 program to be spent on capital public transportation projects that are planned, designed, and carried out to meet the special needs of seniors and individuals with disabilities when public transportation is insufficient, inappropriate, or unavailable. The FAST Act maintains the 55% allocation requirement for capital projects, which are referred to as "Section 5310 Traditional" projects. The other 45 percent may be used for "Non-Traditional" projects. Non-Traditional projects reflect "high-priority" transportation services, projects, and program strategies derived from a coordinated plan. These include capital and operating projects that (1) exceed the requirements of ADA, (2) improve access to fixed-route service and decrease reliance on complementary paratransit, and/or (3) expand specialized and affordable public transportation options, improve mobility infrastructure, and/or provide innovative technology (e.g., travel information portal/trip planning system). Under the FAST Act, states and local government entities operating public-transit services are now eligible to direct recipients of Section 5310 assistance. This could be used to support

innovative pilot programs in partnership with Section 5310 funding recipients. To proceed, IPA recommends:

- Reviewing and realigning Section 5310 program funding criteria to meet new federal mandates for allocating funding and conducting coordination activities.
- Assessing the need to revamp the Section 5310 program application process and eligibility criteria to enable DTC to better allocate and leverage resources.
- Developing a Section 5310 program funding allocation process that aligns with the need to select "high-priority" projects, services, and programs that are derived from a coordinated plan.
- Revising the Section 5310 program grant management process and applicant eligibility requirements based on new federal funding guidelines;
- Inventory and GIS map service areas and trip frequencies of all 5310 recipients to identify duplication of services and vehicle/trip efficiencies.
- Conducting an inventory of "best-practice" Section 5310 programs (e.g., DOTs, MPOs, regional associations/councils of governments) that have realigned programs to conform to new federal mandates.
- Considering the need to introduce requirements for Section 5310 applicants to:
    - Actively contribute to mobility management efforts, engage in coordination activities, and participate/attend coordinated plan committee meetings.
    - Demonstrate project management (e.g., financial management, asset management, safety and training, and performance reporting).

3. Advance a Mobility Management Framework in Delaware

Mobility on Demand (MOD) is being advanced by FTA as an innovative, user-focused approach that leverages emerging mobility services, integrated transit networks and operations, real-time data, connected travelers, and cooperative Intelligent Transportation Systems (ITS) to allow for a more traveler-centric transportation system. Opportunities for Delaware to compete for federal funding (with DTC as the "lead" agency) could greatly increase the likelihood of moving strategic initiatives forward. Examples include the expansion of existing programs (e.g., Flex, RideShare Delaware) or the development of new innovations such as a one-click/one-call travel information portal/trip planning system to serve as "one-stop shop" resource to make travel arrangements across multiple modes and transportation. Other opportunities to advance the state's mobility management framework require the evaluation, expansion, and possible replication of current programs designed to offer additional services to seniors and persons with disabilities as well as the consideration of technological and operational efficiencies within DTC services and programs.

3a. Evaluation and Assessment of Current Initiatives and Pilot Programs Underway

- Evaluating outcomes of Flex services piloted in Sussex County and determining whether this service can or should be replicated on other parts of the state.
- Determining the cost savings of partnerships with Easterseals and CHEER aimed at offsetting burdens place on paratransit service. Is this likely to be continued or expanded based on an assessment of these arrangements?
- Expanding the RideShare Delaware program to include trips for transportation-disadvantaged individuals. Would new federal program components support this type of expansion, and, if so, how?

3b. Identify State Policies and Regulatory Interpretations Impacting Delaware's Mobility Coordination Efforts

- Working with other state agency directors and cabinet-level administrators to identify opportunities to work together on common mobility challenges facing clients and their families.
- Reviewing and identifying Delaware's public carrier laws that might encourage additional mobility partnership opportunities.
- Identifying barriers to partnering with other state agencies, nonprofits, and private service providers that might prohibit coordination efforts.

3c. Assess Technological and Operational Efficiencies

- Forming a technical advisory committee to serve and inform a statewide coordinating council. Such a committee would review and advise a coordinating council on the technical merits of Delaware's Section 5310 program and the program's alignment with the Statewide Action Plan (i.e., coordinated plan). The need for a competitive selection process and performance metrics might be considered.
- Reviewing and updating the current paratransit "in-take" and application process to aid in reducing consumer ride time and narrowing gaps between consumers' residences and health- and social-service-related trips (e.g., adding a question regarding proximity between residence and facilities to the application form).
- Implementing demand-management strategies (e.g., trip management activities, feeder services, improved ADA accessibility to transit facilities, paratransit eligibility process, travel training programs) as recommended in the 2007 *Framing the Issues of Paratransit Services in Delaware* report.

- Reviewing current paratransit service application processes to help identify how individuals opt in to select health service locations/facilities and whether opportunities to better influence this selection process exist at the agency level.
- Researching and providing recommendations/best practices for developing and obtaining funding for innovative technology (e.g., travel information portal/trip planning system).
- Identifying mobility management policies, interagency coordination efforts, and collaborative models to help in improving the state's transportation and health service gaps/efficiencies.
- Identifying health- and social services-related partnerships and initiatives that might assist in relieving current paratransit demand (e.g., telemedicine and community-based health services that require less movement of people to healthcare and service facilities).
- Developing a plan for educating the state's major healthcare and service providers about the paratransit referral and application process (e.g., service referrals to locations that are closer to patients' and/or caregivers' residence).

4. Consider Piloting National Best-Practice Models Appropriate for Delaware

IPA's research of national best practices identified nine themes that improve mobility and coordination of specialized transportation services. IPA cited best-practice examples, prepared a matrix to summarize outcomes, and evaluated the potential replicability of successful national best practices in Delaware. As part of the update to the 2007 Statewide Action Plan, stakeholders should work together to consider replicability of national best-practice strategies in Delaware, including:

- Developing and implementing a one-click/one-call travel information portal/trip planning system to serve as "one-stop shop" resource to make travel arrangements across multiple modes and transportation.
- Expanding specialized transportation mobility options.
- Utilizing transportation technology.
- Supporting fee-based transportation co-ops.
- Enhancing coordination of services (improving the usability of existing services through new technologies, innovative partnerships/programs, and expanded access).
- Linking land use and transportation planning
- Linking shared-use mobility to public transit (e.g., Uber, Lyft, Lift Hero).
- Improving mobility infrastructure.

- Expanding the Rideshare Delaware program to transportation-disadvantaged populations.

5. Develop and Implement an Ongoing Education and Outreach Strategy

Developing and maintaining ongoing local collaborations and communication with partners is critical to the implementation of new or the expansion of current mobility management and coordination efforts. Moreover, extensive community outreach and public engagement satisfies federal requirements to ensure diverse stakeholder input in developing coordinated plans, improving funding allocation strategies, and competing for federal discretionary grant opportunities. As described in the Request for Proposals/Notice of Funding Opportunity under the 2016 *Ride to Wellness Demonstration and Innovative Coordinated Access and Mobility Grants* program, "eligible proposers and eventual grant applicants…must serve as the lead agency of a local consortium that includes stakeholders from the transportation, healthcare, human-services, or other sectors." In addition, the Phase I (FY16) county-specific workshops emphasized a lack of public awareness regarding several new DART-affiliated and community-based transportation options. Workshop attendees noted the need for more interagency education, awareness, information sharing, and technology-driven travel information portal/trip planning system.

DTC leadership and mobility management staff, in collaboration with identified partner organizations, should consider formulating a community outreach and education strategy. The goal is to develop ongoing strategies for engagement with partners that would assist in advancing the state's mobility management framework, while improving DTC's advantage to compete for federal funding opportunities that support statewide mobility and coordination efforts for specialized transportation services. As previously discussed, this includes broadening stakeholder representation to reflect federal public participation mandates. To begin, DTC should consider:

- Developing an outreach and education plan that facilitates and promotes continual communication and engagement with local and statewide community partners, including other transportation providers, nonprofits, and social service organizations, state agencies, and major healthcare providers who are key players for competing for large, federal grant programs.
- Engaging other stakeholders (beyond those described above) besides EDTAC, to include seniors, persons with disabilities, veterans, low-income populations, and other identified transportation-disadvantaged groups.
- Conducting outreach to assess interest in developing a pilot or demonstration project(s).

- Developing methods, partnerships, and strategies to disseminate information about transportation and mobility options.
- Improving information on existing services and provide appropriate formats (i.e., digital media, traditional media, social media) to customers and specialized transportation providers.
- Building partnerships to promote regional transit awareness campaigns.
- Expanding public information about traveling training opportunities to targeted groups.

6. Elevate the Importance of Land-Use and Transit Integration

In Delaware, land-use decisions are made at the local level, while the bulk of infrastructure (e.g., transportation infrastructure, systems, and services) that support land-use decisions are funded by the state. Delaware's *Strategies for State Policies and Spending* provides policy guidance for state activities and serves as a framework for coordinating the plans and actions of local governments. Yet, promoting integration of land-use and transportation planning is no easy task. The importance of integrating land-use decisions with transit investments should be elevated.

One topic of discussion at the county workshops involved land-use and transit planning disconnects. Changes in demographics, shifts in land-use patterns, and the disconnection between land-use and transit planning can all drive demand for specialized transportation services (including paratransit) in Delaware. "Demand drivers" of paratransit services in Delaware include the development of "age-restricted" communities in remote areas, policies permitting private roads and cul-de-sacs, first- and last-mile barriers to transit, and the location of community service facilities relative to transit. IPA is conducting concurrent research to identify and map community facilities that drive demand for specialized public transportation services in Delaware. In addition, IPA, in collaboration with WILMAPCO and DTC, mapped the location of "age-restricted" retirement communities (also called "active adult," 55+ or 62+, independent living communities) in Delaware. These communities (as opposed to "assisted-living, continuing care, or skilled nursing" facilities) may generate a future demand for paratransit and/or specialized transportation services as these residents age-in-place and may lose their ability to drive. In addition, preliminary research points to issues concerning the evolution of manufactured home communities in Sussex County from seasonal, resort-oriented places to year-round, residential and mixed-use communities. Land-use and transportation planners need to assess the extent to which these communities are becoming targeted destinations that attract retirees and low-income individuals seeking low-cost housing options. This shift in land use may have implications for state services—particularly transportation

and/or emergency services—in Level 3 and Level 4 areas that may be flood-prone and inaccessible during inclement weather. Suggested strategies include:

- Advancing a transit-supportive development framework in Delaware—possibly based on FTA's typologies, such as transit-ready development, transit-integral development, transit-adjacent development, and transit-coincidental development (Santasieri, 2014).
- Promoting the adoption of local transit-supportive land-use practices to better integrate transit planning with local land-use planning (e.g., access management, mixed-use and multi-density development, street connectivity standards, integrated bicycle and pedestrian facilities, context sensitive design, and other techniques that improve the link between transportation and land-use planning).
- Heightening the awareness and need for local governments to collaboratively address first- and last-mile barriers to transit (e.g., ADA accessibility, dim lighting, lack of transit shelters, poor signage, sense of security or safety, condition of sidewalks, lack of bike infrastructure, or absence of other amenities).
- Creating and sharing GIS datasets and maps (via FirstMap Delaware: http://firstmap.gis.delaware.gov/) with layers displaying the age-restricted communities and their relation to fixed routes, bus stops, paratransit buffers, flex zone buffers, and state strategy levels.
- Leveraging Delaware's Downtown Development District program and the newly adopted Healthy and Transit-Friendly Development Act as policy frameworks to incentivize market-rate and affordable infill development within transit corridors, foster transit-supportive development, and better align local decision-making with transportation investments.
- Working with the Delaware Office of State Planning Coordination to develop PLUS process strategies to better align the location of active-adult communities and community service facilities with State Strategy Levels and existing/planned fixed-route transit routes.
- Sharing outcomes of this study and summary report on identifying/mapping community facility locations along with a link/access to GIS datasets.
- Advancing the need for Dover/Kent County MPO and Salisbury/Wicomico County (Md.) MPOs to conduct a transportation justice study similar to the one conducted by WILMAPCO.
- Conducting GIS mapping and geospatial analysis to better understand the extent to which manufactured home communities in Sussex County are evolving from seasonal, resort-oriented places to year-round, residential and mixed-use communities and assessing whether these communities may generate a future demand for paratransit and other state services.

References

49 U.S.C. 5310 (2015 edition). Sec. 5310 Formula grants for special needs of elderly individuals and individuals with disabilities. Retrieved from the U.S. Government Printing Office www.gpo.gov/fdsys/pkg/USCODE-2015-title49/html/USCODE-2015-title49-subtitleIII-chap53-sec5310.htm.

511NY. (n.d.). About 511NY. Retrieved from 511ny.org/about.

Accuardi, Z. (2017, April 5). Transit is made for walking. Retrieved from transitcenter.org/2017/04/05/transit-is-made-for-walking/.

American Public Transportation Association. (2012). Mobility management customer-focused public transportation. Retrieved from www.apta.com/resources/reportsandpublications/Documents/APTA-Mobility-Management-Brochure-March-2012.pdf.

American Public Transportation Association. (2016). Shared mobility and the transformation of public transit. Retrieved from www.apta.com/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf.

Association for Commuter Transportation. (2014). Defining "ridesharing:" A guide for reporters, legislators, and regulators. Retrieved from actweb.org/wp-content/uploads/2014/11/Ridesharing-Definition-Release_091714v2.pdf.

Bike Delaware (2016). Policy Memo: Delaware, Developing walkable, bikeable, and transit-connected communities. Retrieved from www.bikede.org/wp-content/uploads/2016/11/Delawares-Innovation-Economy.pdf.

Bregman, S. (2010). Paducah to open travel management coordination center. Retrieved from www.thetransitwire.com/2010/02/17/paducah-to-open-travel-management-coordination-center/.

Bregman, S. (2016). NYC transit hosts hackathon to transform Staten Island bus network. Retrieved from www.thetransitwire.com/2016/02/10/nyc-transit-hosts-hackathon-to-transform-staten-island-bus-network/.

CCAM. (2006). Coordinated human service transportation planning: Final policy statement. Washington D.C. Retrieved from www.unitedweride.gov/1_1159_ENG_HTML.htm

Chicago Transit Authority. (n.d.). Trip planners. Retrieved from www.transitchicago.com/planatrip/default.aspx.

Code of Federal Regulations, 49 § 604.3(g). Basic definition of demand responsive service. Retrieved from www.gpo.gov/fdsys/pkg/CFR-2011-title49-vol7/pdf/CFR-2011-title49-vol7-sec604-3.pdf.

Dalton, D., & Hosen, K. (2008). A focus on mobility management. Retrieved from www.tlpa.org/meetings/fta/articles/FTA_Article_Vol20_No4.pdf.

DART First State. (n.d.). About rideshare Delaware. Retrieved from ridesharedelaware.org/about-rideshare-delaware/.

Delaware Department of Transportation (2016). Department of Transportation fiscal year 2017 base budget review. Retrieved from legis.delaware.gov/docs/default-source/JFCDocuments/FY1755DelDOTBaseBudgetReview.pdf?sfvrsn=2

Delaware Department of Transportation. (2014). Delaware transportation facts 2014. Retrieved from www.deldot.gov/information/pubs_forms/fact_book/pdf/2014/2014DelDOTFactBook.pdf?052616.

Delaware Office of State Planning Coordination (2012). Guide for master planning in Delaware. Retrieved from stateplanning.delaware.gove/docs.MasterPlanGuide.pdf.

Delaware Office of State Planning Coordination (2015). State of Delaware comprehensive plan checklist. Retrieved from stateplanning.delaware.gov/docs/comprehensive-plan-checklist-guide.pdf.

Emory, D. (2014). The technology behind a new kind of travel planning. Retrieved from mobilitylab.org/2014/04/16/the-technology-behind-a-new-kind-of-travel-planning/.

Federal Highway Administration. (n.d.). Fixing America's surface transportation act or FAST Act. Retrieved from www.fhwa.dot.gov/fastact/.

Federal Transit Administration (2017, January). Coordinating Council on Access and Mobility: Industry update. nationalcenterformobilitymanagement.org/wp-content/uploads/2013/11/CCAM-Transit-Industry-Update-Session-Notes-1-25-17.pdf

Federal Transit Administration. (2016). Mobility on Demand (MOD) sandbox program. Retrieved from www.transit.dot.gov/funding/applying/notices-funding/mobility-demand-mod-sandbox-program.

Federal Transit Administration. (2016). Rides to wellness demonstration and innovative coordinated access and mobility grants program – 2016 NOFO. Retrieved from www.transit.dot.gov/funding/applying/notices-funding/rides-wellness-demonstration-and-innovative-coordinated-access-and.

Government Accounting Office. (2003). Transportation disadvantaged populations: Some coordination efforts among programs providing transportation, but obstacles persist. Retrieved from www.gao.gov/new.items/d03697.pdf.

IdeaScale. (2016). Background on ATTRI. Retrieved from nationalonlinedialoguetadt.ideascale.com/a/pages/backgroundonattri.

Institute of Public Administration. (2013, May). Transportation services in Delaware for persons with disabilities and senior citizens. Retrieved from www.ipa.udel.edu/publications/transportation-services-report-web_2013.pdf.

ITNAmerica. (n.d.). Providing transportation to seniors and people with visual impairments. Retrieved from itnsoutherndelaware.org/node/43.

Jordan, W. (2015, March 27). Riding high after 55. Washington Post. Retrieved from www.washingtonpost.com/realestate/spring-home-guide-2015-riding-high-after-55/2015/03/26/b970e1d8-9054-11e4-a412-4b735edc7175_story.html?utm_term=.5ee266b4359d

Kansas Rural Transit Assistance Program. (n.d.). The missing link: transportation's role in health care. Retrieved from www2.ku.edu/~kutc/pdffiles/KTRFS15-RidestoWellness.pdf.

King County, WA. (n.d.). Explore your options. Retrieved from www.kingcounty.gov/transportation/kcdot/MetroTransit/InMotion/UsefulTools.aspx.

King County, WA. (n.d.). Overview - King County mobility coalition. Retrieved from metro.kingcounty.gov/advisory-groups/mobility-coalition/.

Los Angeles County Metropolitan Transportation Authority & Southern California Association of Governments. (2014). First last mile strategic plan & planning guidelines. Retrieved from media.metro.net/docs/sustainability_path_design_guidelines.pdf.

Meehl, D. (2010). Y OPAS offers free transportation to seniors as city reduces services. Retrieved from www.ahwatukee.com/news/article_5a17d610-afd0-11df-b73b-001cc4c03286.html.

Montachusett Regional Transit Authority. (n.d.). MOVET: moving our veterans. Retrieved from mart.movetma.com/tripplanner/.

Office of the Federal Register. (2016). Public transportation innovation funding opportunity; Mobility on Demand (MOD) Sandbox Demonstration Program. Retrieved from www.federalregister.gov/documents/2016/05/03/2016-10320/public-transportation-innovation-funding-opportunity-mobility-on-demand-mod-sandbox-demonstration.

Office of the Federal Register. (2016). Rides to wellness demonstration and innovative coordinated access and mobility grants. Retrieved from www.federalregister.gov/documents/2016/03/29/2016-07008/rides-to-wellness-demonstration-and-innovative-coordinated-access-and-mobility-grants.

Puget Sound Regional Council. (2013). The growing transit communities strategy. Retrieved from www.psrc.org/assets/9539/GTCStrategy.pdf.

Regional Transportation Authority. (2012). IL: RTA's Goroo now available on smartphones. Retrieved from www.masstransitmag.com/press_release/10828386/il-rtas-goroo-now-available-on-smartphones.

Research Triangle Regional Public Transportation Authority. (n.d.). GoSmart. Retrieved from www.gosmartnc.org/.

Riders' Club Cooperative. (n.d.). About us. Retrieved from www.ridersclubcoop.org/RCCoopAboutUs.html.

Riverside Transit Agency. (n.d.). 211 VetLink: connecting veterans to their community. Retrieved from www.riversidetransit.com/index.php/news-a-publications/latest-news/item/657-211-vetlink-connecting-veterans-to-their-community.

Rodman, W., Berez, D., & Moser, S. (2016). The national mobility management initiative: State DOTs connecting specialized transportation users and rides. Retrieved from onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-65(60)_FinalReport.pdf.

San Bernardino, CA. (n.d.). 2-1-1 VetLink Trip Planner. Retrieved from www.211vetlink.org/en/users/747794/trips/new.

Santasieri, C. (2014). Planning for Transit-Supportive Development: A Practitioner's Guide—Section 5:
Local Planning and Transit-Supportive Development. FTA Report No. 0057. www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0057.pdf

Schiller, B. (2014). This ride-sharing service is like Uber for the elderly. Retrieved from www.fastcoexist.com/3035804/this-ride-sharing-service-is-like-uber-for-the-elderly.

Scott and Watkins. (2014). Transportation improvement districts: A guide for Delaware local governments. Retrieved from www.ipa.udel.edu/publications/TID-Guide-2015-Final-Web.pdf.

Southeastern Pennsylvania Transportation Authority. (2016). SEPTA and Uber announce transit partnership. Retrieved from septa.org/media/releases/2016/05-25-16a.html.

State of Delaware. (2017, June). Operating Budget: Fiscal Year 2018 Final Operating Budget Act (HS1 for HB275). Retrieved from budget.delaware.gov/budget/fy2018/documents/hb275.pdf.

The American Presidency Project. (2004). George W. Bush: Executive Order 13330—human service transportation coordination. Retrieved from www.presidency.ucsb.edu/ws/?pid=61425.

The News Journal. (2016). Startup giving a lift to NCCo's seniors, disabled. Retrieved from www.delawareonline.com/story/money/small-business/2016/07/24/startup-giving-lift-nccos-seniors-disabled/87507012/.

Traffic Technology Today. (2016). Iowa DOT launches new rideshare program. Retrieved from www.traffictechnologytoday.com/news.php?NewsID=82552.

United We Ride. (2007). Mobility management. Retrieved from old.mwcog.org/tpbcoordination/documents/UWR_Mobility_mgt_factsheet.pdf.

U.S. Access Board. (2011). Proposed accessibility guidelines for pedestrian facilities in the public-right-of-way. www.access-board.gov/attachments/article/743/nprm.pdf

U.S. Centers for Medicare & Medicaid Services (2016). Delaware focused program integrity review: Final report. Retrieved from www.cms.gov/Medicare-Medicaid-Coordination/Fraud-Prevention/FraudAbuseforProfs/Downloads/DEfy15.pdf

U.S. Department of Transportation. (n.d.). 511: America's traveler information telephone number. Retrieved from www.fhwa.dot.gov/trafficinfo/511.htm.

U.S. Department of Transportation. (n.d.). Accessible transportation technologies research initiative (ATTRI) user needs assessment: stakeholder engagement report. Retrieved from www.its.dot.gov/research_archives/attri/pdf/REV_508_ATTRI%20Final%20Report.pdf.

U.S. Department of Transportation, FTA. (2015, November). Americans with Disabilities Act guidance. FTA C 4710.1 www.transit.dot.gov/sites/fta.dot.gov/files/docs/Final_FTA_ADA_Circular_C_4710.1_1.docx

U.S. Department of Transportation. (n.d.). Mobility on demand, "Transform the way society moves." MOD fact sheet #1: Overview. Retrieved from www.its.dot.gov/factsheets/pdf/MobilityonDemand.pdf.

U.S. Department of Transportation, FTA. (2014). Enhanced mobility of seniors and individuals with disabilities program guidance and application instructions. Retrieved from www.nadtc.org/wp-content/uploads/FTA-Section-5310-Circular-C9070_1G_FINAL_circular-Word-version.docx.

U.S. Department of Transportation, FTA. (2016). "Premium charges" for paratransit services. Retrieved from www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/premium-charges-paratransit-services.

U.S. Department of Transportation, FTA. (2015). 5310 operating and capital assistance application manual. Retrieved from www.fdot.gov/transit/Pages/FFY15Section5310OperatingCapitalAssistanceManual.pdf.

U.S. Department of Transportation, FTA. (2016). Section 5310 program overview with FAST Act changes. Retrieved from www.transit.dot.gov/sites/fta.dot.gov/files/docs/Section%205310%20PPT%20Slides%20March%202016.pptx.

U.S. Department of Transportation. (2016). U.S. Department of Transportation announces $8 million funding opportunity for innovative public transportation mobility. Retrieved from www.transportation.gov/briefing-room/us-department-transportation-announces-8-million-funding-opportunity-innovative-publ-0.

U.S. Department of Transportation, FTA. (n.d.). Veterans Transportation and Community Living Initiative. Retrieved from www.transit.dot.gov/funding/grant-programs/veterans-transportation/veterans-transportation-and-community-living.

Utah Transit Authority. (2015). First/Last mile strategies study. Retrieved from www.rideuta.com/-/media/Files/Studies-Reports/UTAFirst_LastMileFINALCOMP1.ashx?la=en.

Valley Metro. (2015). Five-year strategic plan. Retrieved from www.valleymetro.org/images/uploads/Valley_Metro_Strategic_Plan_2016-2020_WEB.pdf.

Valley Metro. (2015). Introducing Ridekick®: Valley Metro's official mobile app for easy trip planning. Retrieved from www.valleymetro.org/pressreleases/detail/introducing-ridekick-valley-metros-official-mobile-app-for-easy-trip-planning.

Valley of the Sun YMCA. (n.d.). YMCA's outreach programs for Ahwatukee seniors (Y OPAS). Retrieved from valleyymca.org/opas/.

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